

# Screening Report for Appropriate Assessment for housing project in Adare, Limerick

Compiled by OPENFIELD Ecological Services

Pádraic Fogarty, MSc MIEMA

for Limerick City and County Council



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## Introduction

Biodiversity is a contraction of the words 'biological diversity' and describes the enormous variability in species, habitats and genes that exist on Earth. It provides food, building materials, fuel and clothing while maintaining clean air, water, soil fertility and the pollination of crops. A study by the Department of Environment, Heritage and Local Government placed the economic value of biodiversity to Ireland at €2.6 billion annually (Bullock et al., 2008) for these 'ecosystem services'.

All life depends on biodiversity and its current global decline is a major challenge facing humanity. In 1992, at the Rio Earth Summit, this challenge was recognised by the United Nations through the Convention on Biological Diversity which has since been ratified by 193 countries, including Ireland. Its goal to significantly slow down the rate of biodiversity loss on Earth has been echoed by the European Union, which set a target date of 2010 for *halting* the decline. This target was not met but in 2010 in Nagoya, Japan, governments from around the world set about redoubling their efforts and issued a strategy for 2020 called 'Living in Harmony with Nature'. In 2011 the Irish Government incorporated the goals set out in this strategy, along with its commitments to the conservation of biodiversity under national and EU law, in the second national biodiversity action plan (Dept. of Arts, Heritage and the Gaeltacht, 2011). A third plan was published in 2017.

The main legislation for conserving biodiversity in Ireland have been the Directive 2009/147/EC of the European Parliament and of the Council of November 2009 on the conservation of wild birds (Birds Directive) and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive). Among other things, these require member states to designate areas of their territory that contain important bird populations in the case of the former; or a representative sample of important or endangered habitats and species in the case of the latter. These areas are known as Special Protection Areas (SPA) and Special Areas of Conservation (SAC) respectively. Collectively they form a network of sites across the European Union known as Natura 2000. The Birds and Habitats Directives have been transposed into Irish legislation by the European Communities (Birds and Natural Habitats) Regulations 2011-2015. A report into the economic benefits of the Natura 2000 network concluded that "there is a new evidence base that conserving and investing in our biodiversity makes sense for climate challenges, for saving money, for jobs, for food, water and physical security, for cultural identity, health, science and learning, and of course for biodiversity itself" (EU, 2013).

Unlike traditional nature reserves or national parks, Natura 2000 sites are not 'fenced-off' from human activity and are frequently in private ownership. It is the responsibility of the competent national authority to ensure that 'good conservation status' exists for their SPAs and SACs and specifically that Article 6(3) of the Habitats Directive is met. Article 6(3) states:

*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

Sections 177U and 177V of the Planning and Development Act 2000 sets out the purpose of AA Screening is as follows:

*A screening for appropriate assessment shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.*

The test at stage 1 AA Screening is that:

*The competent authority shall determine that an appropriate assessment of a proposed development is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.*

The test at stage 2 (Appropriate Assessment) is:

*Whether or not the proposed development, individually or in-combination with other plans or projects would adversely affect the integrity of a European site.*

However, where this is not the case, a preliminary screening must first be carried out to determine whether or not a full AA is required. This screening is carried out by Limerick City and County Council.

### The Purpose of this document

This document provides for the assessment of a proposed residential housing development . and its potential effects in relation to Natura 2000 sites (SACs and SPAs). Under the Planning and Development Act 2000 (as amended), and the Birds and Natural Habitats Regulations 2011, the planning authority cannot grant planning permission where significant effects may arise to a Natura 2000 area. In order to make that decision the development must first be screened for AA.

It should be noted that under Article 42(1) of the aforementioned legislation it is the relevant competent authority, in this case Limerick City and County Council, which carries out any AA or screening for AA, stating:

*A screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.*

While paragraph (2) states:

*A public authority shall carry out a screening for Appropriate Assessment under paragraph (1) before consent for a plan or project is given, or a decision to undertake or adopt a plan or project is taken.*

This document therefore aids in the decision-making process.

### About OPENFIELD Ecological Services

OPENFIELD Ecological Services is headed by Pádraic Fogarty who has worked for over 20 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. Since its inception in 2007 OPENFIELD has carried out numerous EclAs for Environmental Impact Assessment (EIA), Appropriate Assessment in accordance with the EU Habitats Directive, as well as individual planning applications. Pádraic is a full member of the Institute of Environmental Management and Assessment (IEMA).

### Methodology

The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled 'Assessment of plans and projects significantly affecting Natura 2000 sites 'Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (Oxford Brookes University, 2001). Chapter 3, part 1, of the aforementioned document deals specifically with screening while Annex 2 provides the template for the screening/finding of no significant effects report matrices to be used.

In accordance with this guidance, the following methodology has been used to produce this screening statement:

#### **Step 1: Management of the Natura 2000 site**

This determines whether the project is necessary for the conservation management of the site in question.

**Step 2: Description of the Project**

This step describes the aspects of the project that may have an impact on the Natura 2000 site.

**Step 3: Characteristics of the Natura Site**

This process identifies the conservation objectives of the site and determines whether significance effects to Natura 2000 sites will arise as a result of the plan. This is done through a literature survey and consultation with relevant stakeholders – particularly the National Parks and Wildlife Service (NPWS). All potential effects are identified including those that may act alone or in combination with other projects or plans.

Using the precautionary principle, and through consultation and a review of published data, it is normally possible to conclude at this point whether potential impacts are likely. Deficiencies in available data are also highlighted at this stage.

**Step 4: Assessment of Significance**

Assessing whether an effect is significant must be made in light of the conservation objectives for that SAC or SPA.

A full AA of a proposed development is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

The steps are compiled into a screening matrix, a template of which is provided in Appendix II of the EU methodology.

Reference is also made to guidelines for Local Authorities from the Department of the Environment, Heritage and Local Government (DoEHLG, 2009).

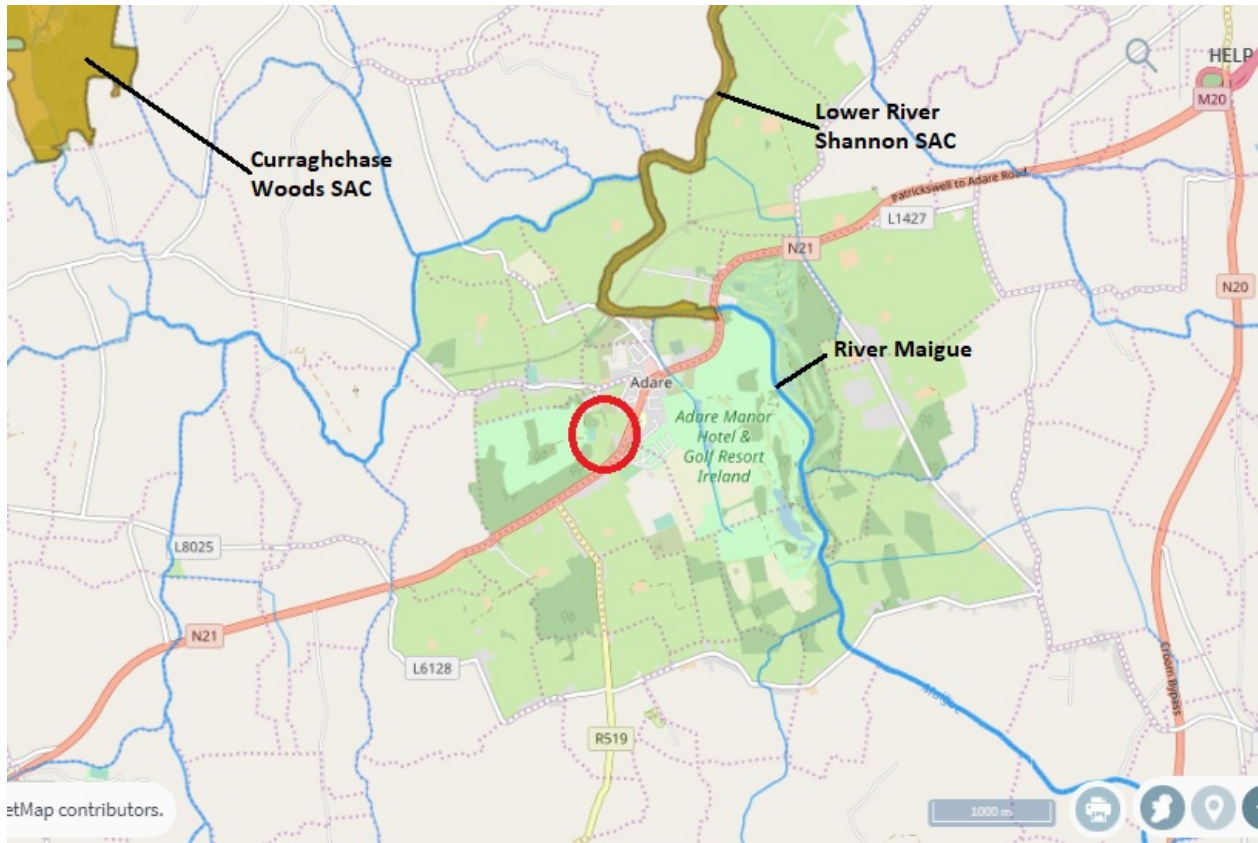
A full list of literature sources that have been consulted for this study is given in the References section to this report while individual references are cited within the text where relevant.

### Screening Template as per Annex 2 of EU methodology:

This project is not necessary for the management of the site and so Step 1 as outlined above is not relevant.

### **Brief description of the proposed project**

It is proposed to construct 31 new homes in the town of Adare, County Limerick. The site is currently in agricultural and amenity use. The location is shown in figures 1 & 2.



**Figure 1 – Site location (red circle). The boundaries of SACs are shown in tan (from [www.epa.ie](http://www.epa.ie))**

The proposed housing development will be spread over two separate areas on a greenfield site located on the southwestern approach to Adare town with each area being accessed independently off the N21. Originally part of Deerpark, an established woodland, the southern end of the site (Area 2) includes a stone faced boundary wall and existing entrance point off the N21. The narrow plot to the North of the site (Area 1) extends from the Deerpark site proper to the N21 opposite the primary school, Scoil Naomh Iosaf. A carpark and attenuation tank are currently constructed to the eastern end of Area 01 as part of the N21 Adare Western Approach Improvement Scheme. This carpark is to be reconfigured to provide for a new entrance point and road network that will service the proposed housing scheme and provide access to other backlands while accommodating the same number of car parking spaces. The land falls towards the eastern boundary, includes a number of mature oak trees spread intermittently

throughout, and to the northern edge is in close proximity to a playing field, an existing small housing estate and an overgrown lime kiln.

The site is not located within or directly adjacent to any Natura 2000 area. Within the vicinity of the site there is one such area: the estuary of the River Maigue, which falls within the Lower River Shannon SAC. The Curraghchase SAC is designated for its population of Lesser Horseshoe Bat (among other things) and because this bat can forage over land beyond the boundary of the SAC it is considered prudent to include this area within the zone of influence. The Maigue Estuary is also included within the River Shannon and River Fergus Estuaries SPA and so this area may also fall within the zone of influence.

Historic mapping shows the site to be within the confines of the former Deerpark estate while recent aerial photography shows that significant areas of woodland remain in the vicinity. The site was visited for this study on June 6<sup>th</sup> 2016, within the optimal season for general habitat survey (Smith et al., 2010). Habitats were identified in accordance with the standard classification system (Fossitt, 2000). It found that much of the land can be described as a combination of **amenity grassland – GA2** and **improved agricultural grassland – GA1** highly modified habitats of low biodiversity value.

Some grassland areas are not being grazed or farmed and this is a combination of **scattered trees – WD5**, mostly mature Oak *Quercus sp.*, and **scrub – WS1**. In this case scrub is mostly dense Brambles *Rubus fruticosus agg.* and Gorse *Ulex europaeus* although areas within this could also be described as **dry meadow – GS2**. This is characterised by abundant grasses and broad-leaved herbs such as Buttercups *Ranunculus sp.*, Vetches *Vicia sp.*, Docks *Rumex sp.* etc.

**Broadleaved woodland – WD1** can be found in two locations. Tall trees include Oak, Ash *Fraxinus excelsior* and Beech *Fagus sylvatica*, with Hawthorn *Crataegus monogyna* Sycamore *Acer pseudoplatanus* and Hazel *Corylus avellana*. At ground level woodland specialist plants include Enchanter's Nightshade *Circaea lutetiana*, Hairy Sedge *Carex hirta* and Primrose *Primula vulgaris*.

**Hedgerows – WL1** form boundary features in places and these are mostly composed of Hawthorn along with Blackthorn *Prunus spinosa*, Holly *Ilex aquifolium*, Brambles and Elder. These are not townland boundary hedges and are not shown on original OS maps and so cannot be considered to be of great age. The relatively low species diversity means these hedges are considered to be of 'lower significance' (Foulkes et al., 2013).

The habitats in the site boundary are not associated with any that are listed on Annex I of the Habitats Directive. Mature Oaks and broadleaved woodland are considered of high local value in general biodiversity terms although 'lower significance' native hedgerows have low local value (NRA, 2009). These features are suitable for foraging and (in mature trees) roosting bats. The Lesser Horseshoe Bat is known from this region and is listed on Annex II of the Habitats Directive. All bat species are listed under Annex IV of the Habitats Directive as well as the Wildlife Act (as amended) 2000. As such they are afforded strict protection under law.

There are no water courses on the site and no plants listed as alien invasive in Schedule 3 of SI 477 of 2011. Habitats are superimposed on the site boundary in figure 2.

According to the [www.wfdireland.ie](http://www.wfdireland.ie) website, the site does not lie within the catchment of any significant river, although the direction of drainage is towards the estuary of the River Maigue. The town is serviced by a wastewater treatment plant and this too discharges treated effluent into the Maigue. The freshwater portion of the River Maigue is not within any area designated under the Natura 2000 system. Where the river is tidally influenced, from west of the N21 bridge, it falls within the Lower River Shannon SAC. Further north still, where the N69 road cross the Maigue, the estuary falls within the River Shannon and River Fergus Estuaries SPA. There is consequently a hydrological connection between the site and these two Natura areas.

New housing on these sites will increase the loading to the local municipal wastewater treatment plant. Changing the land use from open grassland to hard surfaces can also result in changes to the quality and quantity of surface water run-off. Some habitats on the site are of high value to biodiversity and are likely to provide foraging or roosting opportunities for bats. Spoil waste from the construction phase will be taken off site by a contractor licenced under the Waste Management Act. During the operation phase of the development there will be artificial lighting and increased human disturbance.

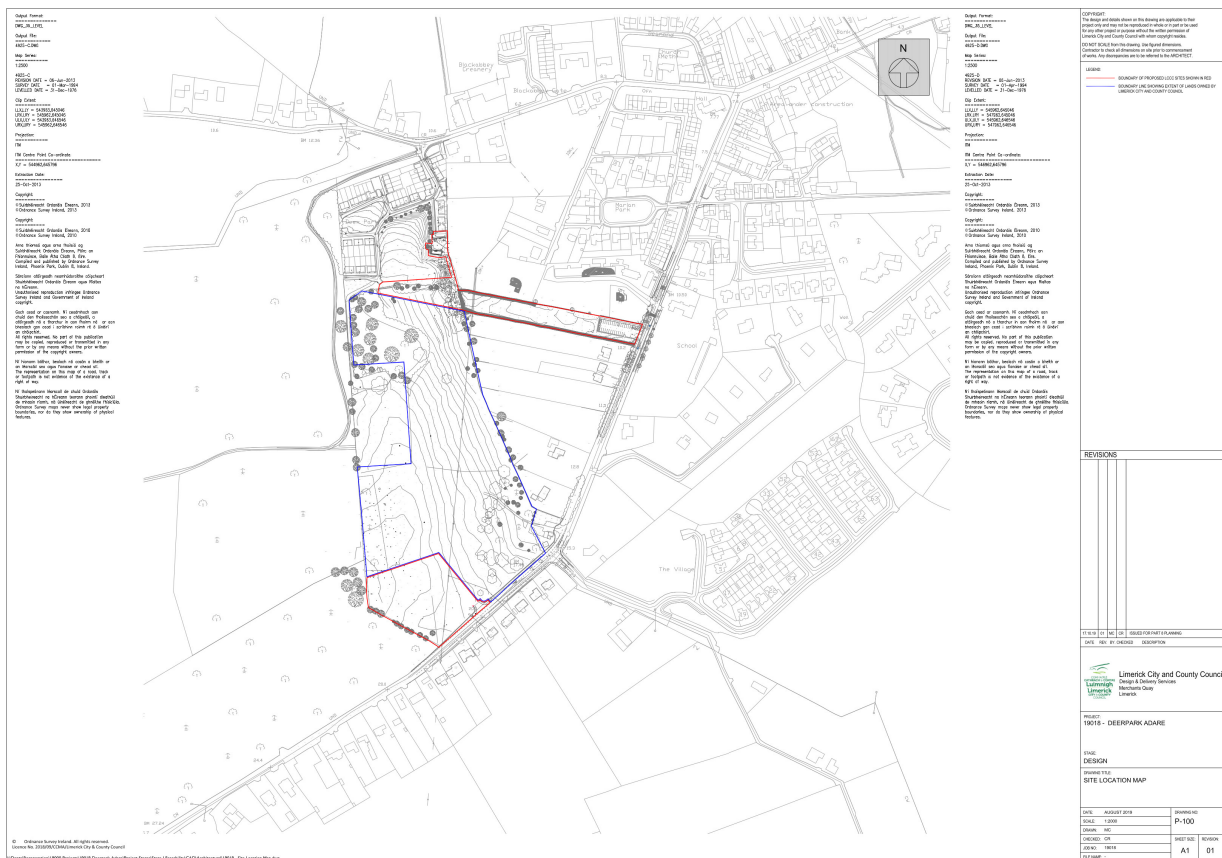


Figure 2 – Site boundary





Figure 3 – Proposed site layout

### Brief description of Natura 2000 sites

In assessing the zone of influence of this project upon Natura 2000 sites the following factors must be considered:

- Potential impacts arising from the project
- The location and nature of Natura 2000 sites
- Pathways between the development and the Natura 2000 network

As can be seen in figures 1 & 2 the site is not within or directly adjacent to any Natura 2000 area. However the site is within the catchment of the River Maigue, the estuary of which is within the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA. The areas are connected by the flow of surface and wastewater. The Curraghchase Woods SAC lies approximately 5.7km to the north-west and because of its population of Lesser Horseshoe Bats a precautionary approach is adopted and it is included within the zone of influence. These are the only Natura 2000 areas considered to fall within the zone of influence of this project.

**Curraghchase Woods SAC (site code: 0174)** is composed of mixed woodlands and wetlands. It is a popular amenity area and is designated as an SAC for three features: Alluvial Forests, Yew Woodlands and the Lesser Horseshoe Bat.

- **Alluvial Wet Woodland (91E0 – priority habitat):** This is a native woodland type that occurs on heavy soils, periodically inundated by river water but which are otherwise well drained and aerated. The main pressures are identified as alien invasive species, undergrazing and overgrazing. Pollution from agricultural land may also be significant.
- **Yew Woodland (91J0 – priority habitat):** This is a highly restricted woodland type and occurs at only a handful of sites in Ireland. It is predominantly associated with yew dominated woodland on very thin soils. The heavy shading of these evergreen trees severely limits the development of understory plants.
- **Lesser Horseshoe Bat (1303).** Ireland is considered to be a stronghold for this bat which here is at the western extremity of its range. It roosts in attics and derelict buildings during summer while in winter it hibernates in caves and souterrains.

With regard to the bats a site synopsis of the SAC states:

“One of the main interests at the site is the presence of a hibernation site of the Lesser Horseshoe Bat. The bats hibernate in the cellars of the former mansion Curraghchase House. The entrance to the cellar is now grilled and all other access points blocked to prevent disturbance. In recent years bats have remained within the cellar throughout the year. In winter 1995/96 more than 60 bats were recorded in the hibernation site, rating the site of international importance. It is considered that the number of bats will increase now that the site is protected from disturbance. This is the largest known site for this species in Co. Limerick.” (NPWS, 2013a).

The **Lower River Shannon SAC (site code: 2165)** is a very large SAC that stretches from Killaloe to Loop head/Kerry head and is over 720 km<sup>2</sup> in area. The reasons why this area falls under the SAC designation are set out in its qualifying interests. They are either habitat types listed in Annex I or species listed in Annex II of the Habitats Directive. This information is provided by the National Parks and Wildlife Service (NPWS) and is shown in table 1 below along with the status of the feature at a national level (NPWS, 2019). This status refers to the most recent reporting period to the European Commission under Article 17 of the Habitats Directive.

**Table 1 – Qualifying interests for the Lower River Shannon SAC (from NPWS)**

Code	Habitats	Status
1130	Estuaries	Inadequate
1140	Mudflats and sandflats not covered by seawater at low tide	Inadequate
1150	Coastal lagoons	Bad
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts	Inadequate
1310	Salicornia and other annuals colonizing mud and sand	Favourable
1330	Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )	Inadequate
1410	Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )	Inadequate
3260	Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation	Inadequate
1110	Sandbanks which are slightly covered by sea water all the time	Favourable
1160	Large shallow inlets and bays	Bad
1170	Reefs	Bad
1220	Perennial vegetation of stony banks	Inadequate
6410	<i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinion caeruleae</i> )	Bad
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> )	Bad
1099	<i>Lampetra fluviatilis</i> River lamprey	Unknown
1096	<i>Lampetra planeri</i> Brook lamprey	Good
1095	<i>Petromyzon marinus</i> Sea lamprey	Bad
1106	<i>Salmo salar</i> Atlantic salmon	Inadequate
1349	<i>Tursiops truncatus</i> Bottle-nosed dolphin	Good
1355	<i>Lutra lutra</i> Otter	Good
1029	<i>Margaritifera margaritifera</i> Freshwater pearl mussel	Bad

- **Sandbanks (1110):** These are marine habitats composed of banks or ridges of soft sediment in less than 20m of water. They are highly dynamic habitats, being subject to continuous wave and tidal actions, and can be home to a diverse assemblage of marine species.
- **Estuary (1130):** This is the portion of a river that is influenced by the tide but retaining a significant freshwater influence. Substrates can range from rocks and boulders, to expanses of fine mud and sand. They are an important resource for birds and other fauna and many estuaries have twin designations (i.e. both SAC and SPA). It considered that the majority of estuary habitat is in good condition however approximately a quarter is

negatively affected by excess nutrient input and damaging fishing practices.

- **Tidal mudflats (1140)**. This is an intertidal habitat characterised by fine silt and sediment. Most of the area in Ireland is of favourable status however water quality and fishing activity, including aquaculture, are negatively affecting some areas.
- **Coastal lagoons (1150)** (and a priority habitat) are brackish water bodies typically separated from the sea by a tidal barrier and with limited tidal range. In Ireland they are defined by their biological communities rather than their morphology. The greatest threat to their integrity is considered to be from nutrient pollution causing eutrophication.
- **Large shallow inlets and bays (1160)**: These are marine or intertidal habitats that have reduced freshwater influence (in contrast to estuaries). They can occur in association with a number of other Annex I habitat types and are of value to marine biodiversity including mammals and seabirds.
- **Vegetated sea cliffs (1230)** These coastal habitats can be composed of hard or soft material which in turn influences the rate at which erosion occurs. Vegetation can be sparse but composed of a variety of specially adapted species.
- **Salicornia mudflats (1310)**: This is a pioneer saltmarsh community and so is associated with intertidal areas. It is dependant upon a supply of fresh, bare mud and can be promoted by damage to other salt marsh habitats. It is chiefly threatened by the advance of the alien invasive Cordgrass *Spartina anglica*. Erosion can be destructive but in many cases this is a natural process.
- **Atlantic and Mediterranean salt meadows (1330 & 1410)**: these are intertidal habitats that differ somewhat in their vegetation composition. They are dynamic habitats that depend upon processes of erosion, sedimentation and colonisation by a typical suite of salt-tolerant organisms. The main pressures are invasion by the non-native *Spartina anglica* and overgrazing by cattle and sheep.
- **Floating river vegetation (3260)**: There is currently no satisfactory definition of this habitat type in Ireland and it is considered broad, encompassing all rivers. The NPWS says that “the main problems for river habitats in Ireland are damage through eutrophication and other processes linked to water pollution, rather than direct habitat loss and destruction.”
- **Molinea meadows (6410)** *Molinea caerulea*, the Purple Moorgrass, is typically associated with upland peatland habitats but this habit type occurs on lowland sites associated with traditional agricultural practices. The main threats that it faces are associated with changes in land use, e.g. land abandonment or intensification.
- **Alluvial Wet Woodland (91E0)**: This is a native woodland type that occurs on heavy soils, periodically inundated by river water but which are otherwise well drained and aerated. The main pressures are identified as alien invasive species, undergrazing and overgrazing. Pollution from agricultural land may also be significant.
- **Freshwater pearl mussel (1029)** This is one of the most threatened species in Ireland and one of a small number that is listed on the International Union for the Conservation of Nature’s (IUCN) red list.

Although it is long-lived, its populations have not reproduced in many years. This has been due to over-extractions for their pearls and more recently by dramatic deteriorations in water quality. Freshwater pearl mussels need exceptionally high quality water for breeding and depend upon another threatened species, the Atlantic salmon, for part of its life cycle.

- **Sea lamprey (1095)** This is an anadromous species of jawless fish. Their population densities are considered low in many catchments and are negatively affected by barriers to migration, such as weirs, dams etc. Pollution and drainage works are also identified as threats to its conservation status.
- **Brook and river lamprey (1096 & 1099):** These species are similar to the sea lamprey although they spend their entire life cycle in freshwater and are considerably smaller. As juveniles they are indistinguishable at the species level and are only differentiated by their size at adults. Since surveys are carried out on the juvenile life stage the two species are jointly assessed. Although threatened by pollution, along with all aquatic life, they are assessed as being of 'good' status.
- **Atlantic salmon (1106)** This once abundant fish has suffered a dramatic decline in recent decades. On land they are threatened by pollution and barriers to migration while at sea mortality may occur through industrial fisheries, parasites from aquaculture operations and climate change. The Habitats Directive only protects the salmon in its freshwater habitat and here specific conservation objectives have been set for water quality. Salmon will only spawn in clean, sediment-free beds of gravel.
- **Otter (1355)** This aquatic mammal lives its entire life in and close to wet places, including rivers, lakes and coastal areas. They will feed on a wide variety of prey items. Despite local threats from severe pollution incidents and illegal fishing, its population is considered stable and healthy, and so is assessed as being of 'good' status.
- **Bottle-nosed dolphin (1349).** These well recognised mid-sized cetaceans are found through tropical and temperate seas and are well recorded in the waters around Ireland. They can be transient although some populations, such as that in the Shannon estuary, are considered resident.

The **River Shannon and River Fergus Estuaries SPA (site code: 4077)** collectively form the largest expanse of intertidal mudflats in Ireland. SPAs are designated for their internationally important species (listed on Annex I of the Birds Directive) or population sizes (>1% of the global population or >20,000 individuals). Most recent available data indicate that a mean of 10,235 birds utilised the area during the winters from 2006-11 (Crowe et al., 2012).

**Table 2 – Features of interest for the River Shannon and River Fergus SPA**

Species	Status <sup>1</sup>
Light-bellied Brent Goose <i>Branta bernicla hrota</i>	Amber (Wintering)
Pintail <i>Anas acuta</i>	Red (Wintering)

<sup>1</sup> Colhoun & Cummins, 2013. *Birds of Conservation Concern in Ireland 2014-2019*

Scaup	<i>Aythya marila</i>	Amber (Wintering)
Shoveler	<i>Anas clypeata</i>	Red (Wintering)
Ringed Plover	<i>Charadrius hiaticula</i>	Green
Golden plover	<i>Pluvialis apricaria</i>	Red (Breeding & Wintering)
Grey Plover	<i>Pluvialis squatarola</i>	Amber (Wintering)
Lapwing	<i>Vanellus vanellus</i>	Red (Breeding & Wintering)
Knot	<i>Calidris canutus</i>	Amber (Wintering)
Dunlin	<i>Calidris alpina</i>	Red (Breeding & Wintering)
Bar-tailed Godwit	<i>Limosa lapponica</i>	Amber (Wintering)
Black-tailed Godwit	<i>Limosa limosa</i>	Amber (Wintering)
Redshank	<i>Tringa totanus</i>	Red (Breeding & Wintering)
Greenshank	<i>T. nebularia</i>	Green
Black-headed Gull	<i>Croicocephalus ridibundus</i>	Red (Breeding)
Whooper Swan	<i>Cygnus cygnus</i>	Amber (Wintering)
Shelduck	<i>Tadorna tadorna</i>	Amber (Breeding & Wintering)
Wigeon	<i>Anas penelope</i>	Red (Wintering)
Teal	<i>Anas crecca</i>	Amber (Breeding & Wintering)
Cormorant	<i>Phalacrocorax carbo</i>	Amber (Breeding & Wintering)
Curlew	<i>Numenius arquata</i>	Red (Breeding & Wintering)
Wetlands & Waterbirds		

This includes internationally important numbers of Mute swan *Cygnus olor* and Whooper swan *C. cygnus* and nationally important numbers of Shelduck *Tadorna tadorna*, Wigeon *Anas penelope*, Teal *A. crecca*, Cormorant *Phalacrocorax carbo*, Dunlin *Charadrius alpina*, Black-tailed godwit *Limosa limosa* and Curlew *Numenius arquata*. The SPA's features of interest (analogous to qualifying interests for SACs) are given in table 2. The status given is from a national assessment and does not infer status within the SPA itself.

Whether the integrity of the SACs or SPA is likely to be significantly affected must be measured against its 'conservation objectives'. Specific conservation objectives have been set for both the SAC and SPA associated with the Shannon estuary (NPWS, 2012a & b). In the SAC objectives relate to habitat area, community extent, community structure and community distribution within the qualifying interests for habitats. In the SPA conservation objectives for each feature of interest (i.e. species of bird) is given as:

1. Population trend: long term population trend stable or increasing
2. Distribution: no significant decrease in the range, timing or intensity of use [...] other than that occurring from natural patterns of variation.

There is no objective in relation to water quality. Water quality is an objective in relation to a number of the species for which the SAC is designated including the Freshwater Pearl Mussel and the Atlantic Salmon.

Generic conservation objectives are available for the Curraghchase Woods SAC (NPWS, 2015b). Conservation objectives follow basic principles in order to achieve or maintain favourable conservation condition for the habitat or species in question:

In a generic sense 'favourable conservation status' of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long - term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

While the 'favourable conservation status' of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long - term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long - term basis.

While specific conservation objectives for the Lesser Horseshoe Bat have not be given for the Curraghchase SAC there are objectives listed for the Glengarriff Harbour & Woodland SAC in County Cork (site code: 0090). It is appropriate therefore to refer to these (NPWS, 2015b):

#### **Lesser Horseshoe Bat**

No decline in winter, summer or auxiliary roosts; no significant decline in the extent of potential foraging habitat; no significant loss of linear features within 2.5km of roosts; no significant increase in artificial light intensity within 2.5km of roosts;

### **Data collected to carry out the assessment**

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to attain 'good ecological status' by 2015. This includes estuarine waters and the Mague catchment is located within the Shannon International River Basin District. In 2010 a management plan was published to address pollution issues and includes a 'programme of measures' which must be completed (SHIRBD, 2010). At Adare, where the Mague river is tidal in nature the estuary has most recently been assessed by the Environmental Protection Agency (EPA) as being 'moderate'. This status is unsatisfactory and so remedial measures will be required.

More recent data from [www.catchments.ie](http://www.catchments.ie) indicates that 23 out of 34 water bodies (67%) in the Mague catchment are not achieving 'good status'. A catchment report states "The significant pressures are a combination of diffuse agriculture and septic tanks in the upper reaches of the river, and wastewater treatment and a licensed facility in the middle and lower reaches."

The proposed project is located close to a built up area although mature trees and woodland fragments are features of high biodiversity value. It is physically removed from the boundary of the Lower River Shannon SAC at Adare (approximately 1km at the crow flies). The distance to Currachase Woods SAC is nearly 5km.

The municipal wastewater treatment plant at Adare is operated by Irish Water and is licenced by the EPA (register no.: D0312-01) to discharge treated effluent to the Mague River. The Annual Environmental Report from the plant for 2017 (the most recent available) indicated that there were a number of exceedences of licence limits for that year. Nevertheless, analysis of water quality in the vicinity of the outfall pipe showed that there was no observable negative impact of the discharge on the receiving environment. The plant has a design capacity of 2,500 population equivalent (P.E.) with spare capacity of 447 P.E. The AER states that capacity is not likely to be exceeded within the next three year.

A detector-based bat survey of the development site lands was carried out by JBA Consulting in September 2019, the optimal period for bat activity. This found no evidence of Lesser Horseshoe Bat activity on the site.

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## **The Assessment of Significance of Effects**

*Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.*

In order for an effect to occur there must be a pathway between the source (the development site) and the receptor (the SAC or SPA). Where a pathway does not exist an impact cannot occur.

The subject lands are not located within or directly adjacent to any Natura 2000 area.

### **Habitat loss**

There can be no loss of habitat inside any SAC or SPA arising from this project due to the separation distance. Only indirect impacts are therefore possible.

### **Habitat disturbance**

Because of the significant separation distance there can be no disturbance effects to any Natura area arising from this development. The sites are well in excess of the 2.5km where there should be no loss of liner habitat or increase in artificial lighting specified as a conservation objective for Lesser Horseshoe Bat. It is therefore not expected that impacts will occur to this species.

### **Hydrological pathways**

There is a pathway from the site via surface and wastewater water flows to the River Maigne and its estuary. However water quality (which is assessed as moderately polluted) in the estuary is not believed to be affecting any of the conservation objectives for the SAC/SPA. The waters in this vicinity are intertidal in nature and so there is no link to water quality conservation objectives of species in the freshwater portion of the river.

### **Pollution during operation - wastewater**

The proposed development will increase the quantity of wastewater to be treated in the municipal wastewater treatment plant. Since the existing treatment facility is believed to be performing within its design capacity, and not adversely affecting the receiving waters, the additional input is not expected to have an effect on water quality in the estuary.

### **Pollution during operation – surface water**

The homes are to be designed with Sustainable Drainage Systems (SUDS) principles and so it can be expected there will be no change to the quantity or quality of surface water leaving the site. Measures will include a suitably sized attenuation tank with flow control device prior to discharge to the surface water sewer.

The development is not expected to increase pollution along the River Maigne and only the estuarine portion of this river lies within the SAC/SPA. There is no connection from this site to qualifying interests of the SAC in freshwater habitats and so conservation objectives for these species to not apply. While

pollution is undesirable, nutrients can boost primary production which in turn provide increased food for wading or wetland birds in estuaries. In Dublin Bay, which is also designated as an SAC, concerns have been raised that improving water quality will negatively impact upon bird numbers (NPWS, 2014). There is no evidence therefore that pollution is affecting the conservation objectives for birds within the SPA or the intertidal habitats of the SAC. As such significant effects to Natura areas is not considered likely to occur.

### **Pollution during construction**

During the construction phase it is unlikely that sediment-laden water could enter the River Maigue via rainwater run-off as there is no direct route to this water course. It is not likely there that this phase will result in significant effects to the conservation objectives of the SAC/SPA.

### **Abstraction**

Water for the development will be sourced from the water treatment plant at Castleroberts which provide for the town. There is no evidence this is having any negative effect to ecological features.

*Are there other projects or plans that together with the project or plan being assessed could affect the site?*

On-going implementation of the WFD will result in overall improvements to water quality throughout the Maigue catchment. Environmental water quality can be impacted by the effects of surface water run-off from areas of hard standing. These impacts are particularly pronounced in urban areas and can include pollution from particulate matter and hydrocarbon residues, and downstream erosion from accelerated flows during flood events (Mason, 1996).

SUDS-based attenuation measures have been incorporated into this project design, no deterioration to water quality or quantity is predicted. These are standard measures in all development projects and are not included here to avoid or reduce an effect to a Natura 2000 site.

This project will act in combination with other point and diffuse sources of nutrient pollution entering the Maigue river system. The Shannon RBD management plan identifies 22 other wastewater treatment plants in the catchment while over 50% of the pollution input is from diffuse agricultural sources. Although pollution is undesirable it is not considered likely that it is affecting Natura areas within the zone of influence of the project.

Development in Adare is provided for under its Local Area Plan 2015-2021 produced by Limerick City and County Council. The subject lands are partly zoned for residential development. This plan has undergone AA and this concluded that significant effects to Natura areas were unlikely to arise from its implementation.

It is not considered that there are projects that can act in combination with this proposal and which may result in significant effects to Natura 2000 areas.

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#### *List of agencies consulted*

A request for nature conservation observations was sent to the Development Applications Unit of the Department of Arts, Heritage and the Gaeltacht on June 10<sup>th</sup> 2016 (reference no. GPre00199/2016). A response to this was not received.

#### Conclusion and Finding of No Significant Effects

This study has found that the subject lands are not within or directly adjacent to any Natura 2000 area. While they are in the hydrological catchment of the River Maigue there are no impacts that will be significant with regard to the conservation objectives of either the Lower River Shannon SAC or the River Shannon and River Fergus Estuaries SPA.

No significant effects will to occur to Curraghchase Woods SAC.

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