

CHAPTER 5
BIODIVERSITY

5.0 BIODIVERSITY

5.1 INTRODUCTION

This chapter of the Environmental Impact Assessment Report (EIAR) was carried out by Altemar Ltd. It assesses the biodiversity value of the proposed development area and the potential impacts of the development on the ecology of the surrounding area and within the potential zone of influence (ZOI). Standard construction and operational phase control measures, in addition to monitoring measures are proposed to minimise potential impacts and to improve the biodiversity potential of the proposed development site. However, it is important to note that none of the measures proposed are necessary for the protection of Natura 2000 sites or their conservation objectives. These are standard measures to comply with legislation and in particular Water Pollution Acts.

The programme of work in relation to biodiversity aspects of the EIAR have been designed to identify and describe the existing ecology of the area and detail sites, habitats or species of conservation interest. It also assesses the significance of the likely impacts of the scheme on the biodiversity elements and designs mitigation measures to alleviate identified impacts. Details of the mitigation measures are contained within the relevant chapters of the EIAR and these measures in addition to the phasing of the project are contained in the accompanying Preliminary Construction Management Plan (PCEMP), which has been prepared by DBFL Consulting Engineers.

A separate AA Screening, in accordance with the requirements of Article 6(3) of the EU Habitats Directive, has been produced to identify potential impacts of the development on Natura 2000 sites, Annex species or Annex habitats. It concludes that *'On the basis of the content of this report, the competent authority is enabled to conduct a Stage 1 Screening for Appropriate Assessment and consider whether, in view of best scientific knowledge and in view of the conservation objectives of the relevant European sites, the Proposed Development, individually or in combination with other plans or projects is likely to have a significant effect on any European site. There is no possibility of significant impacts on Natura 2000 sites, features of interest or site specific conservation objectives. A Natura Impact Statement is not required.'*

5.1.1 Background to Altemar

Altemar Ltd. is an established environmental consultancy that is based in Greystones, Co. Wicklow, that has been in operating in Ireland since 2001.

Author Details

Bryan Deegan

Bryan Deegan (MCIEEM) is the primary consultant. Bryan Deegan has 27 years' experience working in Irish terrestrial and aquatic environments, providing ecological consultancy. He has a Certificate in Science, Diploma in Applied Aquatic Science, BSc in Applied Marine Biology and a MSc in Environmental Science. Bryan has extensive aquatic and terrestrial fieldwork experience including flora and fauna (bird & mammal) surveys. Recent projects include carried out and managed by Bryan include the Lidl Regional Distribution Centre in Newbridge (and road proximate to the proposed development site), Primark warehouse Newbridge, airside works for daa at Dublin Airport, ecological elements for 5 marine fibre optic cables (within Irish waters and landfall) in addition to housing developments including SHD's.

Hugh Delaney

Hugh Delaney is an ecologist (ornithologist primarily) having completed work on numerous sites with ecological consultancies over 10+ years. Hugh is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

5.2 STUDY METHODOLOGY

This chapter has been prepared having regard to the following guidelines:

- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government, 2018)
- Guidelines for Ecological Impact Assessment in the UK and Ireland, (Chartered Institute of Ecology and Environmental Management) (CIEEM, 2018),
- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017)
- Guide to Habitats in Ireland (Fossitt, 2000).
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022)
- Guidelines for Assessment of Ecological Impacts of National Roads Schemes: Revision 2 (National Roads Authority, 2009).
- Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).
- Bat Mitigation Guidelines for Ireland (Marnell, Kelleher & Mullen, 2022).
- Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2011).

Desk studies were carried out to obtain relevant existing biodiversity information within the ZOI. The assessment also extended beyond the immediate development area to include those species and habitats that are likely to be impacted upon by the proposed residential development. A Preliminary Ecological Appraisal was carried out in September 2020. A pre-survey biodiversity data search was carried out and updated in March 2022. This included examining records and data from the National Parks and Wildlife Service (NPWS), National Biological Data Centre (NBDC) and the Environmental Protection Agency (EPA), in addition to aerial, 6 inch maps and satellite imagery. Field surveys were carried out as outlined in Table 5.1. All surveys were carried out in the appropriate seasons.

Table 5.1: Field Surveys

AREA	SURVEYORS	SURVEY DATES
Terrestrial Ecology	Bryan Deegan (MCIEEM) of Altemar	August 1st 2020, September 2nd 2021 & May 30th 2022
Aquatic	Bryan Deegan (MCIEEM) of Altemar	August 1st 2020 & September 2nd 2021
Bat Fauna	Bryan Deegan (MCIEEM) of Altemar	September 2nd 2021
Mammal Survey	Bryan Deegan (MCIEEM) of Altemar	March 16th 2021 & March 12th 2022
Wintering Birds	Hugh Delaney (Ornithologist)	October 30th 2021, November 8th 2021, November 24th 2021, December 5th 2021, December 18th 2021, January 7th 2022, January 24th 2022, February 10th 2022, February 25th 2022, March 5th 2022 and March 18th 2022
Breeding Birds	Hugh Delaney (Ornithologist)	May 12th 2022 and June 3rd 2022

Foul wastewater will discharge to a pumping plant that is to be constructed on site, which in turn discharges to an existing public foul sewer located near the south-west corner of the subject site. After attenuation, surface water drainage will be directed to the Shinkeen Watercourse (which passes through the site) and the Hazelhatch watercourse (located along the eastern boundary). Both watercourses form part of the Liffey Catchment and, as such, outfall to the 5000 acre reservoir for the Leixlip Dam Hydro Electric Power Station and to the River Liffey, which in turn outfalls to the estuarine and marine environments at Dublin Bay. As a result, out of an abundance of caution, it is considered that there is an indirect hydrological pathway to designated conservation sites located downstream within Dublin Bay. Details of the proposed development are seen in Chapter 2 of this EIAR. The proposed layout, drainage strategy and landscape design were reviewed to inform this assessment. Further, Chapter 2, Development Description, Chapter 5, Land and Soils and Chapter 6 Water of this submission were reviewed.

5.2.1 Proximity to designated conservation sites and habitats or species of conservation interest

The designated conservation sites within 15km and those with an indirect/direct pathway to the proposed development site were examined for potential impact. Sites beyond 15km have no direct pathway or are across the marine environment where significant dilution, mixing and settlement would occur and given the scale of the proposed development, impacts on sites beyond 15km would be at negligible levels. This assessment included sites of international importance; Natura 2000 sites (Special Areas of Conservation (SAC), Special Protection Areas (SPA)) and Ramsar sites and sites of National importance ((Natural Heritage Areas (NHA), proposed Natural Heritage Areas (pNHA)). Up to date GIS data (NPWS data shapefiles) were acquired and plotted against 1, 5, 10 and 15km buffers from the proposed development site. A data search of rare and threatened species within 10km of the proposed site (GIS shapefile) was provided by NPWS. Additional information on rare and threatened species was researched through the National Biodiversity Data Centre.

5.2.2 Terrestrial and avian ecology

A pre-survey data search was carried out. This included a literature review to identify and collate relevant published information and ecological studies previously conducted and comprised of information from the following sources; the National Parks and Wildlife Service, NPWS Rare and Protected Species Database, National Biodiversity Data Centre, EPA WMS watercourses data, in addition to aerial, 6 inch, satellite imagery. Following the desktop study, walk-over assessments of the site were carried out on the August 1st 2020, March 16th 2021, September 2nd 2021 and May 30th 2022. Surveys were carried out by means of a thorough search within the potential ZOI. The presence of mammals is indicated principally by their signs, such as resting areas, feeding signs or droppings - though direct observations are also occasionally made. Wintering and breeding bird surveys were carried out over the 2021/2022 wintering bird and breeding bird seasons by Hugh Delaney (ornithologist).

Habitat mapping was carried out according to Fossitt (2000) using ArcGIS 10.5 and displayed on Bing satellite imagery or street mapping based on the May 2022 site visit. Any rare or protected species or habitats were noted. As part of the fieldwork an invasive species assessment was carried out. Birds noted on site were classed based on the Birds of Conservation Concern in Ireland classification of red, amber and green, which is based on an assessment of the conservation status of all regularly occurring birds on the island of Ireland.

5.2.3 Bat fauna

A bat roosting and foraging assessment was carried out on the 2nd September 2021 (Appendix 5.1). Onsite trees were inspected for bats and/or their signs and an emergent/foraging assessment was carried out. The site survey was supplemented by a review of Bat Conservation Ireland's (BCIreland) National Bat Records Database. There have been on changes to the habitats on site since the September 2021 survey.

5.2.4 Rating of effects

The terminology for rating impacts is derived from the EPA EIAR Guidelines (2022). on the information to be contained in Environmental Impact Assessment Reports

5.2.5 Difficulties encountered

No difficulties were encountered in relation to the preparation of the Biodiversity report. The bat survey was undertaken within the active bat period (April to September) and a detector survey was possible. Insects were observed in flight during the bat survey. Wintering bird surveys are ongoing on site.

5.3 THE EXISTING RECEIVING ENVIRONMENT (BASELINE SITUATION)

5.3.1 Zone of influence

The potential zone of influence (ZOI) was set at a radius of 2km from the proposed Project. It should be noted that where there was a potential for the ZOI to be influenced by drainage connections, natural biodiversity corridors e.g. rivers or woodland these were also taken into account and the assessment was extended. It is considered that the potential ZOI extends beyond the site outline via the watercourse on site and the proposed foul and surface water drainage strategy. Works are proposed on site which could result in silt or petrochemicals entering the on watercourse. In addition, instream works are proposed. Foul wastewater will discharge to a pumping plant that is to be constructed on site, which in turn will discharge to an existing public foul sewer located near the south-west corner of the subject site. After attenuation, surface water drainage will be directed to the Shinkeen Watercourse (which passes through the site) and the Hazelhatch watercourse (located along the eastern boundary). Both watercourses form part of the Liffey Catchment and, as such, outfall to the River Liffey and the Leixlip Dam Reservoir. The River Liffey enters the estuarine environment within Dublin city and the marine environment at Dublin Bay. As a result, out of an abundance of caution, it is considered that there is an indirect hydrological pathway to designated conservation sites within the estuarine element of Dublin Bay.

The proposed development cannot be considered in isolation. Having regard to this fact, the cumulative environmental impacts of the proposed development together with those of the residential development proposed in the intended SHD application are considered in each Chapter of this EIAR in greater detail than other relevant projects which have the potential for cumulative or in-combination effects. The project that falls to be considered for EIA purposes is the proposed development and the intended SHD (“the combined development”). The application site outline is shown in figure 5-1.

5.3.2 Designated sites

As can be seen from Figures 5.2 (SAC’s within 15km), 5.3 (SPA’s within 15km), 5.4 (NHA and pNHA within 15km), the nearest designated conservation site is Grand Canal pNHA (1.8 km from the subject site) and the nearest Natura 2000 site is Rye Water Valley/Carlton SAC (3.1 km from the subject site). There are no Ramsar sites within 15km of the proposed development site. The distance and details of the conservation sites within 15km of the proposed development are seen in Table 5.2a and Table 5.2b. There is no direct pathway to designated sites. The nearest designated site (Grand Canal pNHA) is at a minimum of 1.8 km from the development with no direct or indirect hydrological connection. Figures 5.5 – 5.10 demonstrate watercourses proximate to the subject site and designated conservation sites with the potential for a hydrological pathway. It should be noted that the proposed works are upstream of the Leixlip Reservoir and Hydroelectric Power station. This is a 5000 acre reservoir and power station constructed by the ESB. Settlement of silt will occur in this long linear reservoir and no significant quantities of silt would be expected to flow downstream beyond this reservoir. Measures are outlined to comply with Water Pollution Acts. These are standard construction measures and are not deemed necessary for the protection of Natura 2000 sites. In the absence of these measures silt would settle within the River Liffey system and in the event of a pollution incident dilution, flocculation and mixing would occur within the river catchment and estuarine element of the River Liffey prior to reaching the nearest Natura 2000 site with a pathway, some 19.5 km downstream, on the far side of the Leixlip Dam and Dublin City. No impacts are foreseen on the designated sites outlined in Table 5-2a and 5-2b due to the significant distance from the application site and the dilution, settlement and mixing within the River Liffey.

Table 5.2a: Natura 2000 sites within 15km (and outside 15km with potential for a pathway) of the proposed development

Natura 2000 Sites	Distance	Direct Hydrological / Biodiversity Connection
Special Areas of Conservation (SAC)		
Rye Water Valley/Carlton SAC	3.1 km	No
Glenasmole Valley SAC	13.3 km	No
Wicklow Mountains SAC	14.6 km	No

South Dublin Bay SAC	20.4 km	No
North Dublin Bay SAC	22.6 km	No
Special Protection Areas (SPA)		
South Dublin Bay and River Tolka Estuary SPA	19.5 km	No
North Bull Island	22.6 km	No

Table 5.3b: National designated sites within 15km (and outside 15km with potential for a pathway) of the proposed development

Designation	Conservation Sites	Distance	Direct Hydrological / Biodiversity Connection
pNHA	Grand Canal	1.8 km	No
pNHA	Royal Canal	3.1 km	No
pNHA	Rye Water Valley/Carlton	3.1 km	No
pNHA	Liffey Valley	3.4 km	No
pNHA	Slade of Saggart and Crooksling Glen	9.4 km	No
pNHA	Lugmore Glen	10.5 km	No
pNHA	Kilteel Wood	10.9 km	No
pNHA	Donadea Wood	12.7 km	No
pNHA	Dodder Valley	12.9 km	No
pNHA	Glenasmole Valley	13.3 km	No
pNHA	North Dublin Bay	19.2 km	No
pNHA	South Dublin Bay	20.4 km	No
Ramsar	Sandymount Strand/Tolka Estuary	20.4 km	No
Ramsar	North Bull Island	22.8 km	No



Figure 5.1: Proposed Development Site Outline (red)

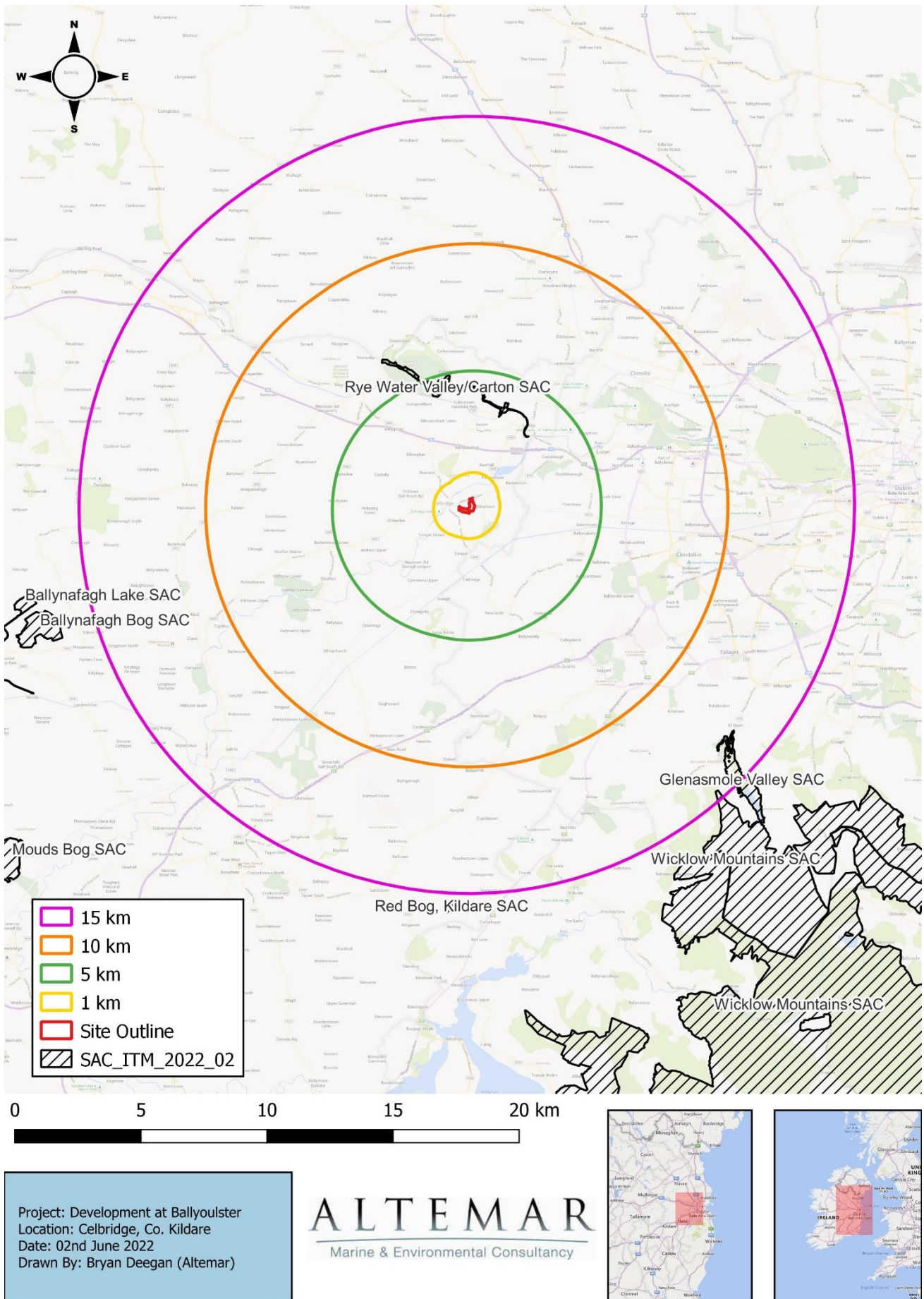


Figure 5.2: Special Areas of Conservation within 15km of the proposed development site

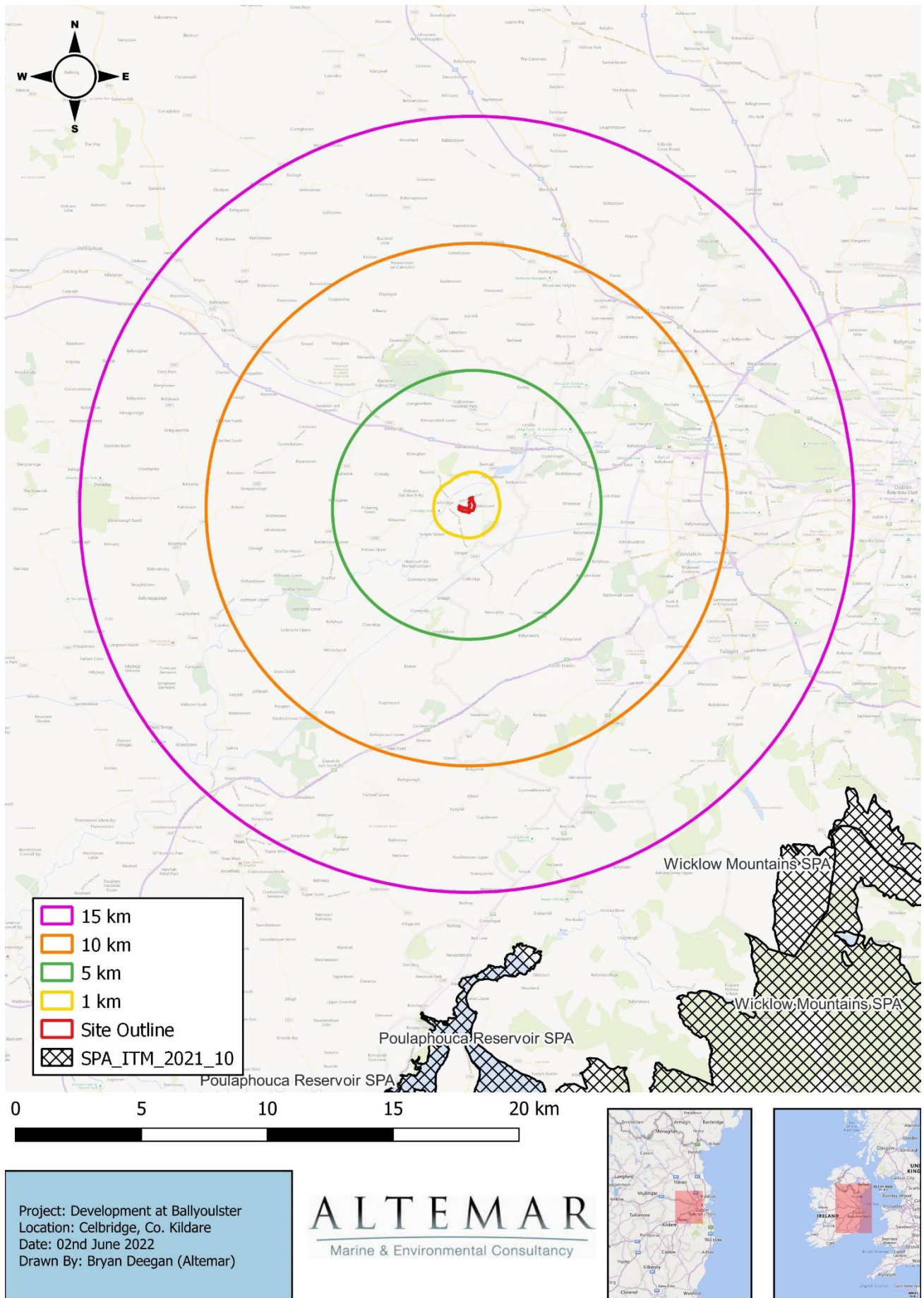


Figure 5.3: Special Protection Areas within 15km of the proposed development site

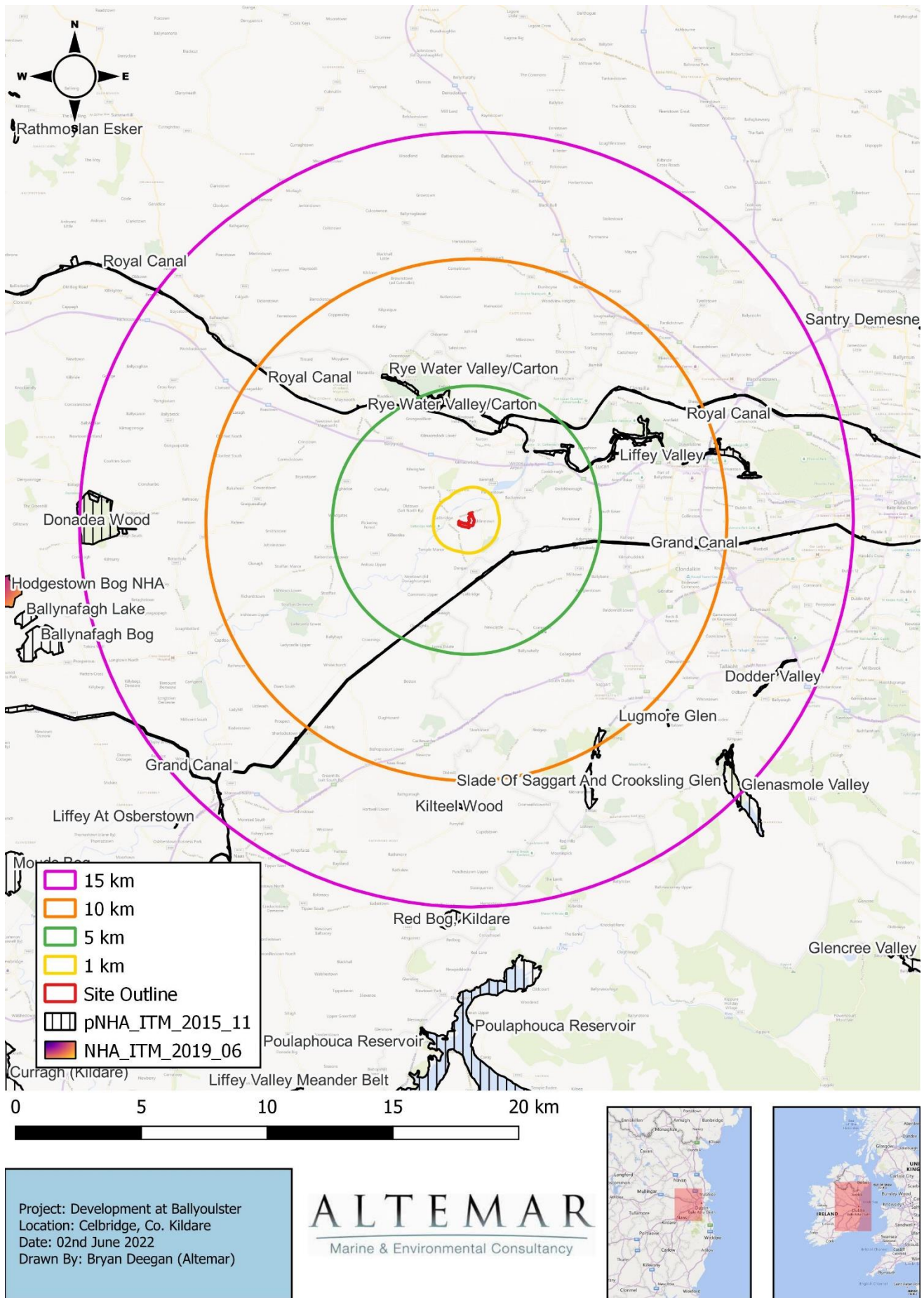


Figure 5.4: NHAs and pNHAs within 15km of the proposed development site



Figure 5.5: Watercourses proximate to the proposed development site (EPA WFD Nomenclature)

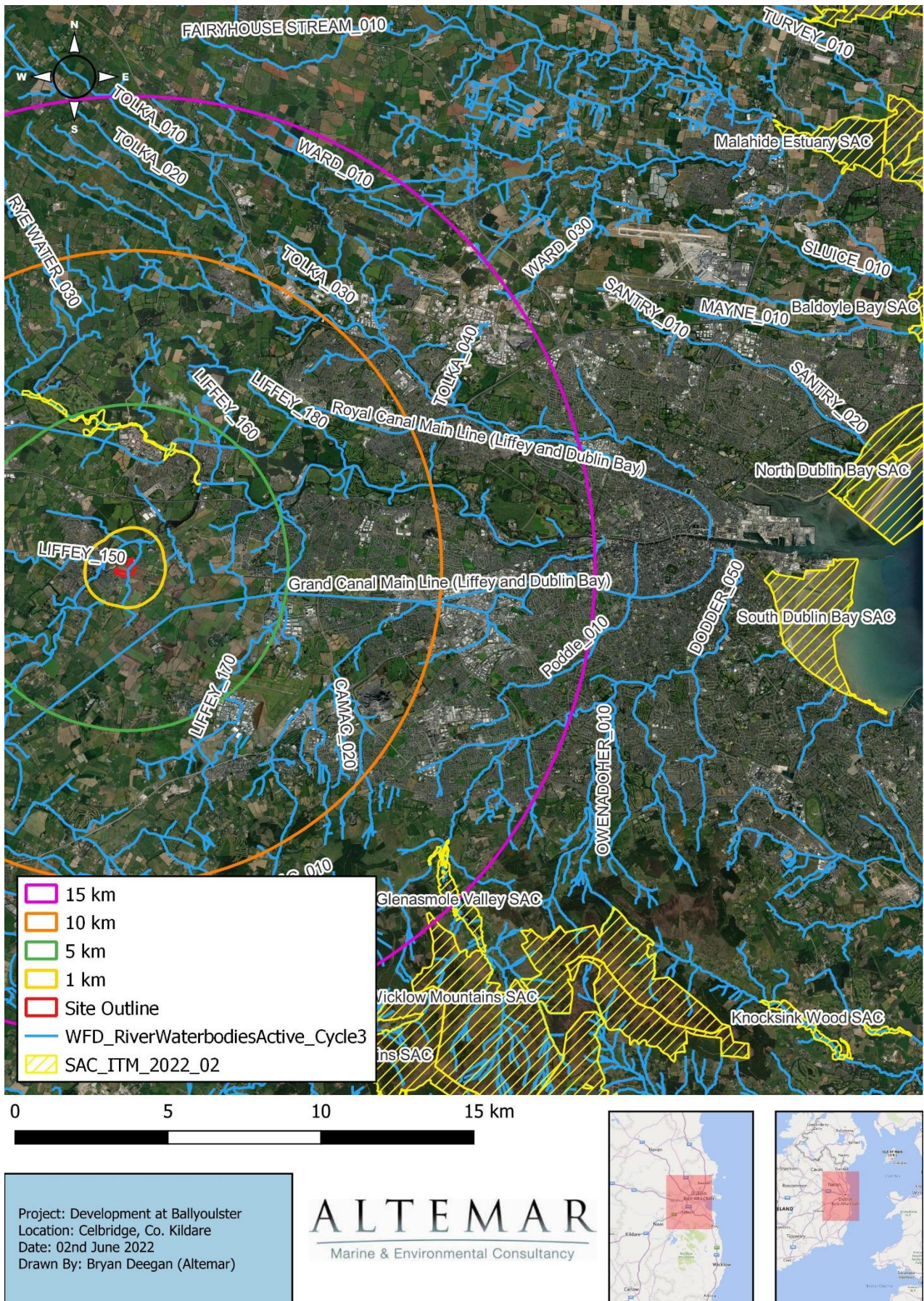


Figure 5.6: Watercourses proximate to the subject site and SACs with a potential hydrological pathway (EPA WFD Nomenclature)

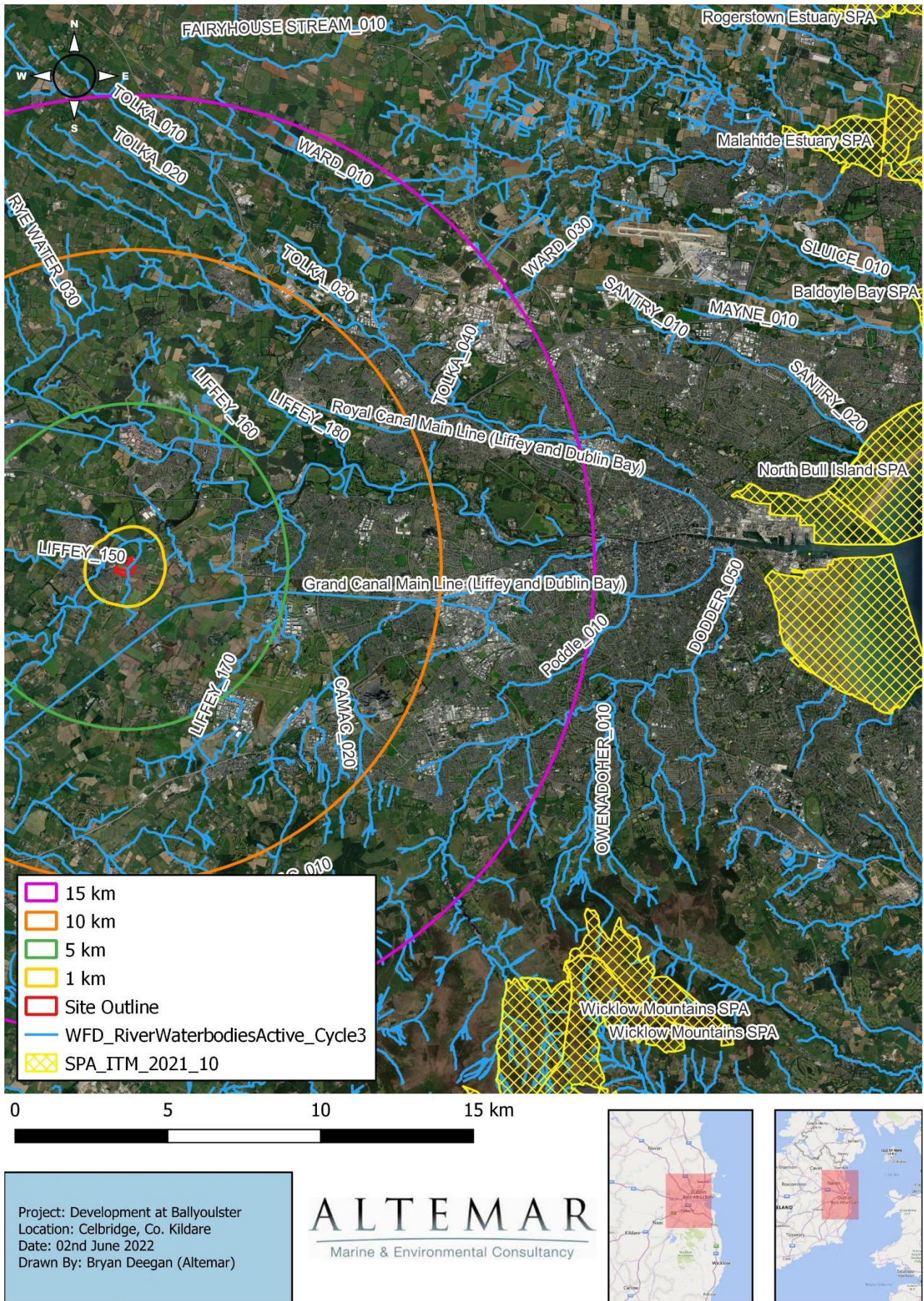


Figure 5.7: Watercourses proximate to the subject site and SPAs with a potential hydrological pathway (EPA WFD Nomenclature)

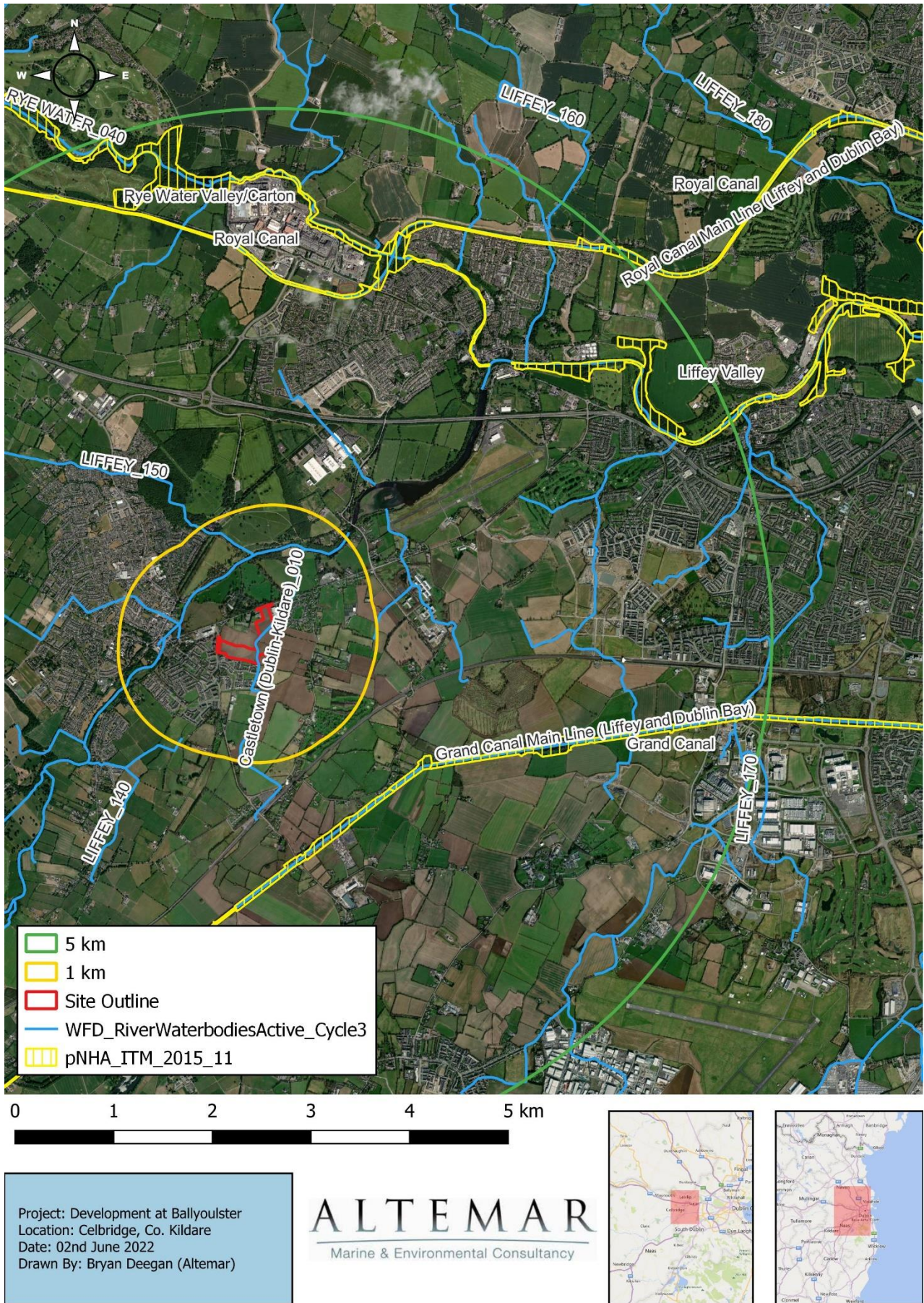


Figure 5.8: Watercourses and pNHAs within 5km of the proposed development site (EPA WFD Nomenclature)

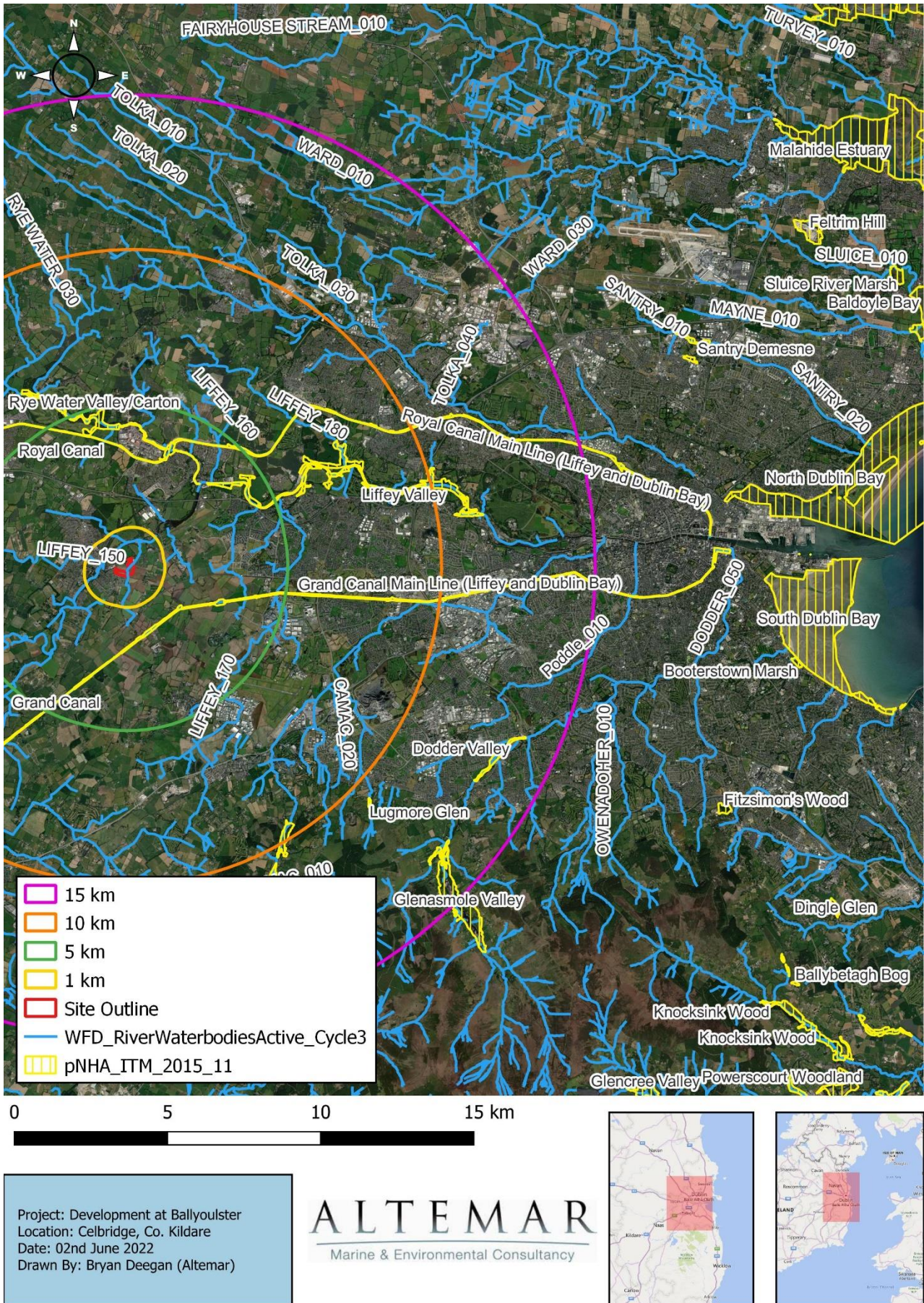


Figure 5.9: Watercourses proximate to the subject site and pNHAs with a potential hydrological pathway

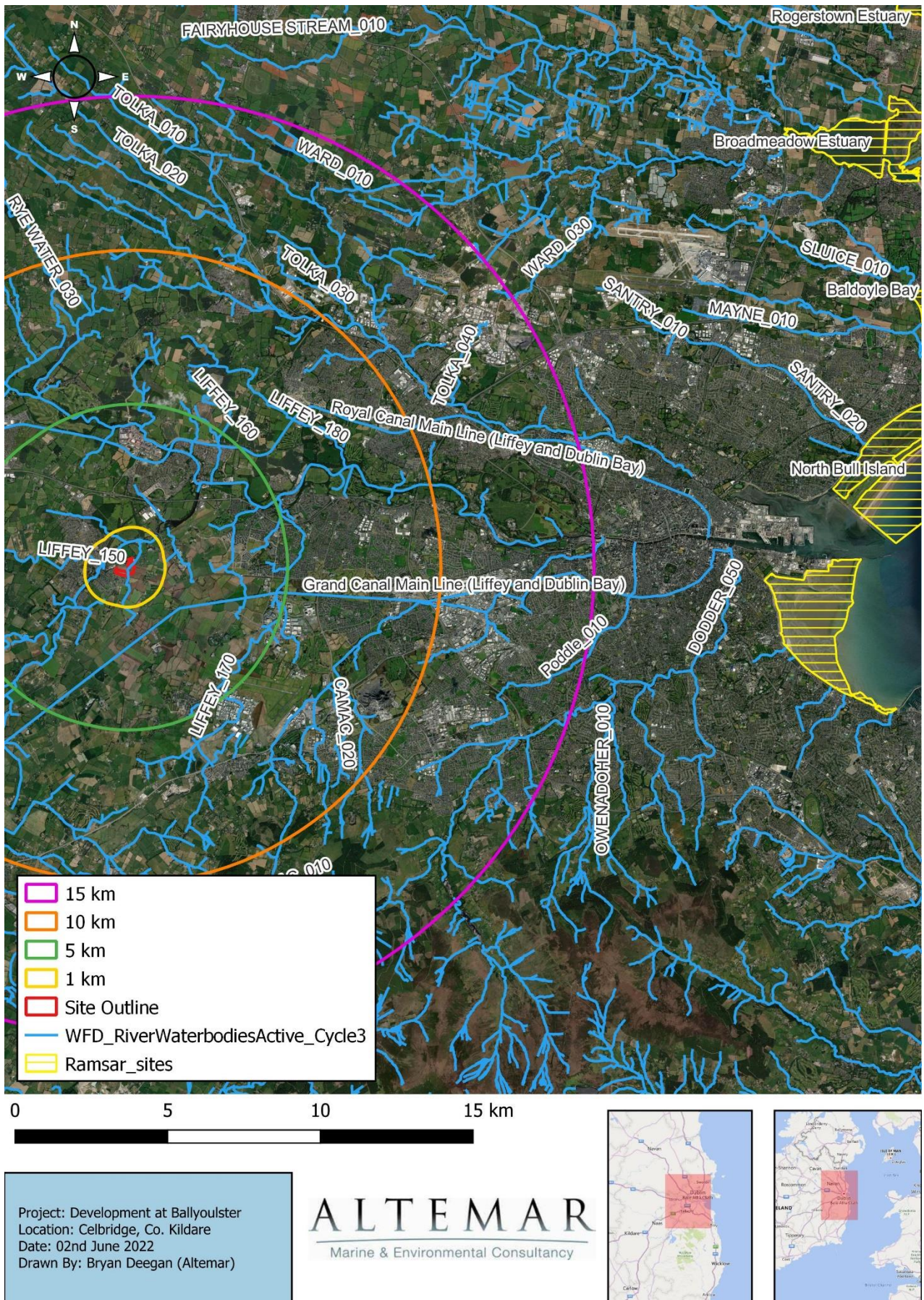


Figure 5.10: Watercourses proximate to the subject site and Ramsar sites with a potential hydrological pathway (EPA WFD Nomenclature)

5.3.3 Species data

It should be noted that no species of conservation importance were noted on site, based on NPWS and NBDC records as fine resolution. Species recorded within two 2km² grids (Reference Nos. N93R & N93W) are seen in Table 5.3. Two reference grids were consulted as the entire site outline is not encompassed within a single 2km² grid.

Table 5.3: National Biodiversity Data Centre Records within two 2km² grids (N93R & N93W)

Common Frog (Rana temporaria), Barn Swallow (Hirundo rustica), Black-headed Gull (Larus ridibundus), Common Pheasant (Phasianus colchicus), Common Starling (Sturnus vulgaris), Common Swift (Apus apus), Common Wood Pigeon (Columba palumbus), House Martin (Delichon urbicum), House Sparrow (Passer domesticus), Mallard (Anas platyrhynchos), Mute Swan (Cygnus olor), Rock Pigeon (Columba livia), Freshwater White-clawed Crayfish (Austropotamobius pallipes), Arthurdendyus triangulates, Canadian Waterweed (Elodea canadensis), Green Figwort (Scrophularia umbrosa), Indian Balsam (Impatiens glandulifera), Japanese Knotweed (Fallopia japonica), Least Duckweed (Lemna minuta), Andrena (Melandrena) nigroaenea, Gooden's Nomad Bee (Nomada goodeniana), Large Red Tailed Bumble Bee (Bombus (Melanobombus) lapidarius), Ephemerella notata, Procloeon bifidum, Rhithrogena germanica, Jenkins' Spire Snail (Potamopyrgus antipodarum), Brown Long-eared Bat (Plecotus auritus), Brown Rat (Rattus norvegicus), Daubenton's Bat (Myotis daubentonii), Eastern Grey Squirrel (Sciurus carolinensis), Eurasian Badger (Meles meles), Lesser Noctule (Nyctalus leisleri), Natterer's Bat (Myotis nattereri), Pipistrelle (Pipistrellus pipistrellus sensu lato), Soprano Pipistrelle (Pipistrellus pygmaeus), West European Hedgehog (Erinaceus europaeus), Common Coot (Fulica atra), Great Crested Grebe (Podiceps cristatus), Little Grebe (Tachybaptus ruficollis), Mallard (Anas platyrhynchos), Sand Martin (Riparia riparia), Tufted Duck (Aythya fuligula), Green Figwort (Scrophularia umbrosa), Indian Balsam (Impatiens glandulifera), Sycamore (Acer pseudoplatanus), Large Red Tailed Bumble Bee (Bombus (Melanobombus) lapidarius), Eurasian Red Squirrel (Sciurus vulgaris), European Rabbit (Oryctolagus cuniculus), West European Hedgehog (Erinaceus europaeus)

The NBDC record sightings of the following species proximate to the proposed development:

- Common Frog (*Rana temporaria*)
- Green Figwort (*Scrophularia umbrosa*)

Table 5.4: Species found by NPWS within 10km

Common Frog (Rana temporaria); Blue Fleabane (Erigeron acer); Green Figwort (Scrophularia umbrosa); Otter (Lutra lutra); Freshwater Crayfish (Austropotamobius pallipes); Smooth Newt (Lissotriton vulgaris); European Badger (Meles meles); Green-winged Orchid (Orchis morio); West European Hedgehog (Erinaceus europaeus); Irish Hare (Lepus timidus subsq. hibernicus); Yellow Bird's-nest (Monotropa hypopitys); Hairy St. John's-wort (Hypericum hirsutum).

The closest species recorded by NPWS to the site was Common Frog (*Rana temporaria*) at 0.8 km north of the site and Green Figwort (*Scrophularia umbrosa*), 0.5 km north west of the site. No species of conservation importance have been noted on site by NPWS within the subject site boundaries.

5.3.4 Species data

Habitats within the combined site were classified according to Fossitt (2000) (Figure 5.11) based on the 30th May 2022 site visit and the species noted within each habitat are described.



Figure 5.11: Habitats within the proposed development site



Plate 1: BC1-Arable Crops (September 2021) & BC3-Tilled Land (March 2021)

BC1-Arable Crops

Arable crops were the primary habitat on site. As seen in Figure 5.11 the proposed development site is primarily a series of arable fields divided by a watercourse with hedgerows located along the watercourse and into a portion of the arable fields. Opportunistic flora species were present. Species noted included creeping buttercup (*Ranunculus repens*), common poppy (*Papaver rhoeas*), sun spurge (*Euphorbia helioscopia*), dandelion (*Taraxacum spp.*), docks (*Rumex spp.*), plantains (*Plantago spp.*), nettle (*Urtica dioica*), groundsel (*Senecio vulgaris*), prickly sowthistle (*Sonchus asper*), scarlet pimpernel (*Anagallis arvensis*), shepherd's purse (*Capsella bursa-pastoris*) and fat hen (*Chenopodium*). No species of conservation importance were noted.



Plate 2: WL1-Hedgerows

WL1- Hedgerows

Several hedgerows were noted on site (Plate 2). These were primarily along the eastern extent of the main watercourse within the site and within the fields to the east of the watercourse. Species included elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), dog-rose (*Rosa canina*), bramble (*Rubus fruticosus agg.*), ash (*Fraxinus excelsior*), ivy (*Hedera helix*), rape (*Brassica napus*), plantains (*Plantago spp.*), rosebay willowherb (*Chamaenerion angustifolium*), hedge bindweed (*Calystegia sepium*), nettle (*Urtica dioica*), cow parsley (*Anthriscus sylvestris*) and cleavers (*Galium aparine*) were noted. A mammal survey was carried out in March 2021 and in March 2022. Evidence of fox (*Vulpes vulpes*) and rabbit (*Oryctolagus cuniculus*) was noted on site. Several small burrows were noted within the hedgerows. No species of conservation importance or their resting or breeding places were noted.



Plate 3: Watercourse within the site (Watercourse on western boundary inset)

FW2- Depositing Lowland Rivers

The stream that bisects the site is located approximately 2-3m below the existing ground level and has steep almost vertical banks. The stream is 1-2m wide in places and appears almost canalised with vegetation strongly cut back. The stream is slow and sluggish with deposits of silt. However, some areas of gravels are noted. Species on the vertical banks included several specimens of Indian (Himalayan) balsam (*Impatiens glandulifera*) (Invasive species), bramble (*Rubus fruticosus agg.*), butterfly-bush (*Buddleja davidii*), ash (*Fraxinus excelsior*), ivy (*Hedera helix*), rape (*Brassica napus*), great willowherb (*Epilobium hirsutum*), nettle (*Urtica dioica*), hedge bindweed (*Calystegia sepium*) were noted. As with the watercourse on the western boundary, much of the watercourse is devoid of instream vegetation and biodiversity. No species of conservation importance were noted. Within the main watercourse within the site several brown trout (*Salmo trutta*) and sticklebacks (*Gasterosteus sp.*) were noted at the downstream end of the site near the northern boundary. No fish were noted upstream of this point or in the western watercourse. No amphibians were noted. No signs of otter (spraints, couches or holts) were noted. However, a potential otter slide was noted on the downstream side of the bridge seen in Plate 3. It is possible that the area is also used for people walking dogs and this may form access to the stream for dogs. This was not observed in the 2022 survey. A second stream is within the woodland to the west of the site. This stream is also well below the surrounding ground level, has a paucity of instream biodiversity and is heavily shaded by the woodland. No instream flora or fish were observed in this stream which has steep canalised banks.

WS1-Scrub

Scrub was noted at the southern end of the site where it borders with a neighbouring housing estate. This was a linear feature between the field and housing estate boundary. Species noted within this habitat included elder (*Sambucus nigra*), ash (*Fraxinus excelsior*), dog-rose (*Rosa canina*), bramble (*Rubus fruticosus agg.*), ivy (*Hedera helix*), honeysuckle (*Lonicera periclymenum*), hedge bindweed (*Calystegia sepium*), cleavers (*Galium aparine*), thistles (*Cirsium arvense* & *C. vulgare*) and rosebay willowherb (*Chamaenerion angustifolium*).



Plate 4: (Mixed) Broadleaf Woodland.

WD1-(Mixed) Broadleaf Woodland.

On the western portion of the site is a linear treeline that is slightly wider than a standard treeline due to the presence of a watercourse (Plate 3 inset) within the habitat. This has resulted in the classification of this area as woodland rather than a treeline, primarily as a result of the width of the habitat. Much of the base of this habitat was covered in dense ivy (*Hedera helix*) (Plate 3 inset). Species within this habitat included elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), ash (*Fraxinus excelsior*), dog-rose (*Rosa canina*), bramble (*Rubus fruticosus agg.*), ivy (*Hedera helix*), honeysuckle (*Lonicera periclymenum*), hedge bindweed (*Calystegia sepium*), bush vetch (*Vicia sepium*), cleavers (*Galium aparine*), cow parsley (*Anthriscus sylvestris*), sycamore (*Acer pseudoplatanus*), alder (*Alnus glutinosa*), oak (*Quercus sp.*), smooth hawk's-beard (*Crepis capillaris*), box (*Buxus sempervirens*), snowberry (*Symphoricarpos albus*), field forget-me-not (*Myosotis arvensiselm*), (*Ulmus sp*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), Privet (*Ligustrum vulgare*), grey poplar (*Populus x canescens*), rowan (*Sorbus aucuparia*) and aspen (*Populus tremuloides*). No terrestrial species of conservation importance were noted. However, as outlined in Appendix 5.1 several bat species were noted in the vicinity of this area foraging along the edge of the treeline. A shaded watercourse with no instream flora, bisects the woodland and is approximately 1.52m below the ground level.



Plate 5. GS2-Dry meadows and grassy verges

GS2-Dry meadows and grassy verges

Several areas of GS2-Dry meadows and grassy verges were noted on site, primarily at the edge of the field where the intensive agriculture ceased and the field boundary with the watercourses, treelines and hedgerows. Species included meadowsweet (*Filipendula ulmaria*), creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum spp.*), docks (*Rumex spp.*), daisy (*Bellis perennis*), clover (*Trifolium repens*), plantains (*Plantago spp.*), nettle (*Urtica dioica*), cat's-ear (*Hypochaeris radicata*), bramble (*Rubus fruticosus*), Willow (*Salix sp*), great willowherb (*Epilobium hirsutum*), common knapweed (*Centaurea nigra*), selfheal (*Prunella vulgaris*) and ash (*Fraxinus excelsior*).

5.3.5 Flora

The plant species encountered at the various locations on site are detailed above. No plant species that are rare or of conservation value were noted during the field assessment. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened plant species were recorded in the vicinity of the proposed site.

Several plants of Indian (Himalayan) balsam (*Impatiens glandulifera*) were noted in the vicinity of the watercourse. This is a species covered under the European legislation, the Birds and Natural Habitats Regulations 2011 (SI 477 of 2011) i.e. Section 49(2) *prohibit the introduction and dispersal of species listed in the Third Schedule whereby "any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow [...] shall be guilty of an offence."* No other invasive plant species that could hinder removal of soil from the site during groundworks, such as Japanese knotweed, giant rhubarb or giant hogweed were noted on site.

5.3.6 Fauna

No terrestrial fauna of conservation importance were noted on the proposed development site. There are small mammal burrows on site within the hedgerows but these would be associated with rabbits. Bats were noted

foraging along the western boundary and in the vicinity of the watercourse on site. No trees of bat roosting potential were noted on site.

Amphibians/Reptiles

The common frog (*Rana temporaria*) was not observed on site. However, there are two watercourses on site and it is likely that frogs may be present. The common lizard (*Zootoca vivipara*) or smooth newt (*Lissotriton vulgaris*) were not recorded on site.

Terrestrial Mammals

Badgers have been noted within the 10km² grid by the NPWS. No badgers or badger activity was noted on site. No protected terrestrial mammals were noted on site or in the immediate vicinity of the site.

Birds

A full Wintering bird assessment (2021/2022) (Appendix 5.2) and breeding bird assessment (2022) (Appendix 5.3) of the site has been carried out. As outlined in wintering bird assessment in Appendix 5.2 which covered a slightly larger survey area including the subject site “50 bird species were recorded at lands at Ballyoulster near Celbridge in County Kildare during 11 winter bird surveys from October 2021 to March 2022. The species diversity was quite typical of that expected in the context of inland arable lands in Leinster. In the context of wintering bird species that are red listed as species of conservation concern in the revised Birdwatch Ireland List of birds of conservation concern in Ireland (2020-2026) Redwing and Snipe were recorded in small numbers. Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA’s).

Some of the more notable species recorded wintering on-site were Yellowhammer, Reed Bunting, Skylark, and Kingfisher (recorded on four dates on the stream) with several sightings of Kestrel and once a Merlin. Snipe was mostly recorded at the south field section of the site. Mallard is amber listed as a wintering species of conservation concern in Ireland and was recorded in small numbers on the stream on-site. Four species were noted passing almost exclusively over the site and were not noted to forage on the site itself.” In relation to snipe the southern field section of the survey site is outside the proposed development site.

As outlined in the breeding bird assessment in Appendix 5.3 “30 Bird species were recorded at the Ballyoulster site over 2 visits in May-June 2022. Of these 9 species were proved breeding on-site, with mainly juveniles observed on-site indicating breeding on-site or in immediate adjacent areas. These were Yellowhammer, Robin, Wren, Blue Tit, Long-tailed Tit, Great Tit, Meadow Pipit, Blackbird and Blackcap. Of these species Yellowhammer are a red-listed breeding species (high conservation concern) from the recently updated Birdwatch Ireland’s Birds of Conservation Concern in Ireland List (2020-2021), a minimum of three pairs were located on-site. Other noteworthy species noted on-site were Meadow Pipit (minimum two pairs), Reed Bunting (one pair), Willow Warbler and Skylark.” It should be noted that one of the three yellowhammer territories was located within the proposed development site.

5.3.7 Overall Evaluation of the Context, Character, Significance and Sensitivity of the Proposed Development Site

As seen in Figure 5.6, the proposed development site is primarily the Fossitt (2000) habitat BC1 (Arable crops). No habitats of National or international conservation significance were noted within the site outline. However, there are watercourses on site and the riparian vegetation including the hedgerow and woodland proximate to the watercourses would be seen as being locally important for biodiversity.

5.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The Proposed Development, for which a seven year permission is sought, comprises a Strategic Housing Development of 344 no. residential units (comprising 54 no. 1 beds, 30 no. 2 beds, 210 no. 3 beds and 50 no. 4 beds), a childcare facility with a GFA of c. 369 sq.m, public and communal open space, landscaping, car and cycle parking spaces, provision of an access road from Dublin Road and Shinkeen Road, associated vehicular

accesses, internal roads, pedestrian and cycle paths, bin storage, ESB substations, pumping station and all associated site and infrastructural works.

Please refer to Chapter 2 of the EIAR for a detailed description of the Proposed Development.

5.5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

This section of the EIAR examines the potential causes of impact that could result in likely significant effects to the species and habitats that occur within the ZOI of the combined site. These impacts could arise during either the construction or operational phases of the proposed development. The following terms are derived from EPA EIAR Guidance and are used in the assessment to describe the predicted and potential residual impacts on the ecology by the construction and operation of the proposed development.

Table 5.6: Impact description terminology (EPA,2022)

Magnitude of effect (change)	Typical description	
High	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Medium	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Low	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial effect on attribute or a reduced risk of negative effect occurring
Negligible	Adverse	Very minor loss or alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.

Table 5.7 Criteria for Establishing Receptor Sensitivity/Importance

Importance	Ecological Valuation
International	Sites, habitats or species protected under international legislation e.g. Habitats and Species Directive. These include, amongst others: SACs, SPAs, Ramsar sites, Biosphere Reserves, including sites proposed for designation, plus undesignated sites that support populations of internationally important species.
National	Sites, habitats or species protected under national legislation e.g. Wildlife Act 1976 and amendments. Sites include designated and proposed NHAs, Statutory Nature Reserves, National Parks, plus areas supporting resident or regularly occurring populations of species of national importance (e.g. 1% national population) protected under the Wildlife Acts, and rare (Red Data List) species.
Regional	Sites, habitats or species which may have regional importance, but which are not protected under legislation (although Local Plans may specifically identify them) e.g. viable areas or populations of Regional Biodiversity Action Plan habitats or species.
Local/County	Areas supporting resident or regularly occurring populations of protected and red data listed-species of county importance (e.g. 1% of county population), Areas containing Annex I habitats not of international/national importance, County important populations of species or habitats identified in county plans, Areas of special amenity or subject to tree protection

Importance	Ecological Valuation
	constraints.
Local	Areas supporting resident or regularly occurring populations of protected and red data listed-species of local importance (e.g. 1% of local population), Undesignated sites or features which enhance or enrich the local area, sites containing viable area or populations of local Biodiversity Plan habitats or species, local Red Data List species etc.
Site	Very low importance and rarity. Ecological feature of no significant value beyond the site boundary

Table 5.8 Quality of Effects

Quality of Effects	Effect Description
Negative /Adverse Effect	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).
Neutral Effect	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Positive Effect	A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).

Table 5.9 Significance of Effects

Significance of Effect	Description of Potential Effect
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.

Table 5.10 Significance of Effects

Duration and Frequency of Effect	Description
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting less than a year
Short-term	Effects lasting one to seven years.
Medium-term	Effects lasting seven to fifteen years.
Long-term	Effects lasting fifteen to sixty years.
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration

Table 5.11 Describing the Probability of Effects

Describing the Probability of Effects	Description
Likely Effects	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

Prior to the implementation of mitigation measures the proposed development of the site has the potential to impact on biodiversity during both the construction and operational phases of the project. The proposed development will involve the removal of the existing terrestrial habitats on site, re-profiling, excavations and the construction of roads, watercourse crossings, footpaths, and associated services including landscaping works and fowl, surface water, and water supply services.

5.5.1 Construction Impacts

The construction of the proposed development would potentially impact on the existing ecology of the site and the surrounding area. These potential construction impacts would include impacts that may arise during the site clearance, re-profiling of the site and the building phases of the proposed development. Potential construction impacts on habitats and species within the combined site are outlined in Table 5.12a and Table 5.12b. Construction phase mitigation measures are required on site particularly as significant reprofiling of the site is proposed which will remove all existing terrestrial habitats and can lead to silt laden and contaminated runoff.

Designated Conservation Sites

The proposed development is not located within a designated conservation site. Runoff during site works, re-profiling, and the construction of project elements could impact on the Hazelhatch and Shinkeen watercourses, with potential for downstream water quality impacts. The nearest conservation site along this network (Liffey Valley pNHA) is a minimum of 3.4 km from the proposed development site. However, given that the proposed development site is located upstream of the Leixlip Reservoir and Leixlip Hydro Station, significant mixing, dilution, and settlement will take place within the River Liffey. No significant impacts are foreseen in the absence of measures on site. The project must comply with Water Pollution Acts and prevent silt laden runoff leaving the site but these measures are not necessary for the protection of designated conservation sites.

The AA Screening concludes that *“The proposed works are approximately 500m upstream of the Leixlip Dam reservoir which consists of a 5000 acre lake and a Hydro Electric Power Station. Having taking into consideration the effluent discharge from the proposed development works, lack of direct hydrological pathway or biodiversity corridor link to conservation sites and the dilution effect with other effluent and surface runoff, in addition to the significant distance to Natura 2000 sites downstream (>19.5km), it is concluded that this development that would not give rise to any significant effects to designated sites.”*

5.5.2 Operational Impacts

Once constructed all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS. It would be expected that the ecological impacts in the long term would be minor adverse as the majority of the site will be built land. However, consultation has taken place with the landscape architect and Altamar and biodiversity elements have been incorporated into the design including a strong and sensitive landscaped riparian buffer including the retention of hedgerows where possible. The riparian buffer meets and exceeds where possible the minimum 10m from the top of the bank of the watercourses which complies with Inland Fisheries Ireland requirements. It also meets KCC requirements (GI 20 and GIO 1.6) requirements. Potential operational impacts on habitats and species are outlined in Table 5.8a and Table 5.8b.

Designated Conservation sites

The development must comply with SDCC drainage requirements and the Water Pollution Acts. Measures will be in place to prevent downstream impacts but these measures are not necessary for the protection of European sites. No significant impacts on designated sites are likely during operation.

5.6 INDIRECT IMPACTS

Appropriate measures will be taken to prevent the movement of silt laden surface water run-off and dust into adjacent habitats, and in particular the surface water network and watercourses. Mitigation measures need to be in place including silt fencing, a wheelwash and roads sweeping to ensure silt does not enter the drainage and watercourse networks from construction activities, particularly during enabling works. These measures are outlined in section 5.8.

Table 5.12a: Construction Impacts on habitats

Habitat	Fossitt	Habitats Directive	Rating	Construction Impact	Impact Significance
Arable Crops	BC1		D	Construction will result in the complete removal of this habitat within the site.	Low Adverse/Site/Negative/Not Significant/Long term/permanent
Dry meadows and grassy verges/Scrub	GS2/WS1		D	Construction will initially result in the partial removal of this habitat. It is likely that this habitat will be extended proximate to the main watercourse due to the extension of the riparian buffer.	Low Adverse/Site/Negative/Not Significant/Long term/permanent.
Scrub	WS1		E	This habitat is of low biodiversity importance and will be removed.	Low Adverse/Site/Negative/Not Significant/Long term/permanent.
Hedgerows	WL1		C	No species of importance were noted on, or in, the hedgerows. The removal of this habitat will not result in the loss of species of importance but will potentially result in foraging and nesting resource for birds..	Low Adverse/Local/Negative/Not Significant/Long term/permanent
Depositing lowland rivers	FW2		C	Surface water runoff and watercourse crossings have the potential for downstream effects on the streams. and pond between the site and the Irish stream. However, amphibians were not noted but may be present in the downstream pond and Himalayan balsam was noted on site and has the potential for further distribution. Mitigation is required to prevent downstream impacts and prevent the spread of invasive species.	Low Adverse/Local/Negative/Not Significant/short term.

Table 5.12b: Construction Impacts on species of the combined site

Species	Rating	Construction Impact	Impact Significance
Mammal-Bats	A	As bats are not roosting on site, no specific mitigation measures are required and a derogation licence is also not required for the demolition or felling of trees. Light spill during construction has the potential to impact on foraging. Foraging was noted on site. Mitigation is required .	Low Adverse/Site/Negative/Not Significant/Long term/short term
Mammals-Terrestrial	A-D	No terrestrial mammals of conservation importance were noted on site. No badger activity or setts were noted. However mitigation is required in the form of a pre construction mammal survey.	Neutral/Not significant/long term/likely
Birds	A-D	Clearance, reprofiling and construction of the site will result in the loss of nesting and foraging habitat in addition to foraging habitat for birds of conservation importance. However, it should be noted that the majority of hedgerows and the riparian corridor will be retained and enhanced. Construction activities will create disturbance on site. The yellowhammer territory within the site will be retained. However, increased disturbance within the site and fragmentation of this territory from the arable land may result in the effective loss if this breeding territory.	Medium Adverse/Site/Negative/Not Significant/Long term/short term.
Amphibians-Frogs	B	No evidence of frog activity was not noted on site, but frogs may be present. Mitigation is required.	Low Adverse/Local/Negative/Not Significant//short term
Terrestrial	A-D	2The majority of existing flora will be removed but the riparian corridor will be retained. No species	Neutral/Not significant/long

Species	Rating	Construction Impact	Impact Significance
Flora		of conservation importance were noted on site. Himalayan balsam was noted and mitigation is required.	term/likely

Table 5.13a: Operational Impacts on habitats of the combined site

Habitat	Fossitt	Habitats Directive	Rating	Construction Impact	Impact Significance
Arable Crops	BC1		E	Construction will result in the complete removal of this habitat.	Low Adverse/Site/Negative/Not Significant/Long term/permanent.
Dry meadows and grassy verges/Scrub	GS2/WS1		D	Construction will not result in the complete removal of this habitat. This area will be extended in the new enlarged riparian buffer.	Low Beneficial/Site/Positive/Not Significant/Long term/permanent.
Hedgerows	WL1		C	Construction will result in the partial removal of this habitat.	Low Adverse/Site/Negative/Not Significant/Long term/permanent
Depositing lowland rivers	FW2		C	The wider and landscaped riparian buffer will have a positive impact on the riparian corridor.	Low Beneficial/Site/Positive/Not Significant/Long term/permanent.

Table 5.13b: Operational Impacts on species of the combined site

Species	Rating	Construction Impact	Impact Significance
Mammal-Bats	A	As bats are not roosting on site, no specific mitigation measures are required and a derogation licence is also not required. Light spill during operation has the potential to impact on foraging. Mitigation is required.	Low Adverse/Site/Negative/Not Significant//short term
Mammals-Terrestrial	A-D	No terrestrial mammals of conservation importance were noted on site. No badger activity or setts were noted.	Neutral/Not significant/long term/likely
Birds	A-D	It is likely that the proposed development will increase human and vehicular disturbance on the application site. As landscaping matures the value of the site would improve. would	Low Adverse/Site/Negative/Not Significant//short term
Amphibians-Frogs	B	No evidence of frog activity was noted on site. And a wider riparian buffer will be in place.	Neutral/Not significant/long term/likely
Terrestrial Flora	A-D	The majority of existing flora will be removed. It would be expected that the biodiversity value would improve once landscaping elements have been completed.	Neutral/Not significant/long term/likely

5.7 'DO NOTHING' IMPACT

If the Proposed Development were not to go ahead, the Site would likely continue to be utilised as an agricultural arable field. Vegetation cover would continue to be transient across the majority of the land, with pioneer weed species establishing in between periods of cultivation. Were agricultural practises to cease, the land would become gradually more overgrown, with scrub cover increasing as it encroaches from the margins of the Site.

5.8 AVOIDANCE, REMEDIAL AND MITIGATION MEASURES & MONITORING

Construction and operational controls will be incorporated into the proposed development project to minimise the potential negative impacts on the ecology within the Zone of Influence (Zol). Measures outlined in the Preliminary Construction Management Plan, Water, Air & Soils chapters will be carried out. In addition, specific additional biodiversity measures will be carried out.

5.8.1 Construction Phase

The following mitigation measures are recommended:

BIO CONST 1: Bird Mitigation

Site Clearance

Site clearance has the potential to impact on birds particularly when carried out during bird nesting season. This could potentially result in the destruction and/or disturbance to nests leading to injury/death or an increase in predation risk to birds. The following mitigation will be carried out in relation to birds:

- Ecology Supervision will be carried out on site by a qualified ecologist to ensure that site clearance does not significantly impact on bird species. This would include the protection of the kingfisher habitat and prey within the watercourse from silt and petrochemicals.
- No clearance works will be carried out outside the redline or in tree protection zones.
- "Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) Should this not be possible, a pre-works check by a qualified ecologist should be undertaken to ensure nesting birds are absent. If nesting birds are present a derogation licence will be sought from NPWS. If this is not forthcoming works to remove the nesting habitats will not commence within bird nesting season.
- An ecologist will be on site during site clearance to minimise impact on foraging/roosting bird species. The ecologist will have the ability to cease works on site that could cause disturbance, in the event of significant disturbance impacts being possible
- 20 bird boxes will be placed on site to offset nesting loss.

BIO CONST 2: Bat Mitigation

Lighting

No roosts or potential roosts will be impacted. However, construction activities have the has the potential to impact on bats foraging particularly when lighting is note carried out sensitively during the construction phase. Lighting directed towards hedgerows and treelines can impact on foraging activity. The foraging areas for bats bordering the woodland and hedgerows need to be protected from light spill during construction and operation. The following mitigation will be carried out in relation to bats:

- Ecology Supervision will be carried out on site by a qualified ecologist. All lighting proposals for the construction phase will be discussed with the ecologist and there will be no direct lighting of treelines and hedgerows, with all lighting to face inwards within the site.

BIO CONST 3: Terrestrial Mammal Mitigation

Resting and breeding places in addition to ensuring connectivity.

There is potential for mammals of conservation importance to enter the site and establish resting and breeding places between the original survey and the commencement of works. The construction of water crossings can lead to the fragmentation of mammal territories The following mitigation will be carried out in relation to terrestrial mammals:

- A preconstruction mammal inspection will be carried out.
- Mammal passes will be placed within culverts/bridges any stream crossings.

BIO CONST 4: Aquatic Biodiversity Mitigation

Instream works

Given that there are two watercourses within the proposed development site and works are proposed in the vicinity of the watercourses, including crossings, there is potential for localised and downstream impacts on aquatic biodiversity. The following mitigation will be carried out in relation to aquatic biodiversity:

- Inland Fisheries Ireland will be provided with an up to date CEMP and methodology statement prior to construction works commencing on site. This will include detailed methodologies for the watercourse crossings on site which are to include non-wooden mammal passes.
- Ecological supervision of all instream or riparian works will be carried out by an aquatic ecologist with previous Ecological Clerk of Works experience in riparian works including watercourse crossings.
- Silt fencing will be placed at key work locations in the vicinity of the watercourse subject to approval of the aquatic ecologist.

BIO CONST 5: Retention and Protection of Vegetation during Construction

The tree constraints plan will be followed and vegetation retained where outlined. This includes trees, hedgerows and the woodland areas. In addition, the following mitigation will be carried out:

- Temporary fencing will be erected (as outlined in the arborist report) to include the Root Protection Area (RPA) of the trees.
- A qualified arborist shall oversee the implementation of tree protection and site clearance on site.

5.8.2 Operational Phase

The following mitigation measures are recommended:

BIO OPER 1: Bats

Lighting

The proposed development in the long term could potentially impact on bat foraging in the local area. The following mitigation will be carried out in relation to bats:

- No lights should be directed towards the hedgerows or woodland and during operation a post construction assessment will be carried to ensure compliance with Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers and that light levels at the edge of the treeline are not >1 lux.
- A post construction light assessment and bat surveys will be carried out.

5.9 ADVERSE EFFECTS LIKELY TO OCCUR FROM THE PROJECT (POST MITIGATION)

It should be noted that the early implementation of ecological supervision on site at initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation.

With the successful implementation of outlined mitigation measures to limit surface water impacts and biodiversity mitigation/supervision, no significant impacts are foreseen from the construction or operation of the proposed project. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works.

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on terrestrial biodiversity and designated conservation sites through the application of the standard construction and operational phase controls as outlined above. In particular, mitigation measures to ensure compliance with Water Pollution Acts will satisfactorily address the potential

impacts on downstream biodiversity. In relation to the compliance with bat lighting guidance¹ in the vicinity of the western woodland and riparian corridor will be important. Light levels will not be greater than 1 lux in these areas where possible. The project team has developed a strategy which has resulted in the majority of the hedgerow, woodland and riparian habitats being retained on site. The yellowhammer territory within the site is to be retained. However, increased disturbance within the site and fragmentation of this territory from the arable land may result in the effective loss if this breeding territory.

In relation to downstream impacts it is essential that the measures outlined in the EIAR are complied with, to ensure that the proposed development does not have “downstream” environmental impacts. These measures are to protect the groundwater/surface water, which are potentially the primary vectors of impacts from the site. However, these measures are not necessary for the protection of Natura 2000 sites.

5.10 CUMULATIVE IMPACTS ARISING FROM OTHER DEVELOPMENTS

There are several developments that received planning permission located in the area immediately surrounding the subject site. The following is a list of planning applications as identified on the Department of Housing, Local Government and Heritage’s ‘National Planning Application Map’ portal: These applications and those in the in Appendix 2.1 of Chapter 2 have been reviewed.

Table 5.14: In-combination effects evaluated (developments surrounding the subject site)

Planning Ref.	Address	Proposal
2179	Barnhall Road,,Leixlip,, Co. Kildare.	The change of use of the existing and permitted (Reg. Ref.: 95/923) Ancillary Production Support Office associated with part of Building No. 2 to a standalone independent Office use including break room and tea station (c. 1,139sqm). The proposed development specifically relates to Building No. 2 located to the north-east of the centre of the site. (No alteration to the balance of the development is sought by this Application.) The site is principally bounded by: Barnhall Road to the north; Celbridge Road to the east; Barnhall Rugby Football Club to the south; and by grounds associated with Castletown House to the west. At a site of c.80.56 hectares at Liffey Business Campus (formerly known as the Hewlett Packard Campus)
20873	Barnhall Road,, Leixlip,, Co. Kildare, W23 X93P	the construction of a logistics warehouse with ancillary office accommodation (total c. 25,268 sqm) to an overall height of 14.86 metres. The warehouse element of the development is principally single storey including an ancillary mezzanine level (554 sqm). The ancillary offices, comprising c. 1,737 sqm, are provided over three storeys and include toilets, change rooms, showers, cafeteria, gym, plant areas and circulation spaces. The proposed development will also include: the provision of a new vehicular access from Barnhall Road roundabout with ancillary associated entry/exit gates, access road and footpath; 179 no. surface car parking spaces including electric vehicle charging stations and 18 no. bicycle parking; solar pv panels on the warehouse roof; hard and soft landscaping; signage; sprinkler storage tanks and pump house; an electrical substation (c. 54 sqm); and all ancillary works including boundary treatments, street lighting, site excavation and development works above and below ground. The site is principally bounded by: Liffey Business Campus to the north;

¹ Bats & Lighting Guidance Notes for:Planners, engineers, architects and developers (2010)
https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf

Planning Ref.	Address	Proposal
		Barnhall Road to the east; Barnhall Rugby Football Club to the south; and by grounds associated with Castletown House to the west. At this site of c. 8.19 hectares at Liffey Business Campus (formerly known as the Hewlett Packard Campus)
20232	Site 1, Wolstan's Court,, Link Road, Celbridge,, Co. Kildare.	a new two storey, part single storey, 4 bed dwelling with connection to existing site services and all associated site works
191068	Rye River Brewing Co., Donaghcumper, Dublin Road, Celbridge, Co. Kildare, W23 AX07	change of use of part of the ground floor of existing Light Industrial Building from existing office & associated use to new commercial use for the storage, sorting, preparation/assembly, and distribution of flowers & flower arrangements (both for off site distribution and on line sales), for new retail sales area, & to include alterations to front façade with new entrance doors, over head canopy/awning and new high level façade signage, and for minor alterations to existing car parking to front, and other minor internal & external associated works
16927	Ashbrook, Dublin Road, Celbridge, Co. Kildare	two 2 storey 4 bed detached houses and one 2 bed detached dormer bungalow, 3 new site entrances and all associated site works. Revised by Significant Further Information which consists of revision to site entrances / access onto the Dublin Road

In relation to Planning Ref. **20873**, an Appropriate Assessment (AA) Screening was prepared by Environmental Resources Management Ireland Limited to accompany this planning application. This report concludes with the following:

'The Rye Water Valley/Carton SAC, initially screened in for assessment of likely significant effects, at its closest point, is located approximately 1.3 km north east of the Proposed Development. The Petrifying springs and sensitive habitats (marsh vegetation) associated with Narrow-mouthed Whorl Snail and Desmoulin's Whorl Snail are located approximately 1.8km further upstream of the Rye Water. Considering the limited range (c. 3m) of the QI species and their habitat according to Moorkens and Killen (2011) and there being no direct connectivity between the Proposed Development and the sensitive habitats or the petrifying springs, there are no likely significant effects on the European site from the Proposed Development.

There is no possibility for the Proposed Development, either alone or in-combination with other plans or projects to result in likely significant effects of European sites considered in this assessment. In accordance with Article 6(3) of the Habitats Directive, an AA is therefore not required.'

Based on a review of the planning application viewer there are no committed developments in proximity to the subject site which are likely to give rise to cumulative impacts with it. In addition, the development of the combined site, which consist primarily of agricultural fields, would not be seen to have a significant cumulative impact on biodiversity. Given this, it is considered that in combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. No significant cumulative effects are foreseen on biodiversity from cumulative impacts.

5.11 RESIDUAL IMPACTS CONCLUSION

Significant measures have been included within the design of the proposed project to limit and enhance biodiversity on site. This includes a biodiversity enhancing landscape strategy and sensitive lighting plan for the site and in particular the watercourses on site. The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on the sensitive receptors through the application of construction and operational phase controls. The overall impact on the ecology of the proposed

development will result in a slight adverse / not significant impact on the ecology of the area and locality overall. This is primarily as a result of the retention and enhancement of key habitats, loss of terrestrial habitats of poor biodiversity importance on site, supported by the creation of additional biodiversity features, standard construction and operational controls and a sensitive native landscaping strategy. It is considered that in combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised.

5.12 MONITORING

No specific monitoring is required beyond the measures outlined above.

5.13 INTERACTIONS

There are interactions between this Biodiversity Chapter and those of Water (chapter 8), Land and Soils (Chapter 7) and Landscape and Visual (chapter 6).

In terms of Land and Soils, there is overlap with the biodiversity chapter in that the potential impacts of the construction works through excavation, construction etc., which have the potential to adversely affect the receiving environment; both geological and ecological. The mitigation measures in both chapters overlap somewhat as they deal with protecting the receiving environment from the construction works e.g., protecting waterbodies from pollution, dust and sedimentation.

In addition, there is also overlap with the Water Chapter as works are proposed to cross the watercourses on site and it is proposed to discharge to the surface water to watercourses. As a result, potential impacts to the ecological receptors within and downstream of the Site are considered. Again, the potential for the Construction Phase to impact on receiving waterbodies and ecology within and in the vicinity of the Site are addressed via the mitigation measures proposed in these chapters.

In terms of Landscape and Visual, the proposed landscaping of the Site interacts with its biodiversity and ecology; through the changes that will occur to the existing habitats and flora at the Site. The landscaping proposals will entail losses and contributions in terms of vegetation at the Site, which in turn will affect the ecology of the Site. The Site in its current condition is not of high ecological value, and the proposed landscaping will not result in significant adverse effects in this regard.

5.14 DIFFICULTIES ENCOUNTERED IN COMPILING

No difficulties were encountered in compiling the Biodiversity Chapter.

5.15 REFERENCES

1. Environmental Protection Agency (2022): Guidelines on the information to be contained in Environmental Impact Assessment Reports. EPA, Wexford
2. CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater and Coastal. Chartered Institute of Ecology and Environmental Management.
3. DoEHLG (2013) Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment. Department of the Environment, Community and Local Government.
4. Environmental Protection Agency 2002 Guidelines on the information to be contained in Environmental Impact Statements. EPA, Wexford, Ireland.
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APPENDIX 5.1: BAT FAUNA IMPACT ASSESSMENT FOR A PROPOSED STRATEGIC HOUSING DEVELOPMENT (SHD) AT BALLYOULSTER, CELBRIDGE, CO. KILDARE



12th June 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: On behalf of: Kieran Curtin, Receiver over certain assets of Maplewood Developments Unlimited Company (in liquidation and in receivership).

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Directors: Bryan Deegan and Sara Corcoran
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Document Control Sheet			
Client	On behalf of: Kieran Curtin, Receiver over certain assets of Maplewood Developments Unlimited Company (in liquidation and in receivership).		
Project	Bat fauna impact assessment for a proposed Strategic Housing Development (SHD) at Ballyoulster, Celbridge, Co. Kildare.		
Report	Bat Fauna Assessment		
Date	12 th June 2022		
Version	Author	Reviewed	Date
Draft 01	Bryan Deegan	Jack Doyle	01 st June 2022
Planning	Bryan Deegan		12 th June 2022

SUMMARY

Structure:	None. The subject site is a greenfield site.
Location:	Ballyoulster, Celbridge, Co. Kildare.
Bat species present:	None Roosting on site. Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) and Leisler's bat (<i>Nyctalus leisleri</i>) were noted foraging <i>on site</i>
Proposed work:	Proposed Strategic Housing Development (SHD).
Impact on bats:	Mitigation measures are outlined and include compliance with Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers and that light levels at the edge of the treeline are not >1 lux. A post construction light assessment and bat surveys will be carried out. No significant impacts based on successful implementation of mitigation.
Survey by:	Bryan Deegan MCIEEM
Survey date:	2 nd September 2021

INTRODUCTION

Development Description

Kieran Curtin, Receiver over certain assets of Maplewood Developments Unlimited Company (in liquidation and in receivership), intends to apply for a seven year planning permission for a Strategic Housing Development at lands at Dublin Road and the Shinkeen Road, within the townlands of Donaghcumper and Ballyoulster, Celbridge, Co. Kildare. The application site has an area of c. 13.4 ha and bound by a greenfield site, Donaghcumper Cemetery, Retronix Semiconductor company and the Dublin Road to the north, the Rye River Brewing Company and the Ballyoulster Park housing estate to the north east, the Primrose Gate housing estate to the south, agricultural lands to the east and Shinkeen Road to the west. Donaghcumper Medieval Church Ruins (RPS No. B11-02) and the house on Dublin Road, Donaghcumper (RPS No. B11-26), are protected structures located north of the application site

The proposed development comprises a Strategic Housing Development of 344 no. residential units (comprising 54 no. 1 beds, 30 no. 2 beds, 210 no. 3 beds and 50 no. 4 beds), a 2 no. storey childcare facility with a GFA of c. 369 sq.m, public and communal open space, landscaping, car and cycle parking spaces, provision of an access road from Dublin Road and Shinkeen Road, associated vehicular accesses, internal roads, pedestrian and cycle paths, bin storage, cycle storage, pumping station and all associated site and infrastructural works.

The residential component of the development consists 214 no. apartments / duplex units, and 130 no. houses of to be provided as follows:

- 4 no. 3 bed two storey detached houses;
- 28 no. 3 bed two storey semi-detached houses;
- 48 no. 3 bed two storey terraced houses;
- 50 no. 4 bed three storey semi-detached houses;
- 214 no. duplex apartments / apartments (54 no. 1 beds, 30 no. 2 beds, and 130 no. 3 beds) in a series of 15 no. duplex apartment / apartment blocks of 3 no. storeys in height, and all duplex apartments / apartments are provided with a terrace / balcony or private garden;

The development includes a total of 585 no. car parking spaces, 4 no. loading bays and a total of 770 no. cycle spaces. The proposal includes hard and soft landscaping, lighting, boundary treatments, the provision of public and communal open space, including 3 no. Local Parks, children's play areas, and an ancillary play area for the childcare facility.

The proposed development includes road upgrades, alterations and improvements to the Dublin Road / R403 and the Shinkeen Road, including the provision of new vehicular accesses and signalised junctions, pedestrian crossing points, and associated works to facilitate the same. The proposal includes internal roads, including 3 no. bridge crossings, cycle paths, footpaths, with proposed infrastructure and access points provided up to the application site boundary to facilitate potential future connections to adjoining lands.

The development includes foul and surface water drainage, pumping station, 3 no. ESB Substations, services and all associated and ancillary site works and development. The proposed site outline and location are demonstrated in Figure 1.

Competency of Assessor

This report has been prepared by Bryan Deegan MSc, BSc (MCIEEM). Bryan has over 26 years of experience providing ecological consultancy services in Ireland. He has extensive experience in carrying out a wide range of bat surveys including dusk emergence, dawn re-entry and static detector surveys. He also has extensive experience reducing the potential impact of projects that involve external lighting on Bats. Bryan trained with Conor Kelleher author of the Bat Mitigation Guidelines for Ireland (V2)(Kelleher and Marnell (2022)) and Bryan is currently providing bat ecology (impact assessment and enhancement) services to Dun Laoghaire Rathdown County Council primarily on the Shanganagh Park Masterplan. The desk and field surveys were carried out

having regard to the guidance: Bat Surveys for Professional Ecologists – Good Practice Guidelines 3rd Edition (Collins, J. (Ed.) 2016) and Kelleher and Marnell (2022), Bat Mitigation Guidelines for Ireland V2.

Legislative Context

Wildlife (Amendment) Act 2000.

Bats in Ireland are protected by the Wildlife (Amendment) Act 2000. Based on this legislation it is an offence to wilfully interfere with or destroy the breeding or resting place of any species of bat. Under this legislation it is an offence to “*Intentionally kill, injure or take a bat, possess or control any live or dead specimen or anything derived from a bat, wilfully interfere with any structure or place used for breeding or resting by a bat, wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose.*”

Habitats Directive- Council Directive 92/43/EEC 1992 on the conservation of natural habitats and of wild fauna and flora transposed into Irish Law i.e. European Communities (Natural Habitats) Regulations, 1997 (SI No. 64/1997). Annex II of the Council Directive 92/43/EEC 1992 on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) lists animal and plant species of Community interest, the conservation of which requires the designation of Special Areas of Conservation (SACs); Annex IV lists animal and plant species of Community interest in need of strict protection. All bat species in Ireland are listed on Annex IV of the Directive, while the Lesser Horseshoe Bat (*Rhinolophus hipposideros*) is protected under Annex II which related to the designation of Special Areas of Conservation for a species.

Under section 23 of SI No. 64/1997 all bats are listed under the first schedule of Section 23 which makes it an offence to:

- deliberately capture a bat
- deliberately disturb a bat,
- damage or destroy a breeding site or resting place of a bat.

Landscape

A Landscape Strategy Report has been prepared by Bernard Seymour Landscape Architects to accompany this planning application. In relation to the proposed green infrastructure for the subject site, this report outlines the following:

‘To provide for the development of a new residential neighbourhood, a local park that integrates with its surroundings whilst having its own unique character and a strong sense of place. A permeable network of pedestrian and cycle friendly streets and spaces that incorporate existing site features such as the Shinkeen stream and existing mature trees will be required. The Shinkeen Stream should be incorporated into new developments as a landscape feature that includes a continuous pedestrian and cycle link along its bank. This green link should include natural landscaping that will enhance the ecological value of the stream. New residential areas should be structured around a variety of open spaces that provide for both active and passive recreation. Landscape proposals should provide for the retention of existing mature trees and the planting of new trees along the Ballyoulster/Loughlinstown townland boundary.’

*‘We have liaised with the IFI and been advised that they require a 10m riparian corridor to a stream of this scale and character. Footpaths and access can be allowed within this zone. An additional 10m setback has been provided from this riparian corridor to integrate greenlinks, cycle paths, public lighting and landscape thresholds in compliance with current IFI guidelines.’*The proposed landscape masterplan is demonstrated in Figure 2.

Preliminary Tree Survey and Report

A Tree Survey and Report was prepared by Arborist Associates Ltd. to accompany this planning application. The intention of the tree survey is to register, describe and evaluate the trees regarding their current health status and current condition within their current context. In this regard, a tree impact plan has been prepared, and is demonstrated in Figure 3.

Lighting

An Outdoor Lighting Report has been prepared by Waterman Moylan and Sabre Electrical Services Ltd. to accompany this planning application. The proposed public lighting layout is demonstrated in Figures 4 & 5. In relation to the lighting layout report for the proposed development the lighting was discussed and it should be noted that the footpaths that runs parallel to the watercourse has been pulled away from the watercourse to

ensure that the biodiversity in the vicinity of the watercourse is not significantly impacted by the development. This includes bat foraging activity. However, lighting will impact on the watercourse in the vicinity of bridge crossings (Figures 4 & 5). The lighting design for the Greenway and for the public lighting is based on best practice and more importantly National & International Industry Standards, incorporating the following:

- Bat Conservation Ireland (BCI) guidelines
 - The Institution of Lighting Professionals (ILP) and the Bat Conservation Trust Guidance note 08/18 - Bats and artificial lighting in the UK. Bats and the Built Environment series.

Luminaires

Luminaire A Data

Supplier	C II Phosco
Type	E560-28-P4A-727-C0650-17W
Lamp(s)	727M
Lamp Flux (klm)	2.26
File Name	E560-28-P4A-727-C0650-17W.xls
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	699.3, 183.1, 0.3
No. in Project	66

Luminaire B Data



Supplier	Ubis Schroder
Type	AXIA 2.2 5165 Integrated lenses Rear louve rs 48 0 SLO M SQUARE
Lamp(s)	48 0 SLO M SQUARE QIANT 300mA W/W 727 230V 00-36-648
Lamp Flux(klm)/Colour	6.80 W/W 2700K70
File Name	AXIA 2.2 5165 48 0 SLO M SQUARE QIANT 300mA W/W 727 42.5W 481132 Integrated ...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	843.7, 115.7, 0.0
No. in Project	25

Luminaire C Data



Supplier	Ubis Schroder
Type	AXIA 2.2 5167 Integrated lenses Rear louve rs 48 0 SLO M SQUARE
Lamp(s)	48 0 SLO M SQUARE QIANT 300mA W/W 727 230V 00-36-648
Lamp Flux(klm)/Colour	12.55 W/W 2700K70
File Name	AXIA 2.2 5167 48 0 SLO M SQUARE QIANT 300mA W/W 727 85W 481142 Integrated L...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	877.5, 121.4, 0.0
No. in Project	4

Luminaire D Data

Supplier	C II Phosco
Type	E560-28-P4A-727-C2508W
Lamp(s)	727M
Lamp Flux (klm)	0.96
File Name	E560-28-P4A-727-C02508W.xls
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	699.3, 183.1, 0.3
No. in Project	34

Luminaire E Data

Supplier	C II Phosco
Type	E560-28-F2A-727-C600-16W
Lamp(s)	727M
Lamp Flux (klm)	2.23
File Name	E560-28-F2A-727-C0600-16W.xls
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	623.6, 113.9, 0.3
No. in Project	5

Luminaire F Data

Supplier	C II Phosco
Type	E561-6+H1-0-727-4W5-0450-40W
Lamp(s)	727SS
Lamp Flux (klm)	5.78
File Name	E561-6+H1-0-727-4W5-0450-40W.xls
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	376.6, 84.9, 0.0
No. in Project	5

Luminaire G Data

Supplier	C II Phosco
Type	E561-6+H1-0-727-4W5-1025-90W
Lamp(s)	727SS
Lamp Flux (klm)	12.26
File Name	E561-6+H1-0-727-4W5-1025-90W.xls
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	376.6, 84.9, 0.0
No. in Project	4

Luminaire H Data

Supplier	C II Phosco
Type	E560-28-F2A-727-C600-16W
Lamp(s)	727M
Lamp Flux (klm)	2.23
File Name	E560-28-F2A-727-C0600-16W.xls
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	623.6, 113.9, 0.3
No. in Project	4

Luminaire I Data



Supplier	Ubis Schroder
Type	AXIA 2.1 5165 Integrated lenses Rear louve rs 16 0 SLO M SQUARE
Lamp(s)	16 0 SLO M SQUARE QIANT 300mA W/W 727 230V 00-36-648
Lamp Flux(klm)/Colour	2.27 W/W 2700K70
File Name	AXIA 2.1 5165 16 0 SLO M SQUARE QIANT 300mA W/W 727 15.5W 434262 Integrated ...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1250.5, 121.8, 2.3
No. in Project	31

Luminaire J Data



Supplier	Ubis Schroder
Type	AXIA 2.1 5165 Integrated lenses Rear louve rs 8 0 SLO M SQUARE
Lamp(s)	8 0 SLO M SQUARE QIANT 300mA W/W 727 230V 00-36-648
Lamp Flux(klm)/Colour	1.13 W/W 2700K70
File Name	AXIA 2.1 5165 8 0 SLO M SQUARE QIANT 300mA W/W 727 5W 434262 Integrated len...
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	1250.5, 121.8, 2.3
No. in Project	19

Bat survey

This report presents the results of site visits by Bryan Deegan (MCIEEM) on the evening and night of the 2nd /3rd September 2021 during which the proposed development site was searched for bat use or presence. A bat emergent and detector survey was also carried out.

Survey methodology

At dusk, a bat detector survey was carried out onsite using a *Echo Meter Touch 2 Pro bat* detector to determine bat activity. Bats were identified by their ultrasonic calls coupled with behavioural and flight observations.

Surveys were carried out having regard to the following guidelines:

- Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016);
- Bat Mitigation Guidelines for Ireland V2 (NPWS, 2022); and,
- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (NRA, 2006).

Survey constraints

The detector survey was undertaken during the active bat season in September. Weather conditions were good with mild temperatures of 15°C after sunset. Winds were light and there was no rainfall.

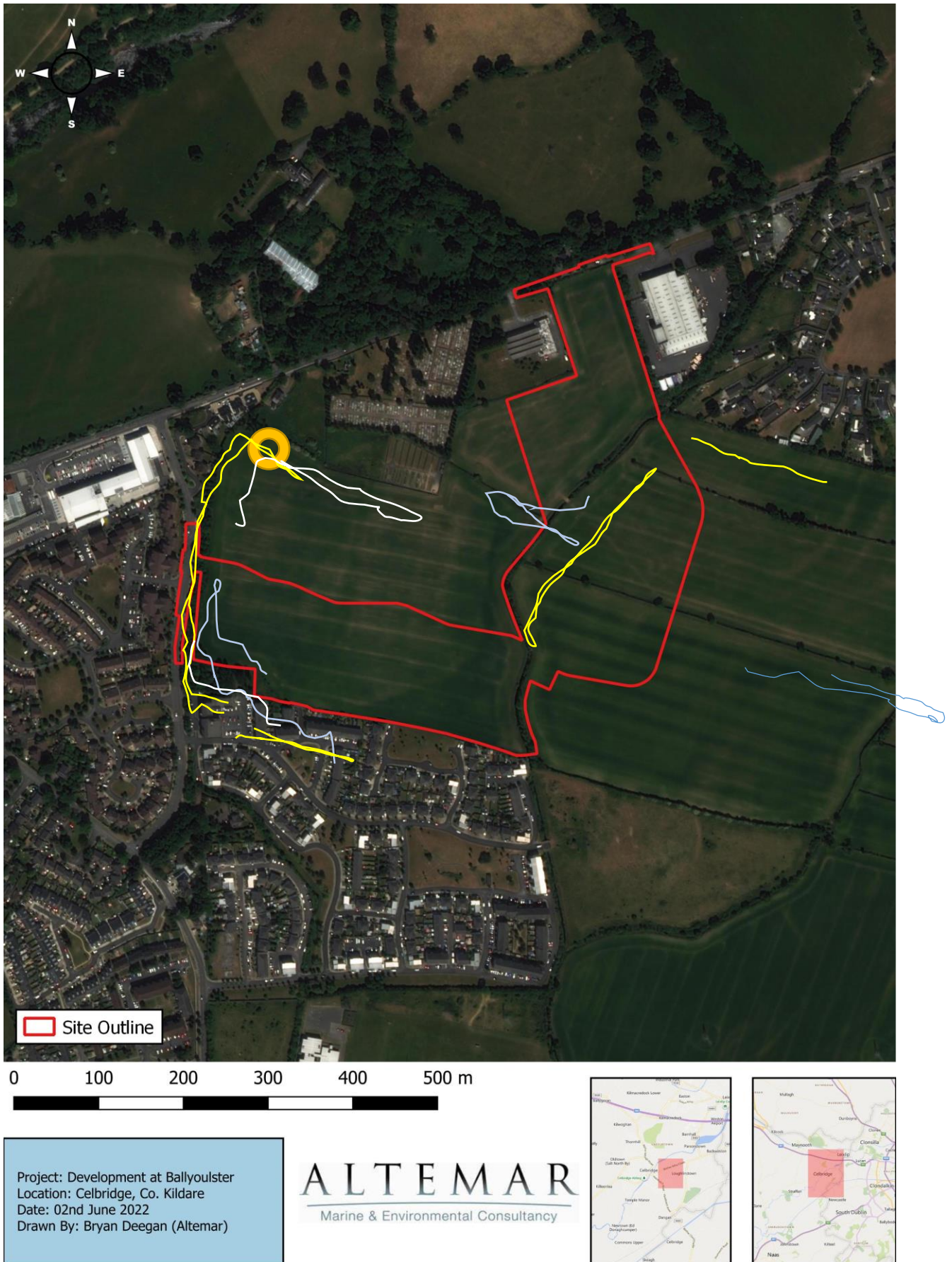


Figure 1: Site outline soprano pipistrelle (yellow), Leisler's bat (blue) bat roost in tree orange circle, common pipistrelle (White)

1.5 PLANTING STRATEGY - ECOLOGICAL CORRIDOR : Install the framework of Trees to facilitate the movement of population (Human, Mammal & Birds)

1. Existing MATURE TREES
2. Existing HEDGEROWS
3. Existing HEDGEROWS impacted by proposal
4. Shinkeen STREAM and 10meters protected RIPARIAN / STREAMSIDE
5. Extend of the HEDGEROWS in the 15-30m of the MIDDLE ZONE
6. Extend of the HEDGEROWS in the LOCAL PARK to form the structure of the FITNESS TRAIL and the COMMUNITY GARDENS
7. BOULEVARD TREES : High Development Trees for Main road and Pedestrian Link
8. PARK TREES : BIODIVERSITY and Higher Stratum above the Hedgerows.
9. RESIDENTIAL TREES : Coloured Foliage for STREETSCAPE
10. ORNAMENTAL PLANTING : Seasonal, Form and Colour Interest, the lower stratum of plantings, Multistem, Shrubs, Groundcovers and Meadow Grass form the last layer of the landscape proposal and will participate to the installation of the RECREATIONAL CORRDROR.



KDA-04B-BSLA-PlantingProposal

Figure 2: Landscape masterplan

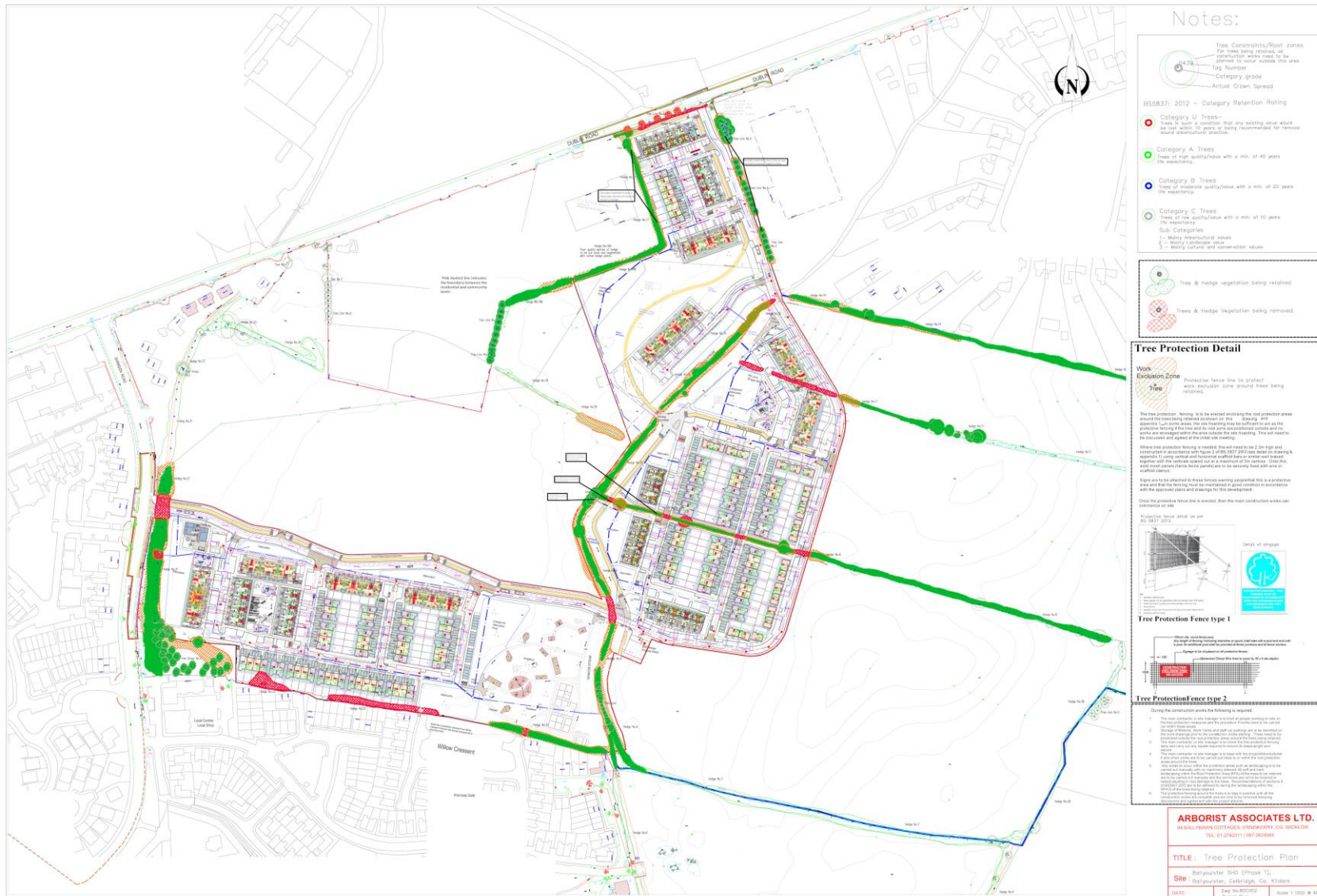


Figure 3: Tree constraints plan



Figure 4: Public lighting layout – sheet 1



Figure 5: Public lighting layout – sheet 2

Bat assessment findings

Review of local bat records

The review of existing bat records (sourced from Bat Conservation Ireland’s National Bat Records Database) within two 2km² grids (Reference nos. N93R & N93W) encompassing the study area reveals that six of the nine known Irish species have been observed locally (Table 1). The National Biodiversity Data Centre’s online viewer was consulted in order to determine whether there have been recorded bat sightings in the wider area. This is visually represented in Figures 6-8. The following species were noted in the wider area: Brown Long-eared Bat (*Plecotus auritus*), Natterer’s Bat (*Myotis nattereri*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Daubenton’s Bat (*Myotis daubentonii*), and Lesser Noctule (*Nyctalus leisleri*).

Table 1: Status of bat species within two 2km² grids encompassing the subject site (Reference Nos. N93R & N93W)

Species name	Record count	Date of last record	Note
Lesser Noctule (<i>Nyctalus leisleri</i>)	7	16/07/2008	National Bat Database of Ireland
Brown Long-eared Bat (<i>Plecotus auritus</i>)	1	16/07/2007	National Bat Database of Ireland
Daubenton’s Bat (<i>Myotis daubentonii</i>)	4	12/09/2007	National Bat Database of Ireland
Natterer’s Bat (<i>Myotis nattereri</i>)	4	12/09/2007	National Bat Database of Ireland
Pipistrelle (<i>Pipistrellus pipistrellus sensu lato</i>)	8	06/05/2014	National Bat Database of Ireland
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	4	12/09/2007	National Bat Database of Ireland



Figure 6: Brown Long-eared Bat (*Plecotus auritus*) (yellow), Daubenton’s Bat (*Myotis daubentonii*) (purple), and both Brown Long-eared Bat and Daubenton’s Bat (orange) (Source NBDC) (Site – red circle)



Figure 7: Natterer's Bat (*Myotis nattereri*) (purple), (Source NBDC) (Site – red circle)

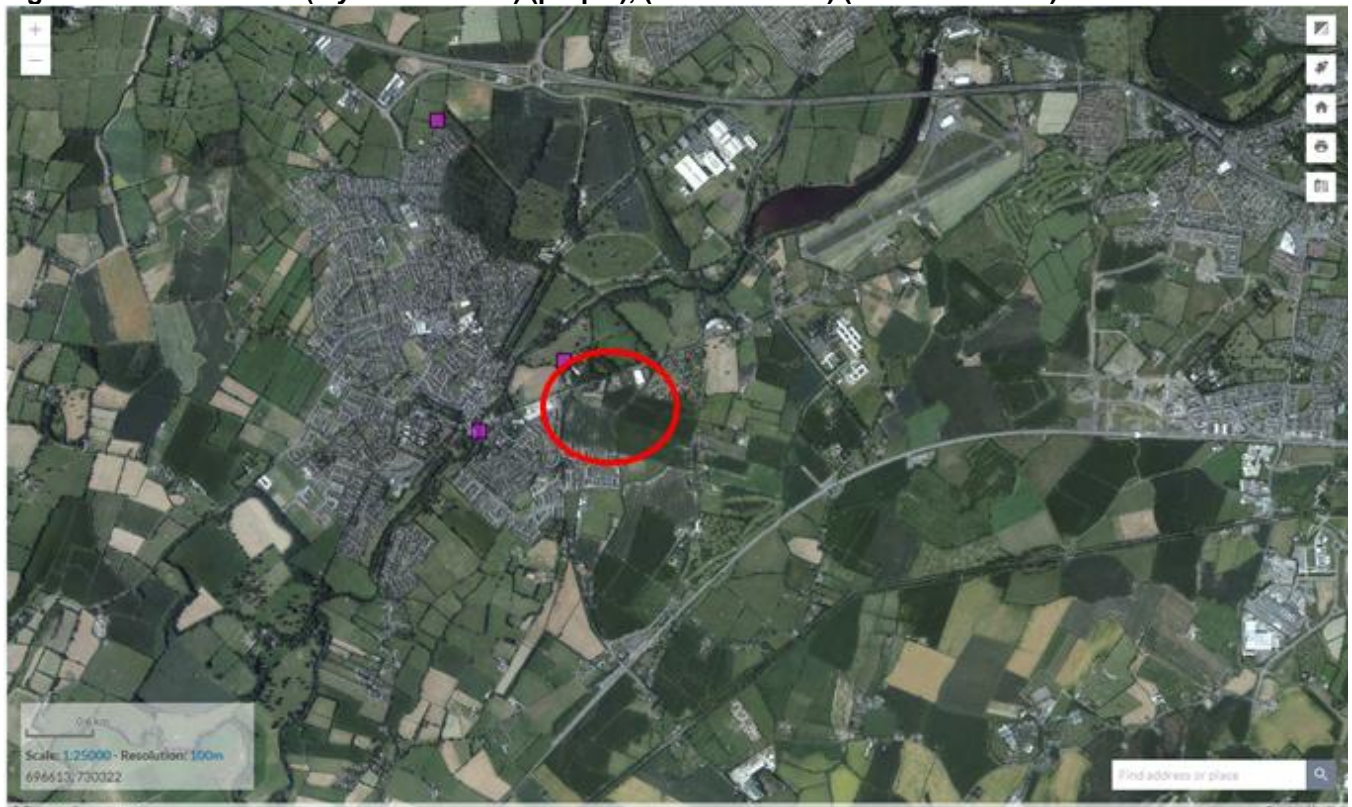


Figure 8: Soprano Pipistrelle (*Pipistrellus pygmaeus*) (purple), Lesser Noctule (*Nyctalus leisleri*) (yellow), and both Soprano Pipistrelle and Lesser Noctule (orange) (Source NBDC) (Site – red circle)

Specifically, NBDC records show sightings of bat species in locations that are in close proximity to the subject site:

1. Soprano Pipistrelle (*Pipistrellus pygmaeus*) in grid reference N979333. Recorded on 11/07/2007 and approximately 330m North of the subject site.
2. Lesser Noctule (*Nyctalus leisleri*) in grid reference N979333. Recorded on 11/07/2007 and approximately 330m North of the subject site.
3. Natterer's Bat (*Myotis nattereri*) in grid reference N979333. Recorded on 11/07/2007 and approximately 330m North of the subject site.
4. Brown Long-eared Bat (*Plecotus auritus*) in grid reference N979333. Recorded on 11/07/2007 and approximately 330m North of the subject site.
5. Soprano Pipistrelle (*Pipistrellus pygmaeus*) in grid reference N973328. Recorded on 12/09/2007 and approximately 490m West of the subject site.
6. Natterer's Bat (*Myotis nattereri*) in grid reference N973328. Recorded on 12/09/2007 and approximately 490m West of the subject site.
7. Daubenton's Bat (*Myotis daubentonii*) in grid reference N973328. Recorded on 12/09/2007 and approximately 490m West of the subject site.

Detector survey

Foraging activity on site was moderate on site with soprano pipistrelle, Leisler's bat and common pipistrelle bats all noted foraging along treelines and hedgerows on site (Figure 1).

Potential impacts of proposed redevelopment on bats

No roosts or bats emerging from the on-site trees were observed. However, a soprano pipistrelle was noted emerging from an ivy clad ash tree to the north west of the site (Figure 1). The trees on and adjacent to the site have no features that would act as potential roosting areas. As bats are not roosting on site, no specific mitigation measures are required and a derogation licence is also not required for the demolition or felling of trees. Light spill during construction and operation has the potential to impact on foraging. Foraging was noted on site. Mitigation is required in relation to lighting.

Mitigation measures

No roosts or potential roosts will be impacted. The foraging areas for bats bordering the woodland need to be protected from light spill during construction and operation. No lights should be directed towards the woodland and during operation a post construction assessment will be carried out to ensure compliance with Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers and that light levels at the edge of the treeline are not >1 lux. A post construction light assessment and bat surveys will be carried out.

Predicted and residual impact of the proposal

There is no evidence of a current bat roost on site, therefore no negative impacts on roosts these animals are expected to result from the proposed development. The proposed project has been designed to allow bat foraging activity to remain in key foraging areas, by keeping lighting and light spill away from these areas, with the exception of bridge crossings over the watercourse, where foraging activity may be reduced due to light spill. The likelihood of bat collision is not significant as the materials proposed for the apartment blocks are generally solid and would have good acoustic properties to reflect echolocation signals. As a result the buildings would be clearly visible to bat species. Landscaping features will improve the wider area for bat foraging as it will provide additional habitat complexity and foraging areas. The impact of the proposed development on bats will be neutral in the long term based on the successful implementation of mitigation.

Legal status and conservation issues – bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Acts (2000 and 2010). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat *Rhinolophus hipposideros* is further listed under Annex II. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat is further listed under Annex II. The current status and legal protection of the known bat species occurring in Ireland is given in the following table.

Common and scientific name	Wildlife Act 1976 & Wildlife (Amendment) Acts 2000/2010	Irish Red List status	Habitats Directive	Bern & Bonn Conventions
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Yes	Least Concern	Annex IV	Appendix II
Soprano pipistrelle <i>P. pygmaeus</i>	Yes	Least Concern	Annex IV	Appendix II
Nathusius pipistrelle <i>P. nathusii</i>	Yes	Not referenced	Annex IV	Appendix II
Leisler's bat <i>Nyctalus leisleri</i>	Yes	Near Threatened	Annex IV	Appendix II
Brown long-eared bat <i>Plecotus auritus</i>	Yes	Least Concern	Annex IV	Appendix II
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	Yes	Least Concern	Annex II Annex IV	Appendix II
Daubenton's bat <i>Myotis daubentonii</i>	Yes	Least Concern	Annex IV	Appendix II
Natterer's bat <i>M. nattereri</i>	Yes	Least Concern	Annex IV	Appendix II
Whiskered bat <i>M. mystacinus</i>	Yes	Least Concern	Annex IV	Appendix II
Brandt's bat <i>M. brandtii</i>	Yes	Data Deficient	Annex IV	Appendix II

Also, under existing legislation, the destruction, alteration or evacuation of a known bat roost is a notifiable action and a derogation licence has to be obtained from the *National Parks and Wildlife Service* before works can commence.

Furthermore, on 21st September 2011, the Irish Government published the European Communities (Birds and Natural Habitats) Regulations 2011 which include the protection of the Irish bat fauna and further outline derogation licensing requirements re: European Protected Species.

References

- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1982
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APPENDIX 5.2: WINTERING BIRD ASSESSMENT 2021-2022

Introduction

In the winter of 2021-2022, a total of 11 winter bird surveys were conducted at lands at Ballyoulster, East of Celbridge, County Kildare, by Hugh Delaney, a freelance ecologist (Birds primarily) with an experienced background in bird surveying on numerous sites with ecological consultancies over 10+ years. Hugh, a lifelong birder, is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

Winter Bird Survey Methodology

Winter bird surveys are conducted from soon after sunrise until late in the afternoon before sunset, the site is monitored throughout the day and all bird species utilizing the site recorded, including species flying through overhead. Checks are also made on suitable habitat nearby or adjacent the site for comparative purposes and to monitor any interchange of birds between sites. Target species (species of more special interest) utilizing the site will be mapped and estimates of the time these species frequented the site recorded.

Site Location



Figure 1. Survey Location (outlined in red) at Ballyoulster, County Kildare. The field marked (1) will be referred to as such in the notes as it differs quite markedly in habitat type from the rest of the site. Green marking marks the bridge over the stream that bisects the site.

Site Description

The site comprises almost entirely arable fields east of Celbridge Town (fallow for the much of the duration of the survey period, it then all ploughed over in early February). The fields are bordered largely by hedgerows, interspersed with some larger trees. Housing estates bordered the site to the east and north. The field marked (1) at the south of the site differed from the rest of the site, it was not arable, comprising rough ground with willow patches and patches of wet ground. The site was bisected in the middle by a stream running south to north, well vegetated especially on its east side, a small bridge at the north side allowed access across the site (location marked in green).

Specific site survey methodology

Site traversed from west to east repeatedly during the day following field margins around the site, going from north to south and then repeating this working south to north. Vantage point observations also made from bridge over the stream and from points at east and west sides of the site where optimal views across the site were apparent.

Survey results

October 30th, 2021

Sunrise- 08.20hrs/Sunset 17.56hrs. Weather – Wind F3 Southwest, Cloud 0/8, Dry, 12c, Excellent visibility. On-site 08.10hrs – 15.30hrs.

Species recorded – Herring Gull, Common Gull, Grey Heron, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Coal Tit, Linnet, Goldcrest, Redpoll, Greenfinch, Chaffinch, Yellowhammer, Reed Bunting, Blackbird, Mistle Thrush, Redwing, Pied Wagtail, Mallard, Magpie, Hooded Crow, Rook, Jackdaw, Cormorant, Sparrowhawk, Buzzard, Kestrel, Merlin, Raven, Snipe.

Observations from 08.10hrs – 12.00hrs –

A Buzzard was observed foraging on ground at northeast of the site at 08.30hrs, a Grey Heron was observed foraging on stream south of the bridge at 08.40hrs. Yellowhammer (<3) were noted foraging in the field north of the bridge at 08.45hrs. A Sparrowhawk was noted hunting at the east side of the site at 09.15hrs. Yellowhammer (<1), Chaffinch (<2) and Skylark (<1) were noted foraging the middle field at the east side of the site at 09.30hrs. A Mallard was observed foraging on the stream south of the bridge at 09.45hrs. Yellowhammer (<7) were noted foraging in stubble at along hedgerow west of the bridge at 10.00hrs. In the large field at west side of the site Linnet (<20), Mistle Thrush (<10), Starling (<15), Yellowhammer (<3), Meadow Pipit (<8), Skylark (<25) from 10.00-10.20hrs, with a Cormorant and Sparrowhawk observed passing over this area. At the field (1) at south side of the site Yellowhammer (<1), Reed Bunting (<1) and Meadow Pipit were observed foraging at 10.45hrs. Snipe (<3) were flushed from the middle of the south field at 10.55hrs. A Kestrel was noted chasing a Merlin at the west side of the south field at 10.50hrs.

Observations from 12.00hrs – 15.30hrs –

Yellowhammer (<5), Chaffinch (<3) and Goldcrest (<2) were observed foraging along hedgerow along stream south of the bridge at 12.20hrs. Two Raven passed south over the east side of the site at 12.42hrs. Two Skylark were noted foraging at the northeast of the site at 13.05hrs. House Sparrow (<15), Dunnock (<3), Robin (<2) and Great Tit (<2) were noted along hedgerows bordering the north of the site at 13.15hrs. Mallard (<2) were noted foraging on the stream north of the bridge at 13.40hrs. At the large field in the west of the site Linnet (<25), Yellowhammer (<3), Skylark (<4), Redwing (<2), Pied Wagtail (<1) and Blackbird (<3) were noted foraging from 13.45hrs-14.10hrs. A Buzzard was foraging in a field west of the bridge at 15.20hrs. Small numbers (<10 of each) of Herring Gull and Common Gull noted passing mainly over the west of the site during the day, not recorded foraging on-site. No other target species recorded.

November 8th, 2021

Sunrise- 07.37hrs/Sunset 16.15hrs. Weather – Wind F1 South, Cloud 8/8, Occasional showers, 10c, Excellent visibility. On-site 08.15hrs – 15.30hrs.

Species recorded – Herring Gull, Common Gull, Black-headed Gull, Grey Heron, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Long-tailed Tit, Linnet, Goldcrest, Redpoll, Greenfinch, Chaffinch, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Mistle Thrush, Redwing,

Song Thrush, Pied Wagtail, Mallard, Magpie, Hooded Crow, Rook, Jackdaw, Sparrowhawk, Buzzard, Raven, Snipe, Kingfisher.

Observations from 08.15hrs – 12.00hrs –

A Kingfisher was observed foraging on the stream north of the bridge from 08.40-08.50hrs. At the large field at the west side of the site Linnet (<40), Skylark (<6), Yellowhammer (<3), Redpoll (4) and Greenfinch (<1) were observed foraging in the stubble from 09.00-09.25hrs. A Grey Heron was observed foraging south of the bridge on the river at 09.50hrs with Mallard (<3) also in the same area. At the middle field in the east of the site Skylark (<5), Yellowhammer (<4), Chaffinch (<8) and Goldfinch (<10) were recorded foraging from 10.20-10.45hrs. Two Buzzards were noted foraging in the northeast corner of the site at 11.05hrs. Goldcrest (<2), Woodpigeon (<8), Reed Bunting (<1), House Sparrow (<5), Blue Tit (<4) and Redwing (<5) were noted foraging in the hedgerow and adjacent stubble field bordering the north side of the site from 11.00-11.30hrs. A Sparrowhawk was observed hunting in the south field (1) of the site at 11.55hrs. Also at the south field were Snipe (<4 flushed again from middle area), Yellowhammer (<4), Mistle Thrush (<2), Blackbird (<1) and Song Thrush (<2) also noted foraging in this area.

Observations from 12.00hrs – 15.30hrs –

In the northwest field of the site Yellowhammer (<3), Redpoll (<2), Dunnock (<2) and Goldfinch (<5) were observed foraging at 12.30hrs. Mallard (<2) were foraging north of the bridge at 12.40hrs. In the large field at the west of the site Linnet (<35), Skylark (<2), Redpoll (<2), Woodpigeon (<15) and Meadow Pipit (<6) were observed foraging from 13.05-13.40hrs. Snipe (<2) were also flushed from the south side of this field at 13.32hrs. In the middle field at the east side of the site Yellowhammer (<2) and Chaffinch (<12) were observed foraging at 14.05hrs. A Raven passed east over the east side at 14.10hrs. In the south field (1) Yellowhammer (<2), Reed Bunting (<2), Song Thrush (<1), Dunnock (<2), Robin (<1), Long-tailed tit (<6) and Wren (<2) were observed foraging from 14.30-14.45hrs. Small numbers of Gulls again noted passing over the site with most birds in the southwest area of site nearer Celbridge Town. Mainly Herring Gulls (<15) with smaller numbers of Black-headed and Common Gull, none recorded foraging on-site. No other targets recorded.

November 24th, 2021

Sunrise- 08.06hrs/Sunset 16.16hrs. Weather – Wind F2 Southwest, Cloud 6/8, Dry, 3c, Excellent visibility. On-site 08.30hrs – 15.30hrs.

Species recorded – Herring Gull, Black-headed Gull, Grey Heron, Dunnock, Robin, Stonechat, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Long-tailed Tit, Linnet, Goldcrest, Bullfinch, Chaffinch, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Mistle Thrush, Redwing, Song Thrush, Pied Wagtail, Mallard, Pheasant, Magpie, Hooded Crow, Rook, Jackdaw, Kestrel, Buzzard, Snipe.

Observations from 08.30hrs – 12.00hrs –

At the northwest field on-site Yellowhammer (<3), Reed Bunting (<1), Redwing (<7), Skylark (<2) and Linnet (<6) were foraging at 08.45hrs. Two Mallard were foraging on the stream north of the bridge at 08.50hrs. At the large field at the west of the site Goldfinch (<8), Skylark (<10), Yellowhammer (<1), Linnet (<15) and Bullfinch (<2) were foraging on-site from 09.00-09.30hrs, a Grey Heron was observed roosting at the south side of the field at 09.10hrs. Herring Gull and Black-headed Gull (<10 each) were noted passing over the site but not foraging on-site. At the north field at the east side of the site Skylark (<4), House Sparrow (<8), Blue Tit (<2), Wren (<2), Goldcrest (<1), Meadow Pipit (<4) and Goldfinch (<10) were observed foraging from 09.50-10.10hrs. Skylark (<2), Yellowhammer (<4) and a Snipe (<1) were flushed from the central field at the east side of the site at 10.30hrs. At the south field (1) of the site a Kestrel was observed hunting at the east side from 10.45-10.50hrs. Also foraging in the south field were Yellowhammer (<1), Song Thrush (<5), Reed Bunting (<2), Stonechat (<1), Blue Tit (<1) and

Pheasant (<1). Rook (<10), Jackdaw (<15) and Hooded Crow (<2) were noted foraging in fields across the east side of the site.

Observations from 12.00hrs – 15.30hrs –

At the large field in the west of the site Linnet (<22), Goldfinch (<9), Skylark (<4) and Meadow Pipit (<2) and Mistle Thrush (<2) were recorded foraging from 12.40-13.20hrs. Two Buzzard also past east over the large field at 13.08hrs. A Mallard (<1) and Grey Heron were noted foraging on the stream south of the bridge at 13.25hrs. At the north field at the east side of the site Yellowhammer (<2), Linnet (<5), Meadow Pipit (<1) and Chaffinch (<3) were foraging from 13.40-14.00hrs. Yellowhammer (<4), Chaffinch (<6) and Song Thrush (<1) were foraging in the central field at the east side at 14.15hrs. At the south field (1) a Snipe (<1) was flushed from the middle at 14.40hrs, also foraging in the area were Yellowhammer (1), Blackbird (<3), Blue Tit (1) and Long-tailed Tit (<5). No other target species recorded.

December 5th, 2021

Sunrise- 08.23hrs/Sunset 16.08hrs. Weather – Wind F3 West, Cloud 3/8, Dry, 2c, Excellent visibility. On-site 08.30hrs – 15.30hrs.

Species recorded – Herring Gull, Black-headed Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Long-tailed Tit, Goldcrest, Linnet, Redpoll, Chaffinch, Siskin, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Mistle Thrush, Song Thrush, Starling, Pied Wagtail, Pheasant, Magpie, Hooded Crow, Rook, Jackdaw, Buzzard, Kingfisher.

Observations from 08.45hrs – 12.00hrs –

At the northwest field of the site Yellowhammer (<3), Redpoll (<1), Meadow Pipit (<5), Dunnock (<2) and Song Thrush (<1) were observed from 08.45-09.05hrs. At the large field at the west side of the site Skylark (<10), Linnet (<15), Chaffinch (<5), Goldfinch (<3), Yellowhammer (<4), Dunnock (<2) and Pheasant (1) were recorded foraging from 09.20-09.45hrs. A Kingfisher was noted foraging south of the bridge at 10.05hrs. At the north field at the east of the site House Sparrow (<5), Wren (<3), Great Tit (<2), Woodpigeon (<7), Robin (<1) and Meadow Pipit (<1) were noted foraging from 10.15-10.40hrs. Yellowhammer (<3), Chaffinch (<5) and Mistle Thrush (<2) were noted in the central field at the east side from 10.50-11.10hrs. In the south field (1) of the site Reed Bunting (<1), Yellowhammer (<3), Blackbird (<2), Buzzard (<1), Redpoll (<2) and Pied Wagtail were recorded from 11.30-11.55hrs.

Observations from 12.00hrs – 15.45hrs –

A Kingfisher was again observed north of the bridge foraging on the stream at 12.15hrs. Yellowhammer (<5), Siskin (<1), Chaffinch (<11), Dunnock (<2) and Meadow Pipit (<1) were observed at the field at the northwest of the site from 12.30-12.50hrs. In the large field at the west of the site Skylark (<5), Linnet (<10), Meadow Pipit (<3) and Starling (<20) were recorded foraging from 13.10-13.30hrs. At the east of the site Skylark (<2), Goldfinch (<6), Wren (<1) and House Sparrow (<5) were recorded at the north field at 13.50hrs. Yellowhammer (<2), Blackbird (<4), Robin (<1) and Mistle Thrush (<2) were noted in the central field at the east side from 14.10-14.30hrs. At the south field (1) Reed Bunting (<2), Yellowhammer (<1), Chaffinch (<5), Meadow Pipit (<2) and Song Thrush (<2) were noted from 14.44-15.15hrs. No other target species recorded.

December 18th, 2021

Sunrise- 08.36hrs/Sunset 16.06hrs. Weather – Wind F2 East, Dry, Cloud 4/8, 6c, Excellent visibility. On-site 09.00hrs – 15.45hrs.

Species recorded – Herring Gull, Black-headed Gull, Common Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Long-tailed Tit, Goldcrest, Linnet, Chaffinch, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Mistle Thrush, Redwing, Song Thrush, Starling, Pied Wagtail, Pheasant, Magpie, Hooded Crow, Rook, Jackdaw, Sparrowhawk, Buzzard, Grey Heron, Mute Swan, Mallard, Snipe.

Observations from 09.00hrs – 12.00hrs –

At the northwest field of the site Yellowhammer (<2), Dunnock (<2), Redwing (<1), Wren (<1) and Linnet (<4) were recorded at 09.15hrs. A Grey Heron was observed foraging south of the bridge on the stream at 09.30hrs. In the large field at the west of the site Skylark (<4), Meadow Pipit (<8), Linnet (<15), Woodpigeon (<10), Starling (<40) and House Sparrow (<2) were noted foraging from 09.45-10.15hrs. Mute Swan (<3) were observed flying south over the site following the stream at 10.22hrs. At the north end of the east side of the site a Sparrowhawk was observed hunting at 10.40hrs, also recorded in the same area were Skylark (<1), House Sparrow (<7), Yellowhammer (<1), Meadow Pipit (<2) and Blackbird (<3). In the central field at the east side Yellowhammer (<2), Song Thrush (<4), Dunnock (<2) and Buzzard (<1) were noted foraging from 11.00-11.20hrs. At the south field (1) Snipe (<4 -flushed from middle), Yellowhammer (<1), Reed Bunting (<2), Long-tailed Tit (<1), Goldcrest (<1) and Robin (<2) were recorded from 11.30-11.55hrs.

Observations from 12.00hrs – 15.45hrs –

Mallard (<2) two observed foraging north of the bridge at 12.20hrs. At the northwest field of the site Yellowhammer (<3), Redwing (<12), Blackbird (<3), Dunnock (<2) and Wren (<1) were noted foraging from 12.15-12.40hrs. At the large field at the west of the site Skylark (<1), Yellowhammer (<3), Linnet (<16), Goldfinch (<10) and Meadow Pipit (<4) were noted from 13.00-13.20hrs. Black-headed Gull (<4) were noted briefly foraging in the large field from 13.15-13.25hrs. Small numbers of Herring Gull (<8) and Common Gull (<2) passing overhead in same area but not foraging on-site. At the east side of the site Yellowhammer (<3), Chaffinch (<8) and Goldfinch (<2) were noted in the central field at 13.50hrs. At the south field (1) Reed Bunting (<2), Chaffinch (<1), Meadow Pipit (<4) and Pheasant (<1) were recorded at 14.15hrs. A Snipe was flushed from the central field at 14.35hrs and Mallard (<2) were noted foraging south from the bridge at 14.40hrs. No other target species recorded.

January 7th, 2022

Sunrise- 08.38hrs/Sunset 16.24hrs. Weather – Wind F3 West, Cloud 7/8, Dry, 2c, Excellent visibility. On-site 09.15hrs – 15.30hrs.

Species recorded – Herring Gull, Black-headed Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Coal Tit, Long-tailed Tit, Goldcrest, Linnet, Bullfinch, Chaffinch, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Mistle Thrush, Redwing, Fieldfare, Song Thrush, Starling, Pied Wagtail, Pheasant, Magpie, Hooded Crow, Rook, Jackdaw, Raven, Buzzard, Mallard, Snipe, Kingfisher.

Observations from 09.15hrs – 12.00hrs –

In the northwest field of the site Yellowhammer (<4), Fieldfare (<2), Redwing (<18), Dunnock (<2), Song Thrush (<1) and Blackbird (<2) were noted foraging from 09.15-09.40hrs. Mallard (<3) were noted foraging north of the bridge at 09.28hrs. In the large field at the west side of the site Snipe (<2 flushed from middle), Skylark (<4), Yellowhammer (<2), Linnet (<22), Meadow Pipit (<2), Chaffinch (<12), Goldfinch (<5) and Wren (<2) were recorded from 09.45-10.15hrs. At the east side of the site at the north field Redwing (<8), House Sparrow (<2), Yellowhammer (<2), Coal Tit (<1), Dunnock (<4), Woodpigeon (<15) and Robin (<1) were noted from 10.30-10.50hrs. At the central field Yellowhammer (<2), Reed bunting (<1), Song Thrush (<5), and a foraging Buzzard (<1) were noted from 10.55-11.15hrs. At the south field (1) Snipe (<2), Reed Bunting (<3), Chaffinch (<10), Blackbird (<4), Goldcrest (<1) and Goldfinch (<2) were recorded from 11.25-11.45hrs.

Observations from 12.00hrs – 15.30hrs –

At the large field at the west of the site Yellowhammer (<5), Fieldfare (<2), Linnet (<30), House Sparrow (<9), Pheasant (<2), Blackbird (<5), Meadow Pipit (<1) and Starling (<40) were noted from 12.10-12.50hrs. A Kingfisher was noted south of the bridge close to the south end of the site at 12.45hrs on the stream. At the north end of the east side of the site Redwing (<10), Dunnock (<3), Wren (<4), House Sparrow (<10) and Robin (<2) were noted at 13.00hrs. Yellowhammer (<3), Chaffinch (<5) and Bullfinch (<2) were noted in the central field at the east of the site at 13.30hrs. At the south end of the site (1) Yellowhammer (<2), Skylark (<3), Pied Wagtail (<1), Goldcrest (<2), Reed Bunting (<1) and Redwing (<2) were noted from 13.50-14.15hrs. A Raven (<1) flew north over the east side of the site at 14.40hrs. Small numbers (<10 each) of Herring and Black-headed Gulls noted passing over the site but were not observed to forage on-site, no other target species recorded.

January 24th, 2022

Sunrise- 08.38hrs/Sunset 16.24hrs. Weather – Wind F3 Southeast, Cloud 6/8, 4c, Excellent visibility. On-site 09.30hrs – 15.30hrs.

Species recorded – Herring Gull, Black-headed Gull, Common Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Long-tailed Tit, Goldcrest, Linnet, Chaffinch, Goldfinch, Redpoll, Yellowhammer, Reed Bunting, Blackbird, Mistle Thrush, Redwing, Song Thrush, Starling, Stonechat, Pied Wagtail, Pheasant, Magpie, Hooded Crow, Rook, Jackdaw, Buzzard, Kestrel, Mallard, Snipe.

Observations from 09.30hrs – 12.00hrs –

At the northwest field of the site Yellowhammer (<2), Blackbird (<4), Song Thrush (<3), Dunnock (<1) and Robin (<1) were recorded foraging from 09.30-09.45hrs. At the large field at the west of the site Yellowhammer (<5), House Sparrow (<8), Chaffinch (<12), Starling (<30), Skylark (<2) and Meadow Pipit (<3) were noted foraging from 09.50-10.25hrs. At the north end of the east side of the site a Kestrel was noted hunting at 10.45hrs. Also in this area were Skylark (<2), Linnet (<8), Song Thrush (<2), Dunnock (<4) and Stonechat (<1). In the central area of the east side of the site Buzzard (<1), Yellowhammer (<3), Woodpigeon (<5), Redpoll (<8) and Blue Tit (<4) were noted foraging from 11.00-11.25hrs. At the south field of the site Snipe (<8 flushed), Yellowhammer (<1), Reed Bunting (<2), Stonechat (<1), Meadow Pipit (<2) and Goldfinch (<10) were noted foraging from 11.35-12.10hrs.

Observations from 12.00hrs – 15.30hrs –

Mallard (<4) were noted foraging south of the bridge at 12.35hrs. At the northwest field of the site Yellowhammer (<3), Song Thrush (<5), Meadow Pipit (<2) and Dunnock (<2) were noted foraging from 12.45-13.05hrs. At the large field at the west of the site Skylark (<8), Linnet (<15), Yellowhammer (<4), Chaffinch (<2), House Sparrow (<6) and Meadow Pipit (<10) were recorded foraging from 13.20-13.50hrs. At the east side of the site at the north end Woodpigeon (<30), Yellowhammer (<4), Dunnock (<6), Wren (<3) and Robin (<4) were recorded from 14.15-14.40hrs. At the south field of the site Snipe (<3), Yellowhammer (<1), Chaffinch (<10), Dunnock (<2) and Reed Bunting (<1) were noted at 15.10hrs. Small numbers of Herring, Black-headed and Common Gull were noted passing over site but not observed foraging on-site, no other target species recorded.

February 10th, 2022

Sunrise- 07.51hrs/Sunset 17.26hrs. Weather – Wind F4 West, Cloud 5/8, Dry, 7c, Excellent visibility. On-site 08.30hrs – 15.00hrs.

Species recorded – Herring Gull, Black-headed Gull, Common Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Long-tailed Tit, Goldcrest, Linnet, Chaffinch,

Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Song Thrush, Starling, Blackcap, Pied Wagtail, Magpie, Hooded Crow, Rook, Raven, Jackdaw, Buzzard, Mallard, Snipe, Kingfisher.

Observations from 09.00hrs – 12.00hrs –

Entire site (except for south field) very recently ploughed over, immediately apparent that the resulting effect was much reduced numbers of foraging passerines, with almost none now foraging in the fields (mainly corvids only – small numbers of Rook and Jackdaw). Almost all passerines recorded from the hedgerows. At the northwest field Yellowhammer (<1), Blackbird (<2), Song Thrush (<1), Dunnock (<2), Robin (<1) recorded from 08.30-09.00hrs. At the large field at the west side of the site Skylark (<2), Yellowhammer (<1), Buzzard (<1), Chaffinch (<3), Long-tailed Tit (<4), Starling (<25), Pied Wagtail (<1) and House Sparrow (<5) recorded from 09.00-09.40hrs. Mallard (<2) noted foraging south of the bridge on river at 10.05hrs. At east side of the site Yellowhammer (<4), Great Tit (<2), Blackcap (<1), Goldcrest (<1), Woodpigeon (<10), Meadow Pipit (<3) and Raven (<1) recorded from 10.15-11.20hrs. At the south field of the site Snipe (<1), Linnet (<8), Skylark (<2), Wren (<2) and Reed Bunting (<1) recorded from 11.30-12.00hrs.

Observations from 12.00hrs – 15.00hrs –

A Kingfisher was noted north of the bridge foraging at 12.18hrs. Bird diversity and numbers similar to the morning around the site with highlights of Yellowhammer (<3) and Reed Bunting (<1) in the center of the east side at 13.30hrs and Snipe (<2) recorded at the south field at 14.10hrs. Herring, Common and Black-headed Gull recorded in small numbers passing over the site but not observed to forage on-site. No other target species recorded.

February 25th, 2022

Sunrise- 07.21hrs/Sunset 17.55hrs. Weather – Wind F2 Southwest, Cloud 3/8, Dry, 8c, Excellent visibility. On-site 08.30hrs – 15.30hrs.

Species recorded – Herring Gull, Black-headed Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Long-tailed Tit, Goldcrest, Linnet, Redpoll, Chaffinch, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Redwing, Song Thrush, Mistle Thrush, Starling, Pied Wagtail, Magpie, Hooded Crow, Rook, Jackdaw, Buzzard, Mallard, Snipe.

Observations from 08.30hrs – 12.00hrs –

At the northwest field of the site Yellowhammer (<2), Song Thrush (<4), Dunnock (<2), Wren (<1) and Woodpigeon (<3) were recorded from 08.30-08.45hrs. At the large field at the west of the site Yellowhammer (<2), Blue Tit (<1), House Sparrow (<8), Pied Wagtail (<1), Chaffinch (<3), Blackbird (<2), Linnet (<3) and Goldfinch (<5) were recorded from 09.00-09.40hrs. At the east side of the site Yellowhammer (<3), Chaffinch (<7), Mistle Thrush (<3), Skylark (<4), Starling (<35), Goldcrest (<1), Redpoll (<2), Wren (<3), Long-tailed Tit (<8) and Dunnock (<4) were recorded from 10.00-11.15hrs. At the south field Snipe (<2), Reed Bunting (<1), Great Tit (<2), Skylark (<1) and Goldfinch (<4) were recorded from 11.35-12.05hrs.

Observations from 12.00hrs – 15.30hrs –

At the northwest field of the site Yellowhammer (<1), Chaffinch (<4), Dunnock (<3), Wren (<3), Woodpigeon (<6), Song Thrush (<2) and Robin (<1) were noted from 12.20-12.45hrs. At the large field at the west of the site Yellowhammer (<3), Linnet (<10), Pied Wagtail (<2), Meadow Pipit (<1), Dunnock (<2) and Skylark (<2) were recorded from 13.00-13.45hrs. Mallard (<3) were noted foraging north of the bridge at 14.05hrs. East side of the site quiet with the notables being Yellowhammer (<2), Reed Bunting (<3), Redwing (<6) and Buzzard (<2) foraging from 14.15-15.015hrs. Again no foraging Gulls on-site. No other target species recorded.

March 5th, 2022

Sunrise- 07.03hrs/Sunset 18.10hrs. Weather – Wind F2 Southeast, Cloud 3/8, Dry, 6c, Excellent visibility. On-site 08.15hrs – 16.00hrs.

Species recorded – Herring Gull, Black-headed Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Long-tailed Tit, Goldcrest, Linnet, Chaffinch, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Song Thrush, Mistle Thrush, Starling, Pied Wagtail, Magpie, Hooded Crow, Rook, Jackdaw, Buzzard, Sparrowhawk.

Observations from 08.15hrs – 12.00hrs –

At the northwest field of the site Chaffinch (<3), Linnet (<8), Woodpigeon (<10), Dunnock (<2), Blackbird (<3) and Wren (<1) were recorded from 08.15-08-40hrs. At the large field at the west side of the site Yellowhammer (<3), Skylark (<2), Dunnock (<3), Woodpigeon (<5), Blackbird (<2), Mistle Thrush (<2), House Sparrow (<10) and Blue Tit (<2) were recorded from 08.50-09.45hrs. At the east side of the site during the morning highlights recorded were Yellowhammer (<4 maximum count), Reed Bunting (<3), Goldcrest (<1), Sparrowhawk (<1 hunting at north end).

Observations from 12.00hrs – 16.00hrs –

At the large field at the west of the site Yellowhammer (<2), Skylark (<1), Starling (<20), Blackbird (<5), Song Thrush (<1), House Sparrow (<8) and Goldfinch (<15) from 12.15-13.15hrs. A Buzzard (<1), and Yellowhammer (<2) were noted foraging at the northwestern field at 13.40hrs. At the east side of the site from 13.50-15.15hrs Yellowhammer (<4 maximum count), Reed Bunting (<2), Starling (<30), Long-tailed Tit (<8), Song Thrush (<4), Blackbird (<6), Wren (<3), Skylark (<2) were recorded. No other target species recorded.

March 18th, 2022

Sunrise- 06.32hrs/Sunset 18.34hrs. Weather – Wind F3 Northwest, Cloud 5/8, Dry, 10c, Excellent visibility. On-site 08.15hrs – 16.00hrs.

Species recorded – Herring Gull, Black-headed Gull, Lesser black-backed Gull, Dunnock, Robin, Wren, House Sparrow, Skylark, Meadow Pipit, Woodpigeon, Starling, Blue Tit, Great Tit, Long-tailed Tit, Goldcrest, Linnet, Chaffinch, Greenfinch, Goldfinch, Yellowhammer, Reed Bunting, Blackbird, Song Thrush, Mistle Thrush, Starling, Pied Wagtail, Magpie, Hooded Crow, Rook, Jackdaw, Mallard.

Observations from 08.15hrs – 12.00hrs –

At the northwest field of the site Yellowhammer (<1), Meadow Pipit (<2), Dunnock (<2), Song Thrush (<1) and Blackbird (<1) were recorded from 08.15-08.45hrs. Mallard (<2) and Grey Heron (<1) were observed foraging south of the bridge at 09.05hrs. At the large field at the west side of the site Skylark (<1), Meadow Pipit (<2), Blackbird (<5), House Sparrow (<8), Chaffinch (<6) and Greenfinch (<1) were recorded from 09.15-10.20hrs. At the east side of the site Yellowhammer (<4 maximum), Reed Bunting (<2), Skylark (<1), Blackbird (<4), Wren (<3), Mistle Thrush (<2), Great Tit (<2), Goldcrest (<1), Linnet (<4), Woodpigeon (<10) and Robin (<3) were noted from 10.40-11.45hrs.

Observations from 12.00hrs – 16.00hrs –

At the large field at the west side of the site Yellowhammer (<2), Chaffinch (<5), House Sparrow (<10), Skylark (<3), Pied Wagtail (<2), Woodpigeon (<14), Blackbird (<5), Wren (<2), Dunnock (<4) and Song Thrush (<1) were recorded from 12.15-12.35hrs. At the northwest field Yellowhammer (<2), Dunnock (<3), Blackbird (<2) and Pied

Wagtail (<1) were present from 12.45-13.05hrs. At the east side of the site during the afternoon Yellowhammer (<5 in central field and south field), Reed Bunting (<2 in south field), Mistle Thrush (<4), Blackbird (<5), Song Thrush (<2), Dunnock (<4), Wren (<3), Woodpigeon (<15) and Goldfinch (<8) were recorded from 13.15-15.00hrs. Small numbers of Herring (<15), Black-headed Gull (<10) and Lesser black-backed Gull (<3) noted passing over the site during the day, none observed foraging on-site. No other target species recorded.

Comments and observations on the survey results

50 bird species were recorded at lands at Ballyoulster near Celbridge in County Kildare during 11 winter bird surveys from October 2021 to March 2022. The species diversity was quite typical of that expected in the context of inland arable lands in Leinster. In the context of wintering bird species that are red listed as species of conservation concern in the revised Birdwatch Ireland List of birds of conservation concern in Ireland (2020-2026) Redwing and Snipe were recorded in small numbers. Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). Some of the more notable species recorded wintering on-site were Yellowhammer, Reed Bunting, Skylark, and Kingfisher (recorded on four dates on the stream) with several sightings of Kestrel and once a Merlin. Snipe was mostly recorded at the south field section of the site. Mallard is amber listed as a wintering species of conservation concern in Ireland and was recorded in small numbers on the stream on-site. Four species were noted passing almost exclusively over the site and were not noted to forage on the site itself.

APPENDIX 5.3: BREEDING BIRD ASSESSMENT 2022

Introduction

In May and June 2022 breeding bird surveys were conducted at lands grounds at Ballyoulster near Celbridge, in County Kildare. Two breeding bird surveys were completed in all by Hugh Delaney, a freelance Ecologist (Birds primarily) who has extensive surveying experience on numerous sites with ecological consultancies over 10+ years. Hugh, a lifelong birder, is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

Breeding Bird Survey Methodology

Breeding bird surveys are conducted from soon after sunrise or as early as so possible, taking several hours or longer depending on site size. They are conducted then in order to detect as many singing species as possible and birds that are generally more active early in the day. All species on site, singing, foraging and passing through site are recorded, and any evidence of breeding recorded. Optimal weather conditions are chosen, if possible, in order to gather the most data.

Site Location



Figure 1. Survey Location (outlined in red) at Ballyoulster, County Kildare. The field marked (1) will be referred to as such or the ‘south field’ in the notes as it differs markedly in habitat type from the rest of the site. Green marking marks the bridge over the stream that bisects the site.

Site Description

The site comprises almost entirely arable fields east of Celbridge Town. The fields comprise arable well grown arable crops (having been sown in the late winter). The fields are bordered largely by hedgerows, interspersed with some larger trees. Housing estates border the site to the east and north. The field marked (1), the south field, at the south of the site differs markedly from the rest of the site, it is not arable, comprising rough ground with willow patches and patches of wet ground. The site is bisected in the middle by a stream running south to north, well vegetated especially on its east side, a small bridge at the north side allowed access across the site (location marked in green).

Specific site survey methodology

Site was traversed from north to south following the stream then back north along the east side and back west covering the west side. Vantage point observations also made from bridge over the stream and from points at east and west sides of the site where optimal views across the site were apparent.

Survey Results

May 12th, 2022

Sunrise- 05.30hrs/Sunset- 21.15hrs. Weather – Wind F2 Southwest, Cloud 5/8, Dry, 10c, Excellent visibility. On-site 07.15hrs – 10.30hrs.

Species recorded – Wren, House Sparrow, Blue Tit, Great Tit, Long-tailed Tit, Yellowhammer, Blackcap, Dunnock, Robin, Song Thrush, Blackbird, Chaffinch, Rook, Starling, Woodpigeon, Hooded Crow, Magpie, Herring Gull, House Martin, Swallow, Linnet, Reed Bunting, Meadow Pipit, Pied Wagtail, Goldfinch.

Wren (x8) Minimum of 8 in song distributed across the site, at least 4 along the course of the stream.

Robin (x7) Five noted in song, also an adult noted provisioning a fledged bird at the northeast of the site at 08.30hrs.

Magpie (x10) Minimum count, birds foraging mainly at the west side of the site.

Woodpigeon (x15) Four heard in song at east side of the site, others noted foraging around the site.

Blue Tit (x12) Adults observed provisioning young at the center of the east side of the site, others observed foraging around the site.

Great Tit (x3) Adults noted foraging around the site.

Long-tailed Tit (x4) Two pairs noted, one in the west side and one in the east side, pair in the east side noted nest building.

Blackbird (x6) Minimum of six in song around the site, mainly at the east side.

Song Thrush (x1) One noted in song at the east side of the site.

Hooded Crow (x12) Estimate of number observed on-site or passing over site.

Rook (x15) Birds passing over the site, not observed foraging on-site.

Jackdaw (x8) Birds observed mainly passing over the site.

Goldfinch (x5) Five noted in song on-site, three at west side and two at the east side.

House Sparrow (x12) Noted foraging around the site, mainly near the housing estates at the west side of the site.

Chaffinch (x2) Two in song at the east side of the site.

Reed Bunting (x1) Male in song at the south field of the site at 08.10hrs.

Linnet (x15) Foraging around the site, two in song at the south field of the site.

Skylark (x1) One in song in the south field of the site.

Blackcap (x4) Minimum of four in song, three at the east side and one at the west side of the site.

Yellowhammer (x3) Minimum of two territories noted on-site, a male holding territory (in song) around the bridge area with a female, and one in song at the center of the east side of the site.

Dunnock (x6) Six noted in song on-site, five at the east side and one at the west side.

Swallow (x2) Noted foraging over the south of the site.

House Martin (x2) Foraging around the bridge over the stream.

Meadow Pipit (x1) One in song at the south field of the site.

Pied Wagtail (x1) One foraging at the south field of the site at 08.20hrs.

Starling (x15) Minimum count of birds foraging mainly at the south of the site.

Herring Gull (x10) Single birds passing over the site, mainly at the west side of the site.

Species proved breeding – Long-tailed Tit, Robin, Blue Tit.

June 3rd, 2022

Sunrise- 05.02hrs/Sunset- 21.08hrs. Weather – Wind F1 Northeast, Cloud 7/8, Dry, 13c, Excellent visibility. On-site 07.00hrs – 10.15hrs.

Species recorded – Wren, House Sparrow, Blue Tit, Great Tit, Yellowhammer, Blackcap, Willow Warbler, Dunnock, Robin, Song Thrush, Mistle Thrush, Blackbird, Chaffinch, Bullfinch, Rook, Starling, Woodpigeon, Hooded Crow, Magpie, Herring Gull, Lesser black-backed Gull, House Martin, Swallow, Linnet, Reed Bunting, Meadow Pipit, Goldfinch, Grey Heron, Mallard.

Wren (x10) Minimum of 10 in song widely distributed across the site, adults provisioning food to young north of the bridge at the stream observed at 07.15hrs.

Robin (x3) Three noted in song, two along stream and one at east of the site.

Magpie (x6) Minimum count, birds foraging mainly at the west side of the site.

Woodpigeon (x8) Two heard in song at east side of the site, others noted foraging around the site.

Blue Tit (x20) Minimum count, at least 4 family groups noted around the site, 3 along the stream and another in the northeast of the site, adults provisioning recently fledged birds.

Great Tit (x9) Two family groups noted on-site, one at the west side of the large field at the west side of the site and one in the south field of the site. Adults provisioning young.

Blackbird (x5) Three in song around the site. An adult was noted provisioning a recently fledged bird at the south field of the site at 07.32hrs.

Song Thrush (x2) Two noted in song at the east side of the site.

Mistle Thrush (x1) One observed foraging at the east side of the site.

Hooded Crow (x8) Estimate of number observed on-site or passing over site.

Rook (x20) Passing over the site.

Goldfinch (x3) Three noted in song on-site, two at west side and one at the east side.

House Sparrow (x6) Six noted foraging around the site.

Bullfinch (x2) Pair foraging at the east side of the site.

Chaffinch (x1) One in song at the east of the site.

Reed Bunting (x2) Pair present in the south field of the site, with male in song, likely nesting.

Linnet (x5) Foraging in the south field of the site.

Skylark (x2) Two in song at the east side of the site, one in the south field and one in the north field.

Blackcap (x7) Male nest building at the south field, and adults provisioning young at the west side of the site at 09.24hrs, two other birds heard in song at the east side of the site.

Willow Warbler (x1) One in song at the south side of the south field.

Yellowhammer (x6) Minimum of three territories noted on-site, a pair holding territory (male in song) around the bridge area, at pair at the center of the east side of the site (male in song), and a pair were in song and observed nest building at the south field.



Figure 2. Locations of the Yellowhammer nesting territories (circled in blue).

Dunnock (x4) Four noted in song on-site, three at the east side and one at the west side.

Swallow (x5) Noted foraging over the south of the site.

House Martin (x8) Minimum of 8 noted collected nesting material from puddles in the center of the south field, likely nest building on structures off-site.

Meadow Pipit (x4) Two pairs noted in the south field of the site, one pair giving clear alarm calls indicating a nest in the area.

Grey Heron (x1) Bird passed west over the east of the site at 09.10hrs.

Mallard (x1) Drake observed foraging on the stream south of the bridge at 08.51hrs.

Starling (x25) Minimum count of birds foraging mainly at the south of the site.

Herring Gull (x5) Single birds passing over the site.

Lesser black-backed Gull (x2) Single birds passing over the site.

Species proved breeding – Wren, Blue Tit, Great Tit, Blackbird, Blackcap, Yellowhammer, Meadow Pipit.

Summary of Breeding Bird Survey observations at the Ballyoulster site in May-June 2022

30 Bird species were recorded at the Ballyoulster site over 2 visits in May-June 2022. Of these 9 species were proved breeding on-site, with mainly juveniles observed on-site indicating breeding on-site or in immediate adjacent areas. These were Yellowhammer, Robin, Wren, Blue Tit, Long-tailed Tit, Great Tit, Meadow Pipit, Blackbird and Blackcap. Of these species **Yellowhammer** are a red-listed breeding species (high conservation concern) from the recently updated Birdwatch Ireland's Birds of Conservation Concern in Ireland List (2020-2021), a minimum of three pairs were located on-site. Other noteworthy species noted on-site were Meadow Pipit (minimum two pairs), Reed Bunting (one pair), Willow Warbler and Skylark.