
Ecological Impact Assessment

Proposed Residential Development at
Oldtown Mill, Celbridge, Co. Kildare

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Executive Summary

This Ecological Impact Assessment has been prepared by NM Ecology Ltd on behalf of the National Development Finance Agency and Kildare County Council in relation to a site at Oldtown Mill, Celbridge, Co. Kildare. The proposed development will involve the construction of 60 dwellings and associated works. The aim of this report is to identify and evaluate the impacts of the proposed development on ecosystems and their components, including designated sites, habitats, flora and fauna.

Designated sites

The proposed development site is not within or adjacent to any designated sites. There are four designated sites within 5 km of the Site, but none are connected by surface water (or other) pathways, so any risk of indirect impacts can be ruled out.

A *Screening for Appropriate Assessment* report accompanies the application. It was concluded that the proposed development will not be likely to have a significant effect on any European sites.

Habitats and flora

Habitats within the proposed development site include hedgerow, scrub, dry meadow and recolonising bare ground. The hedgerow is considered to be of Local ecological importance due to its age and species composition. The majority of the hedgerow will be retained and incorporated into the public open space for the development, and the removal of the remainder (approx. 50 m in length) will be compensated by the planting of trees and shrubs as part of the landscaping scheme, resulting in an overall neutral impact on hedgerow habitat.

The proposed development will involve the removal of large areas of scrub and dry meadow in the centre of the Site. These habitats are considered to be of Negligible ecological importance because they consist of plant species that are common and widespread, and because they have formed in the last 20 years due to the cessation of management at the Site. The removal of habitats of Negligible ecological importance is not considered to be a significant impact in the context of an Ecological Impact Assessment. However, the removal of these habitats will result in a net loss of biodiversity from the proposed development site.

The landscaping scheme for the proposed development will include a detention basin (planted with wetland vegetation), hedgerows, street trees and orchards. These measures will partly compensate for the loss of baseline vegetation, and will introduce some features that are not currently present at the site, such as a detention basin with wetland vegetation.

No legally-restricted invasive plant species (e.g. Japanese knotweed) were recorded at the site.

Fauna

No field signs of otters, badgers or other large terrestrial mammals were identified at the site. A bat survey was carried out, and bat foraging / commuting activity was very low. The hedgerow and scrub habitat are considered to be of Local importance for small mammals such as hedgehog, pygmy shrew and stoat. Some common and widespread bird species were recorded at the Site, but no species of conservation importance. Small mammals and nesting birds could potentially be affected during the removal of vegetation, so it is recommended that the site is cleared outside the nesting / breeding season or that a pre-clearance survey is carried out.

Conclusion

Subject to the successful implementation of these measures, we conclude that the proposed development will not cause any significant negative impacts on designated sites, habitats, legally protected species, or any other features of ecological importance.

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1 Introduction

1.1 Assessment brief

The aim of this Ecological Impact Assessment (EclA) is to identify, quantify and evaluate the impacts of the proposed development on ecosystems and their components. This includes designated sites, habitats, flora and fauna. It has been prepared in accordance with the *Guidelines for Ecological Impact Assessment in the UK and Ireland (2018)*, which is the primary resource used by members of the Chartered Institute of Ecology and Environmental Management (CIEEM). The purpose of this document is to:

- Provide an objective and transparent assessment of the potential ecological impacts of the proposed development for all interested parties, including planning authorities and the general public,
- Facilitate objective and transparent determination of the consequences of the development in terms of national, regional and local policies relevant to ecology, and,
- Propose the steps that will be taken to adhere to legal requirements relating to designated sites and legally protected species (CIEEM 2018).

Although the above guidelines provide a framework for EclA, many processes rely on the professional judgement of an ecologist, including survey design, the valuation of ecological features, and the characterisation of impacts. An outline of the author's experience, training and accreditation is provided in the following section, which support his competency to make such judgements.

1.2 Statement of authority

All surveying and reporting was carried out by Nick Marchant, the principal ecologist of NM Ecology Ltd. He has sixteen years of professional experience, including thirteen years as an ecological consultant, one year as a local authority biodiversity officer, and two years managing an NGO in Indonesia. He provides ecological assessments for developments throughout Ireland and Northern Ireland, including wind farms, infrastructural projects (roads, water pipelines, greenways, etc.), and a range of residential and commercial developments.

He has an MSc in Ecosystem Conservation and Landscape Management from NUI Galway and a BSc in Environmental Science from Queens University Belfast. He is a member of the Chartered Institute of Ecology and Environmental Management, and operates in accordance with their code of professional conduct.

2 Methods

2.1 Scoping

An Ecological Impact Assessment involves the following steps:

- Identification of designated sites within an appropriate zone of influence
- A walkover survey incorporating the following elements:
 - Classification and mapping of habitats
 - A search for rare / protected flora, and for invasive plant species
 - A search for field signs of rare or protected fauna (e.g. badgers), and habitat suitability assessments for species that are secretive, nocturnal or seasonal
 - Specialist surveys (e.g. bats, breeding birds) where appropriate
- Valuation of ecological features, review of legal considerations, and identification of important ecological features
- Assessment of impacts on important ecological features and development of appropriate mitigation strategies

2.2 Data collection and walkover survey

A desk-based scoping study was carried out using data from the following sources:

- Plans and specifications for the proposed development
- Bedrock, soil, subsoil, ground water and surface water maps from the Geological Survey of Ireland webmapping service, the National Biodiversity Data Centre, and the Environmental Protection Agency web viewer
- Maps and details of designated sites from www.npws.ie
- Biological records from the National Biodiversity Data Centre online mapping service
- The *Kildare County Development Plan 2023 - 2029*, and details of permitted or proposed developments from their online planning records

The following resources were used for the walkover surveys:

- Habitat surveys were carried out in accordance with the *Best Practice Guidance for Habitat Survey and Mapping* (Smith et al 2011), and using the classification system of *A Guide to the Habitats of Ireland* (Fossitt 2000)
- Flora were identified using *Webb's An Irish Flora* (Parnell & Curtis 2012) and *The Vegetation Key to the British Flora* (Poland & Clement 2009). Nomenclature follows the plant crib of the Botanical Society of the British Isles (BSBI 2007). The abundance and extent of species is described using the DAFOR scale (Dominant, Abundant, Frequent, Occasional, Rare)
- Fauna surveys followed the methods outlined in the *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA 2006), with reference to other species-specific methods as appropriate.

Desktop data from internet resources was accessed between June and November 2023, a multi-disciplinary survey was carried out on 14 June 2023, and a bat survey on 7 September.

Bat survey

The bat activity survey was carried out at dusk on 7 September 2023. It involved a slow-paced walk around the boundaries and interior of the site for one hour in the post-sunset period, recording any bat passes using a handheld bat detector (Anabat Walkabout, Titley Scientific Inc.). Survey methods were developed using *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Bat Conservation Trust, 3rd edition, 2016). Weather conditions were ideal for a bat survey: 22 °C sunset temperature, dry, and with no wind.

2.3 Valuation of ecological features

Based on the information collected during desktop and walkover surveys, the ecologist assigns an ecological importance to each feature based on its conservation status at different geographical scales (Table 1). For example, a site may be of National importance for a given species if it supports a significant proportion (e.g. 5%) of the total national population of that species.

Table 1: The six-level ecological valuation scheme used in the CIEEM guidelines (2018)

Ecological value	Geographical scale of importance
International	International or European scale
National	The Republic of Ireland or the island of Ireland
Regional	Leinster, and/or the east midlands of Ireland
County	County Kildare
Local	Suburban areas around Celbridge
Negligible	None, the feature is common and widespread

It is accepted that any development will have an impact on the receiving environment, but the significance of the impact will depend on the importance of the ecological features that would be affected. The following is outlined in the CIEEM guidelines: *“one of the key challenges in an EclA is to decide which ecological features (habitats, species, ecosystems and their functions/processes) are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to impacts from the development, and that will remain viable and sustainable.”*

For this report we have only assessed impacts on ecological features of Local importance or higher (refer to Table 1), or those that receive legal protection. These features are termed ‘important ecological features’ and are listed in Section 4.6. Impacts on features of Negligible

ecological importance (e.g. amenity grasslands) that do not receive legal protection are not considered to be significant, so they are not included in the impact assessment.

2.4 Ecological Impact Assessment

Potential direct, indirect or cumulative impacts on ecological features can be described in relation to their magnitude, extent, duration, reversibility and timing/frequency, as outlined in the CIEEM (2018) guidelines. Depending on the type of impact and the sensitivities of the important ecological feature, the ecologist may determine that the impact would have a 'significant effect'. The following definitions are provided in the CIEEM guidelines: "A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project". "For the purpose of EclA, a 'significant negative effect' is an effect that undermines biodiversity conservation objectives for 'important ecological features', or for biodiversity in general.". Where significant impacts are identified, measures will be taken to avoid, minimise or compensate for impacts (where possible). Subject to these measures, the EclA concludes with a summary of residual impacts.

3 Development proposals

3.1 Description of the proposed development

The proposed development will comprise 60 no. residential units, including 40 no. houses and 20 no. apartments. Road access will be from Oldtown Road, and internal roads and parking areas will be provided. Public open space will be created at three locations, and houses will have private gardens.

Foul water will be discharged to a local authority foul sewer under Oldtown Road and conveyed to the Waste Water Treatment Plant (WWTP) at Leixlip, which is part of the 'Lower Liffey Valley Regional Sewerage Scheme'. In the latest Annual Environmental Report 2022, it is reported that the WWTP is operating within its organic capacity and hydraulic capacity, and the effluent is compliant with the Emission Limit Values in its wastewater discharge licence.

Rainwater runoff from roofs and other impermeable surfaces will be channelled to a detention basin in the south-west of the Site, and discharged at a controlled rate to a local authority storm drain under Oldtown Road. The system will include an oil and hydrocarbon interceptor.

3.2 Other nearby developments (potential in-combination effects)

Live and recently-approved planning applications in the vicinity of the Site were reviewed on the online planning records of Kildare County Council. Permission was granted in 2020 for 75 residential units immediately to the north of the Site (planning reference 191282). The

proposal will involve the removal of a hedgerow that is shared with the Site; this is discussed further in Section 5.1. At the time of writing in March 2024 the development is under construction.

All other recent applications in the surrounding area were for small-scale works associated with existing buildings, which pose no risk of in-combination effects.

4 The Receiving Environment

4.1 Environmental setting

Site location and surroundings

The proposed development site (hereafter referred to as 'the Site') is located in a suburban area in the north-west of Celbridge. The Site was previously used as a construction compound and spoil deposition area between 2000 and 2005, but it has not been actively managed since that time. It has since been colonised by vegetation, following a successional sequence from bare ground to pioneer vegetation to dry meadow to scrub. There are mature hedgerows along the western and north-western boundaries of the Site.

The south-eastern and eastern boundaries of the Site adjoin residential areas, and there is an active construction site to the north. There is open agricultural land to the west of the Site, used primarily as livestock pastures.

Geology and soils

The underlying bedrock is dark limestone & shale, which is a locally-important aquifer. Subsoils are limestone till.

Soils within the Site are made ground. The south-western half of the Site was formerly used for the deposition of building spoil and topsoil, with mounds of approx. 5 m height. The north-eastern part of the Site is lower-lying, but consists of soil / spoil that has been compacted by construction vehicles.

Hydrology

The EPA database of rivers and streams does not show any watercourses within or adjacent to the Site. None were observed during surveys.

The closest watercourse is the Toolestown Stream (a minor tributary of the River Liffey), which is approx. 500 m south of the Site at the closest point. Due to its distance from the Site and the presence of intervening buildings and roads, it can be concluded that the Site has no connection to Toolestown Stream.

4.2 Designated sites

A map of European sites in the surrounding area is provided in Figure 1, and details of the designated sites shown in the image are provided in Table 2.

Table 2: Designated sites shown in Figure 1

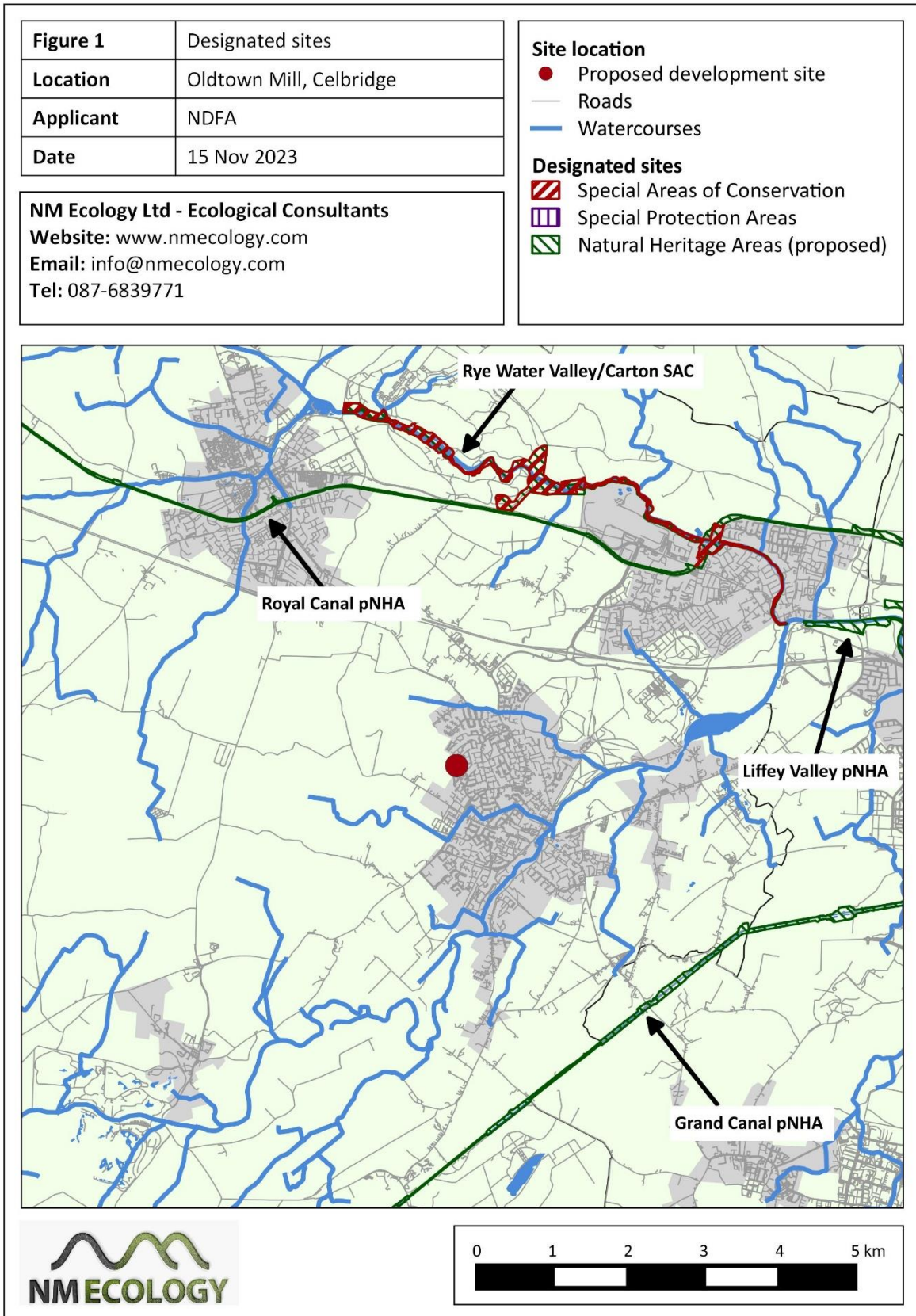
Site Name	Distance	Reasons for designation
Royal Canal pNHA (site code 2103)	3.4 km north	Diversity of habitats, ecological connectivity, and protected aquatic plant species (Opposite-leaved Pondweed <i>Groenlandia densa</i>)
Rye Water Valley/Cartron SAC (1398)	3.5 km north	Annex I habitats: Petrifying springs with tufa formation Annex II species: Narrow-mouthed Whorl Snail <i>Vertigo angustior</i> , Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i>
Grand Canal pNHA (2104)	4 km south-east	Diversity of habitats, ecological connectivity, and protected aquatic plant species (Opposite-leaved Pondweed <i>Groenlandia densa</i>)
Liffey Valley pNHA (128)	4.9 km east	Deciduous woodland, wetlands and rare plant species

The Site is not within or adjacent to any designated sites, so there is no possibility of direct impacts.

Potential indirect impacts were considered using the *source-pathway-receptor* approach, which reviews *pathways* (e.g. surface water) between the *source* (the Site) and the *receptor* (a European site). The most common pathway is surface water, which typically occurs when a pollutant is washed into a river and carried downstream into a European site. Other potential pathways are groundwater, air (e.g. airborne dust or sound waves), or land (e.g. flow of liquids, vibration). The zone of effect for hydrological effects can be several kilometres, but for air and land it is rarely more than one hundred metres. The following pathways were considered:

- Surface water: there are no rivers or streams within or adjacent to the Site (refer to Section 2.1 and Figure 1)
- Groundwater: underlying subsoils / bedrock would filter pollutants to negligible concentrations before they could reach any designated sites
- Land: ruled out due to distance
- Air: ruled out due to distance

In summary, no pathways were identified between the Site and any designated sites.



4.3 Habitats and flora

Habitats were classified using *A Guide to Habitats in Ireland* (Fossitt, 2000). The abundance of individual species was recorded using the DAFOR scale: Dominant, Abundant, Frequent, Occasional or Rare. A habitat map is shown in Figure 2.

4.3.1 Phase 1 habitat survey

Hedgerow (WL1)

Former agricultural hedgerows line the western and north-western boundaries of the Site. These hedgerows are visible on 1st Edition Ordnance Survey Maps (created in 1829 – 1841), which means that they have been present at this location for at least 180 years.

The shrub layer is dominated by bramble *Rubus fruticosus* ag., with abundant hawthorn *Crataegus monogyna* and elder *Sambucus nigra*, frequent wych elm *Ulmus procera* and dog-rose *Rosa canina*, and occasional wild privet *Ligustrum vulgare*. Emergent trees include frequent sycamore *Acer pseudoplatanus* and ash *Fraxinus excelsior*, and occasional beech *Fagus sylvatica*. Ivy *Hedera hibernica* is dominant in the canopy, and hedge bindweed *Calystegia sepium* is locally-dominant. No ground flora is visible, likely due to shading from the dense shrub layer.

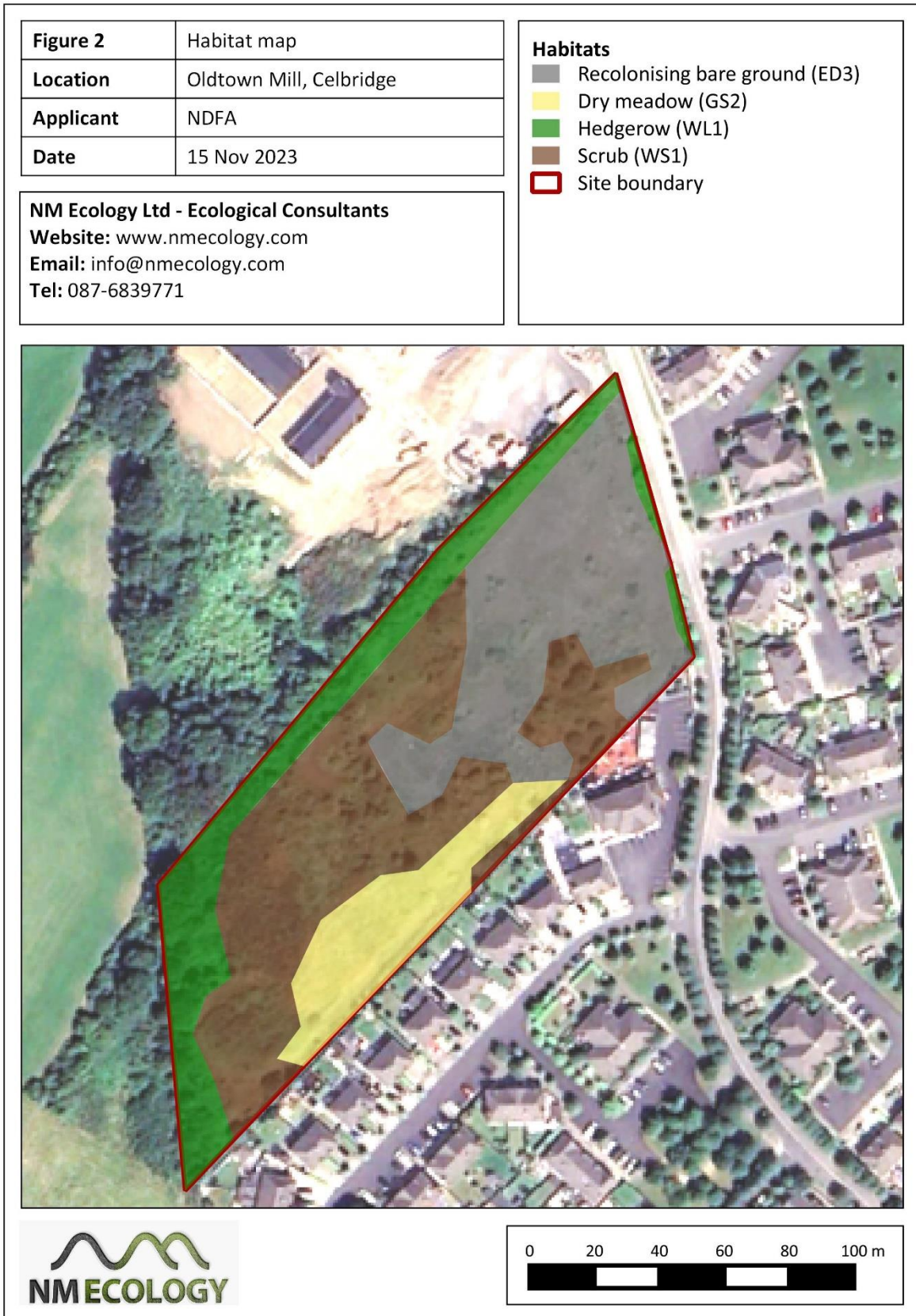
This habitat is common and widespread in agricultural areas, but due to the age of the hedgerow it is considered to be of Local ecological importance. It also has secondary value for fauna (refer to Section 4.4). It is noted that a large section of the northern hedgerow will be removed as part of an adjoining development (Section 5.1).

There is a separate hedgerow of cherry laurel *Prunus laurocerasus* and small-leaved lime *Tilia cordata* along the north-east boundary adjoining Oldtown Road. These species are non-native, so the hedgerow is of Negligible importance.

Scrub (WS1)

Mounds of building spoil were deposited in the south-western half of the Site between 2000 and 2005, and the ground has not been disturbed since that time, so large parts have been colonised by scrub. Bramble and / or nettle *Urtica dioica* are dominant in most places. Frequent species include cleavers *Galium aparine* and hedge bindweed, and great willowherb *Epilobium hirsutum* is occasional.

Some patches of scrub in the north-eastern half of the Site consist of shrubs and immature trees, including (in order of prevalence) butterfly-bush *Buddleja davidii*, Italian alder *Alnus cordata*, hawthorn, sycamore, rowan *Sorbus aucuparia*, ash, gorse *Ulex europaeus*, grey willow *Salix cinerea*, osier *Salix viminalis*, hazel *Corylus avellana* and silver birch *Betula pendula*.



All of the above species are common and widespread on abandoned / neglected land in suburban areas. The habitat has developed at the Site over the last ~ 20 years due to the absence of management. It is considered to be of Negligible botanical importance, but it may have secondary value for fauna (refer to Section 4.4).

Dry meadow (GS2)

This habitat has also formed on the mounds of spoil in the south-western half of the Site. It is dominated by Yorkshire-fog *Holcus lanatus* and / or false oat-grass *Arrhenatherum elatius*, with abundant creeping cinquefoil *Potentilla reptans* and creeping thistle *Cirsium arvense*. Nettle and hedge bindweed are locally abundant. Frequent species include common vetch *Vicia sativa*, great willowherb, red clover *Trifolium pratense* and beaked hawk's-beard *Crepis vesicaria*. Occasional species include dandelion *Taraxacum officinale*, and rare species (in the context of the DAFOR scale) include common hogweed *Heracleum sphondylium*, common mouse-ear *Cerastium fontanum* and broad-leaved dock *Rumex obtusifolius*.

All of the above species are common and widespread on abandoned / neglected land in suburban areas. The habitat has developed at the Site over the last ~ 20 years due to the absence of management. It is considered to be of Negligible botanical importance.

Recolonising bare ground (ED3)

The north-eastern half of the Site consists of soil / spoil that has been compacted by construction vehicles. It is understood that this area was used as a construction compound in the past. The compaction of the soil hinders the re-establishment of vegetation. In some places it has also impeded drainage, causing the formation of ephemeral pools and fragments of wetland. There is considerable variation in ground conditions, ranging from bare earth to full vegetation cover, but on average the vegetation cover is approx. 50%.

Locally-frequent species include colt's-foot *Tussilago farfara*, false oat-grass, beaked hawk's-beard, red valerian *Centranthus ruber*, creeping bent *Agrostis stolonifera*, red clover, oxeye daisy *Leucanthemum vulgare* and ribwort plantain *Plantago lanceolata*. Occasional species include bramble, selfheal *Prunella vulgaris*, yarrow *Achillea millefolium*, lesser trefoil *Trifolium dubium* and common ragwort *Jacobaea vulgaris*. Rare species (in the context of the DAFOR scale) include common centaury *Centaureum erythraea*, perforate St John's-wort *Hypericum perforatum* and garden lady's-mantle *Alchemilla mollis*.

In some areas the compaction of the soil has impeded drainage, causing the formation of shallow pools and pockets of wetland vegetation. These areas are ephemeral: water accumulates during periods of heavy rainfall, but they dry out during summer months. Mosses are dominant. Abundant species include common spike-rush *Eleocharis palustris*, cuckooflower *Cardamine pratensis* and glaucous sedge *Carex flacca*. Common club-rush *Schoenoplectus lacustris* is locally frequent. Occasional species include bulrush *Typha latifolia*, hard rush *Juncus inflexus* and hairy bitter-cress *Cardamine hirsuta*.

All of the above species are common and widespread on abandoned / neglected land in suburban areas. The habitat has developed due to the compaction of the soil and frequent disturbance over the last ~20 years. In the longer term these areas will develop into dry meadow and ultimately form scrub. For these reasons, the habitat is considered to be of Negligible importance.

4.3.2 *Rare or protected flora*

No rare or protected plants were encountered.

4.3.3 *Invasive plant species*

No Japanese Knotweed *Fallopia japonica* or any other invasive plant species listed on the third schedule of the *European Communities (Birds and Natural Habitats) Regulations 2011* were recorded within the Site.

Cherry laurel *Prunus laurocerasus* is a non-native shrub that can be highly invasive in woodland habitats. A hedgerow of immature cherry laurel was recorded along the north-eastern boundary of the Site. However, there is no sign that these plants have spread within the Site, so they are not considered to be invasive at present.

4.4 **Protected fauna**

4.4.1 *Terrestrial mammals*

No field signs of any mammals were observed during the site inspection. There are no waterbodies suitable for otters. The hedgerows around the boundary of the Site were searched for badger setts, mammal paths, latrines, etc, but none were found. The Site does not contain woodland habitat suitable for deer, red squirrels or pine martens. Therefore, the Site is of no importance for any of these species.

The hedgerows and scrub could potentially provide habitat for small mammals such as hedgehog, pygmy shrew and / or stoat. These species are shy and secretive, and do not leave distinctive field signs, so it is very difficult to confirm their presence or absence. Therefore, based solely on the suitability of habitats within the Site, we consider it likely to be of Local importance for at least one of the species listed above. All three species are protected under the *Wildlife Act 1976* (as amended).

4.4.2 *Bats*

Bats are common and widespread in Ireland. During the day they roost in buildings, bridges and mature trees. At night they forage around wetlands (lakes, rivers, swamps), woodland and hedgerows. They typically avoid urban areas (particularly areas with artificial lighting) and open habitats such as grasslands.

Potential roost features

There are no buildings, bridges or other built structures within the Site. Buildings around the margins of the Site are modern and illuminated by streetlights, so they are unsuitable for roosting bats. No cavities, crevices or other potential roost features were identified on any of the mature trees. Therefore, the Site and its immediate surroundings are of Negligible importance for roosting bats.

Foraging / commuting habitat

The hedgerow and scrub within the Site was considered to be suitable foraging habitat for bats, so a bat activity survey was carried out. The survey took place on the 7th of September, which is within the season of peak foraging activity for bats (typically May to September, inclusive). Weather conditions were ideal for a bat survey: 22 °C sunset temperature, dry, and with no wind.

Soon after sunset a single Leisler's bat flew low and fast through the Site making social calls. It was not directly observed, but its echolocation was recorded. This bat is considered likely to have been commuting from a roost in the broader surroundings (although not within the Site).

Foraging activity during the remainder of the survey was relatively low. There were occasional passes of Leisler's bats feeding in open air approx. 30 – 40 m above the Site, and two common pipistrelle passes were recorded near the north-eastern corner of the Site. No bats were recorded in the remainder of Site.

Streetlights along Oldtown Road caused some indirect illumination of the eastern edge of the Site, but the remainder of the Site was in almost complete darkness. Therefore, artificial lighting would not explain the low levels of bat activity within the Site.

In summary, a bat activity survey during the recommended survey season and in ideal weather conditions recorded only occasional activity by common bat species. Therefore, the Site is considered to be of Negligible importance for foraging / commuting bats.

4.4.3 *Birds*

There are no Special Protection Areas in the surrounding area, so there is no risk that any associated bird species could the Site.

Some common countryside birds were observed during the surveys, including rook, magpie, jackdaw, woodpigeon, blackbird, robin and wren. No species of conservation importance were recorded. Abandoned agricultural land is rarely of importance for any birds of conservation importance. Therefore, the Site is of Negligible importance for bird species.

However, it is noted that birds and their nests are protected under the Wildlife Act 1976 (as amended). The hedgerow and scrub habitats would be suitable for nesting birds.

4.4.4 *Fish and aquatic fauna*

There are no waterbodies in the vicinity of the Site, so it is of no importance for fish or other aquatic fauna.

4.4.5 *Reptiles and amphibians*

No reptiles or amphibians were observed during the survey, nor any ponds or other permanent wetland features suitable for breeding. Therefore, the Site is of Negligible importance for these taxa.

4.4.6 *Terrestrial invertebrates*

The habitats within the Site are common in rural / suburban landscapes in Ireland, so it is considered to be of Negligible importance for invertebrates.

4.5 **Potential limitations and information gaps**

The site inspections were carried out in the ideal survey season for most flora and fauna, so the assessment is not considered to have any information gaps.

4.6 **Identification of important ecological features**

Table 3 provides a summary of all ecological features identified on the Site, including their importance and legal status. For the purposes of this impact assessment, any features that are of Local ecological importance, or that receive legal protection, are considered to be 'important ecological features', and will be addressed in the impact assessment.

Ecological feature	Importance	Legal status	Important feature?
Designated sites	N.A.	HR, WA	No
Hedgerows (WL1)	Local	-	Yes
Scrub (WS1)	Negligible	-	No
Dry meadows and grassy verges (GS2)	Negligible	-	No
Recolonising bare ground (ED3)	Negligible	-	No
Rare / protected flora	N.A.	-	No
Invasive plant species	N.A.	-	No
Small mammals (hedgehog, stoat, pygmy shrew)	Local	WA	Yes
All other terrestrial mammals	Negligible	-	No

Ecological feature	Importance	Legal status	Important feature?
Bats	Negligible	-	No
Birds (including nesting habitat)	Negligible	WA	Yes
Fish and aquatic fauna	N.A.	-	No
Reptiles and amphibians	Negligible	-	No
Invertebrates	Negligible	-	No

* HR – EC (*Birds and Natural Habitats*) Regulations 2011; WA – Wildlife Act 1976

In summary, the important ecological features identified in this assessment are hedgerows, small mammals and nesting birds. Potential impacts on these features are considered in Section 5.

All other ecological features discussed in Section 4 are considered to be of Negligible ecological importance, so they are not listed as Important Ecological Features. This does not mean that they will not be affected by the proposed development: the proposal will require the clearance of large areas of scrub and dry meadow vegetation. It simply means that the features are sufficiently common and widespread that their loss would not be considered significant in the context of an Ecological Impact Assessment.

5 Predicted Impacts of the Proposed Development

5.1 Removal of hedgerow habitat

The hedgerow on the western boundary will be retained and incorporated into the proposed development. The northern end of the hedgerow will be incorporated into the public open space near the detention basin, and the southern end of the hedgerow will form the western boundary of unit 60. Root protection zones will be installed around these trees and shrubs to prevent inadvertent damage during construction works.

The majority of the north-western hedgerow will be removed as part of the residential development to the north of the Site (Section 3.2, planning reference 191282); the relevant section of hedgerow is shown in red in Figure 3. Therefore, although this section of hedgerow was present when ecological surveys were carried out in June 2023, it will no longer be present when the proposed development commences construction.

A remaining fragment of hedgerow at the northern end of the north-western hedgerow (approx. 50 m in length) will be removed for the proposed development (shown in blue in Figure 3). It is noted that a new native hedgerow will be planted just to the north of the removed hedgerow as part of development 191282.



Figure 3. The red marker indicates the section of hedgerow that will be removed as part of planning reference 191282 (refer to Section 5.1), and the blue marker shows the section that will be removed for the proposed development

In summary, the majority of remaining hedgerow within the Site will be retained, and only a small section will be removed. The landscaping scheme for the proposed development will involve the planting of a range of trees and shrubs, which will compensate for the loss of 50 m of fragmented hedgerow. On balance, this compensatory planting will result in a neutral effect on hedgerow habitat.

5.2 Disturbance of breeding birds and mammals

It is possible that birds and / or small mammals (e.g. hedgehog) could breed in some of the trees and shrubs proposed for removal. If trees and shrubs were cut during the bird nesting season (usually between March and August, inclusive), it is possible that active nests could be destroyed. The breeding season for small mammals is approximately the same. The killing of any birds or small mammals, or the disturbance of their breeding / resting places, would constitute an offence under the *Wildlife Act 1976* (as amended).

5.3 Biodiversity enhancement measures

The *Landscape and Biodiversity Plan* for the proposed development (prepared by Mitchell & Associates, 2024) includes some biodiversity-enhancement measures that will be implemented as part of the landscaping scheme, including:

- Retention and management of the hedgerow on the western boundary of the Site. The retained hedgerow will be trimmed every 2 – 5 years, cutting no more than 66% of the hedgerow in any year to retain some fruits for birds

- Planting of native trees and shrubs in landscaped areas, including rowan *Sorbus aucuparia*, pedunculate oak *Quercus robur*, bird cherry *Prunus padus*, crab-apple *Malus sylvestris* and hazel *Corylus avellana*
- Planting of native wetland vegetation in the surface-water detention basin in the west of the Site
- Creation of meadows in the south-west of the Site
- Swales will also be managed as meadows, and will include check dams (typically large rocks), and filter strips planted with broadleaved trees
- Installation of nest boxes for swifts, swallows and house martins on the apartment building
- Provision of a hedgehog box in the retained hedgerow on the western boundary of the site
- Provision of small openings (13 x 13 cm) at the western boundary fence and in fences between private gardens to provide access for small mammals

These measures will partly compensate for removal of existing habitats (hedgerow, scrub and dry meadow) of the proposed development. They will also introduce some habitats that are not currently present at the Site, notably the detention basin with wetland vegetation.

5.4 Potential cumulative / in-combination impacts

The development to the north of the Site (planning reference 191282) will involve the removal of some hedgerow on the shared boundary, as outline in Section 5.1. When the total quantity of hedgerow removal within the Site and adjoining development is considered, compensated by the landscaping proposals for each development, the overall effects are also considered to be neutral.

The only other potential ecological impact from the proposed development is impacts on breeding birds and small mammals. This can be fully avoided using best-practice mitigation measures, as outlined in Section 6. On this basis, we conclude that there is no risk of cumulative impacts from the two developments.

6 Proposed mitigation measures

6.1 Protection of birds and small mammals during site clearance works

Under Sections 22 and 23 of the *Wildlife Act 1976* (as amended), it is an offence to kill or injure a protected bird or mammal, or to disturb their breeding / resting places. Most birds nest between March and August (inclusive), and the breeding season for most small mammals is similar. Therefore, it is strongly recommended that site clearance works are carried out between September and February (inclusive), i.e. outside the nesting season. If this is not possible, an ecologist will survey the affected areas in advance in order to assess whether any breeding birds or mammals are present. If any are encountered, vegetation

clearance will be delayed until the breeding attempt has been completed, i.e. after chicks have fledged and a nest has been abandoned.

7 Residual Impacts

The majority of remaining hedgerow within the Site will be retained, except for approx. 50 m of fragmented hedgerow at northern end of the north-western boundary. The loss of this hedgerow will be compensated by the landscaping scheme for the Site, which will involve planting of hedgerow, orchards and street trees, resulting in a neutral effect on hedgerow habitat.

The proposed development will involve the removal of large areas of scrub and dry meadow in the centre of the Site. These habitats are considered to be of Negligible ecological importance because they consist of plant species that are common and widespread, and because they have formed in the last 20 years due to the cessation of management at the Site. The removal of habitats of Negligible ecological importance is not considered to be a significant impact in the context of an Ecological Impact Assessment. However, when the baseline habitats are compared with the development layout there will inevitably be a net loss of biodiversity at the Site.

The loss of these habitats will be partly compensated by the landscaping scheme for the proposed development, which will include a detention basin (planted with wetland vegetation), trees, shrubs and meadows.

Site clearance works will take place outside the season of peak breeding activity in birds and mammals, or the area will be surveyed by an ecologist to confirm that no protected fauna are present. This will avoid any direct impacts on breeding birds or small mammals, and prevent a legal offence under the *Wildlife Act 1976* (as amended).

Subject to the successful implementation of these measures, it can be concluded that the proposed development will not cause any significant negative impacts on designated sites, habitats, legally protected species, or any other features of ecological importance.

8 References

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