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Environmental Consultants

Appropriate Assessment Screening Report

West Square Parklet
at Askeaton, Co. Limerick

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1 Introduction

This Appropriate Assessment Screening Report has been prepared by Karolina Illien (M.Sc) on behalf of Limerick City and County Council, who are applying for planning permission to Limerick Co. Council. The site for the proposed development lies approximately 0.4km from the River Shannon and River Fergus Estuaries SPA and approximately 2.2km from the Lower River Shannon SAC, sites which have been designated under the EU Habitats Directive and the EU Birds Directive 79/409/EEC, and so it is necessary that the potential impacts of the proposed works be assessed by the competent authority, in accordance with Article 6 of the Habitats Directive. This report provides the information necessary for the competent authority to complete an Appropriate Assessment of the potential impacts of the proposed works on sites of European importance in the area.

1.1 Legislative Background

1.1.1 EU Nature Conservation Legislation and Natura 2000 Sites.

There are three main types of designation for nature conservation in Ireland: Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Natural Heritage Areas (NHAs). NHAs are designated under the Irish Wildlife Act 1976 (amended 2000). SACs and SPAs are designated under European legislation, the EU Habitats Directive 92/43/EEC (transposed into Irish law in the European Union (Natural Habitats) Regulations, 1997 as amended in 1998 and 2005) and the EU Birds Directive 79/409/EEC, respectively. These European designated sites (SACs and SPAs) are also known as Natura 2000 sites. This means that they are part of the Natura 2000 Network, a network of important ecological sites across the European Union.

Sites are designated on the basis of the presence of certain 'Qualifying Features', i.e. the habitats listed under Annex I and the species listed under Annex II of the EU Habitats Directive.

Once a site is designated as a SAC and publicly advertised it is legally protected and becomes a proposed candidate SAC (pcSAC). A three month period follows during which landowners may lodge an objection to the designation. Details of each proposed SAC are then given to the EU Commission, and thereafter the site is called a "candidate SAC". Once the sites are approved by the commission, they are formally designated by the Minister.

1.1.2 Appropriate Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites

Due to the proximity of the proposed development site to a candidate Special Area of Conservation, also known as a Natura 2000 site, an Appropriate Assessment may be required under the Habitats Directive 92/43/EEC, Article 6(3) and (4), Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Such assessments are required where it is identified that a proposed plan or project could have significant impact on a Natura 2000 site. Articles 6(3) and (4) of the Directive, state the following;

6.3 '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... 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....'

6.4 'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest... the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected...'

To determine whether an Appropriate Assessment is required, an initial screening assessment must be conducted and issued to the Department of the Environment, Heritage and Local Government (DoEHLG) Development Applications Unit (DAU).

1.2 Methodology

The screening exercise will be conducted in line with the recommendations and protocol set out in the Guidance from the Commission (EC, 2002) and in accordance with OPR Practice Note PN01 (March 2021). This protocol involves a four-stage process to complete an Appropriate Assessment. At each stage, the findings of certain issues and tests will determine whether the next stage in the process is required.

1.2.1 Appropriate Assessment Stages

The four stages in the Appropriate Assessment process are outlined below:

Stage 1: Screening

This step consists of examining the likely potential impacts of a project or plan, alone or in combination with other projects, upon a Natura 2000 site or sites, and considers whether these impacts may be considered significant. If no significant impacts are foreseen, then a 'finding of no significant effects' (FONSE) statement is issued to the appropriate authority, and the process is complete. If the effects are considered significant or their significance is unknown, then the process moves on to Stage 2.

Stage 2: Appropriate Assessment

Where the screening process has identified potential impacts which are considered significant or unknown, this process examines these potential impacts in detail, in relation to the conservation interests of the Natura 2000 site or sites. Mitigation measures may be suggested to reduce the likelihood or severity of these impacts. If the impacts are still considered to be significant or unknown after this stage is complete, then alternative solutions must be considered (Stage 3).

Stage 3: Assessment of Alternative Solutions

If the potential impacts are still considered to be significant or unknown after the Appropriate Assessment stage, then alternative ways of implementing the project are considered at this stage. If no alternative solutions are possible, then it is considered whether the project or plan may go ahead regardless, if imperative reasons of overriding public interest (IROPI) are found.

Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)

If significant negative impacts on the Natura 2000 site are unavoidable, and no alternative solutions may be found, then this stage involves the consideration of whether the project or plan may go ahead despite these effects, for 'imperative reasons of overriding public interest' (IROPI).

The results of a Stage 1 (Screening) Exercise are detailed in **Section 2** of this report.

2 Stage 1: Screening for Appropriate Assessment

2.1 Description of the Plan or Project

The development will consist of the Demolition of end of terrace two-storey derelict House (V94 DHH9) and adjacent vacant site. The proposed construction consists of 288m2 (0.0288 Hectare) Parklet. The works include demolition of the existing boundary onto West Square, the construction of end of terrace 1.5m wide two-storey abutment, feature walls/seats built from existing stone walls and associated works comprising of services, boundary treatment and hard and soft landscaping works. The site is within an Architectural Conservation Area (ACA). A Site Layout Plan is included as **Appendix A** to this report.

2.2 Description of the Existing Environment

2.2.1 Site Location in Relation to Natura 2000 Sites

The proposed site lies in the town of Askeaton (Grid Ref. N533967 / E650351). The site for the proposed development lies approximately 0.4km from the River Shannon and River Fergus Estuaries SPA (site code: 004077) and approximately 2.2km from the Lower River Shannon SAC (site code: 002165) (see **Figure 2.1** below).

Natura 2000 sites within a 15km buffer of the proposed development are listed in **Table 2-1** and **Figure 2-2.**

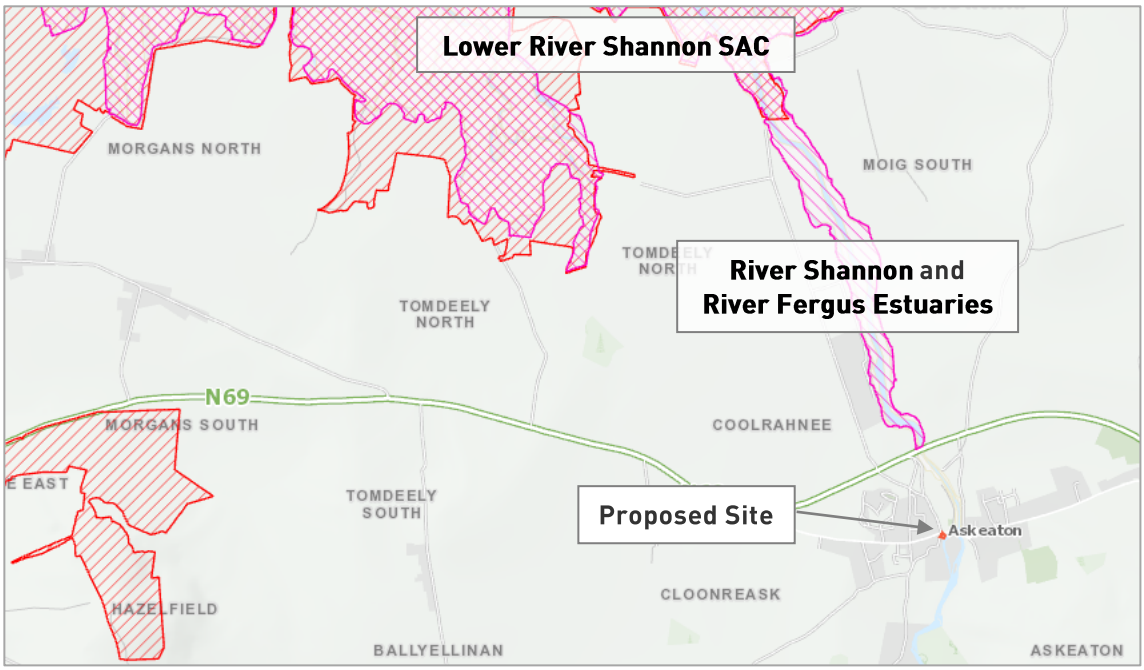

Figure 2-1 Site Location in Relation to the River Shannon and River Fergus Estuaries SPA and Lower River Shannon SAC

Table 2-1 Protected habitats in the vicinity of the proposed development

Name of Site	Site Code	Distance to proposed development	Number of Conservation Objectives (CO)	List of CO Priority Habitats with codes	Connections (Source-Pathway-Receptor)	Screening Status for further consideration
River Shannon and River Fergus Estuaries SPA	004077	0.39km	22	N/A	The SPA lies downstream from the proposed site	In
Lower River Shannon SAC	002165	2.14km	21	1150 *Coastal lagoons 91E0 *Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	The SAC lies downstream from the site	In
Barrigone SAC	000432	3.58km	4	6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 8240 Limestone pavements	Distance, lack of relevant connectivity	Out
Askeaton Fen Complex SAC	002279	3.74km	2	7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae	Distance, lack of relevant connectivity	Out
Curraghchase Woods SAC	000174	5.83km	4	91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsoir* (Alno-Padion, Alnion incanae, Salicion albae) 91J0 *Taxus baccata* woods of the British Isles	Distance, lack of relevant connectivity	Out
Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA	004161	10.91km	1	N/A	Distance, lack of relevant connectivity	Out

From the above table it can be seen that two Natura 2000 sites are screened in for further assessment; Lower River Shannon SAC (Site Code: 002165) and the River Shannon and River Fergus Estuaries SPA (Site Code: 004077)

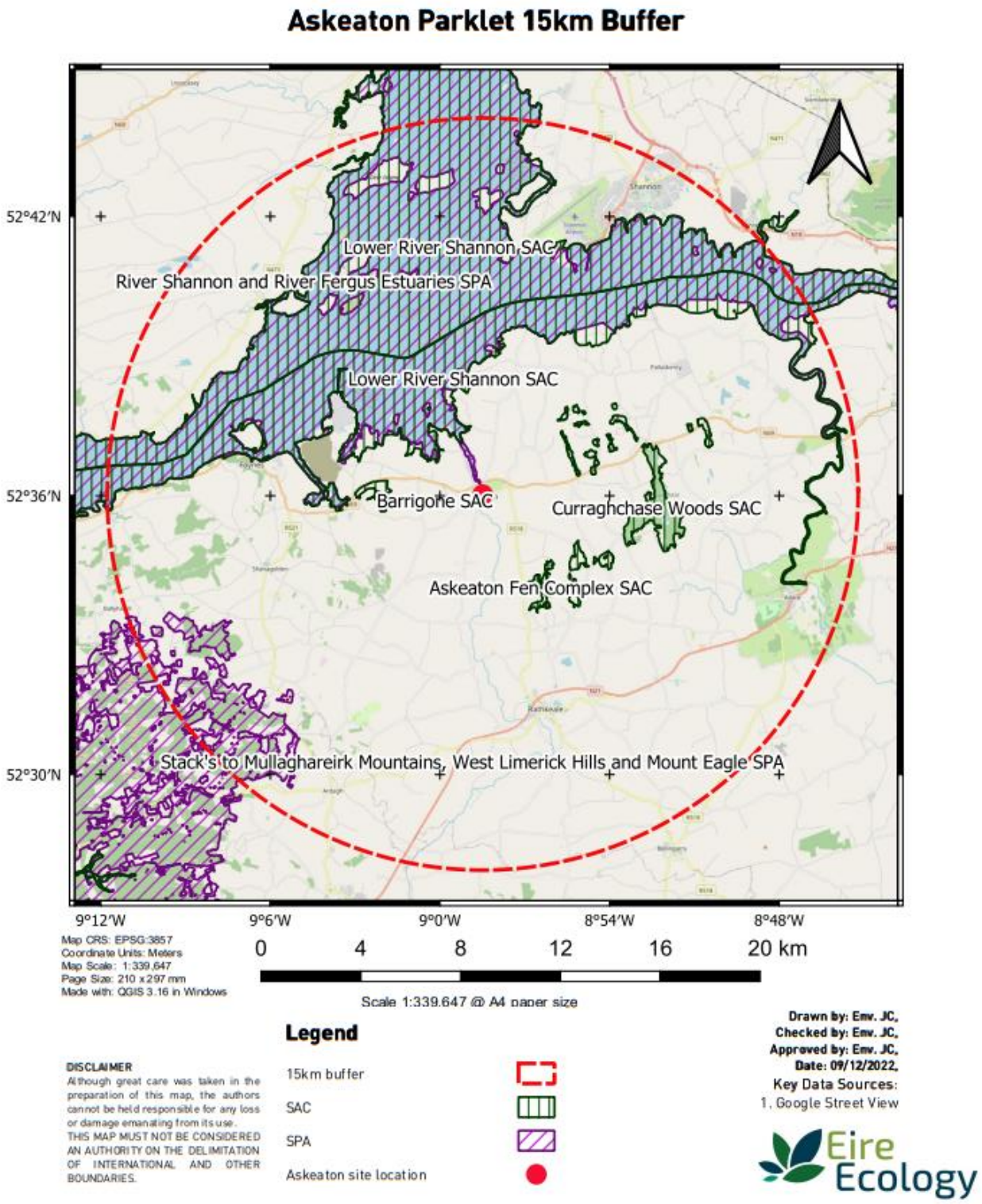

Figure 2-2 15km Buffer Surrounding Proposed Site.

2.2.2 Brief Description of the Natura 2000 Sites which may be affected

Qualifying Features

Natura 2000 sites are designated on the presence of certain habitats and species which are afforded protected under the Birds and Habitats Directives. These habitats and species are regarded as 'qualifying features' of the Natura 2000 sites. The following section provides details on the qualifying features of the Natura 2000 sites in question - the River Shannon and River Fergus Estuaries SPA and the Lower River Shannon SAC. The NPWS site synopsis for the designated site is given as **Appendix B** to this report.

Table 2-2 Lower River Shannon SAC Habitat Information

Habitat code	Habitat name (cSAC Qualifying Feature)	Cover (ha.)	Representivity
[1110]	Sandbanks	1353.2	B
[1130]	Estuaries	24273.3	A
[1140]	Tidal Mudflats and Sandflats	8808.3	A
[1150]	Coastal Lagoons*	33.3	A
[1160]	Large Shallow Inlets and Bays	35288.2	A
[1170]	Reefs	21421.3	B
[1220]	Perennial Vegetation of Stony Banks	683.3	A
[1230]	Vegetated Sea Cliffs	683.3	A
[1310]	Salicornia Mud	0.2	C
[1330]	Atlantic Salt Meadows	495.4	A
[1410]	Mediterranean Salt Meadows	24.6	A
[3260]	Floating River Vegetation	683.3	C
[6410]	Molinia Meadows	683.3	B
[91E0]	Alluvial Forests*	15.5	B

For species, a value is given for 'Population Significance'. This value is based on the relative density or size of the population of that species within the Natura 2000 site with that of the national population. Population Significance is ranked on a scale from A to D where A - 100>=p>15%, B - 15>=p>2%, C - 2>=p>0% and D - Non-significant population. The qualifying species found in the Natura 2000 sites in question are outlined in **Table 2-3 & 2-4**.

Table 2-3 Lower River Shannon SAC Species Information

Species Code	Latin Name	Common Name	Population Significance
1029	*Margaritifera margaritifera*	Freshwater Pearl Mussel	C
1095	*Petromyzon marinus*	Sea Lamprey	C
1096	*Lampetra planeri*	Brook Lamprey	C
1099	*Lampetra fluviatilis*	River Lamprey	C

Species Code	Latin Name	Common Name	Population Significance
1106	*Salmo salar*	Atlantic Salmon	C
1349	*Tursiops truncates*	Bottle-nosed Dolphin	C
1355	*Lutra lutra*	Otter	C

Table 2-4 River Shannon and River Fergus Estuaries SPA Species Information

Species Code	Latin Name	Common Name	Population Significance
A017	*Phalacrocorax carbo*	Cormorant	C
A038	*Cygnus cygnus*	Whooper Swan	C
A046	*Branta bernicla hrota*	Light-bellied Brent Goose	C
A048	*Tadorna tadorna*	Shelduck	B
A050	*Anas penelope*	Wigeon	B
A052	*Anas crecca*	Teal	B
A054	*Anas acuta*	Pintail	B
A056	*Anas clypeata*	Shoveler	C
A062	*Aythya marila*	Scaup	C
A137	*Charadrius hiaticula*	Ringed Plover	C
A140	*Pluvialis apricaria*	Golden Plover	B
A141	*Pluvialis squatarola*	Grey Plover	B
A142	*Vanellus vanellus*	Lapwing	B
A143	*Calidris canutus*	Knot	B
A149	*Calidris alpina*	Dunlin	B
A156	*Limosa limosa*	Black-tailed Godwit	B
A157	*Limosa lapponica*	Bar-tailed Godwit	B
A160	*Numenius arquata*	Curlew	C
A162	*Tringa totanus*	Redshank	B
A164	*Tringa nebularia*	Greenshank	C
A179	*Chroicocephalus ridibundus*	Black-headed Gull	C

Potential Pressures and Threats to the Natura 2000 Sites

The European Nature Information System (EUNIS) website contains data on all Natura 2000 sites, including details of the main threats to and pressures on their qualifying features. Potential threats to and pressures on the qualifying features of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA are listed in **Table 2-5** and **2-6**

Table 2-5 Potential Pressures and Threats to the Lower River Shannon SAC

Activity	Location	Intensity	Influence
Urbanised areas, human habitation	Outside	M	Negative
Eutrophication (natural)	Outside	M	Negative
Reclamation of land from sea, estuary or marsh	Outside	M	Negative
Removal of beach materials	Inside	L	Negative
Marine and Freshwater Aquaculture	Inside	L	Negative
Discharges	Outside	M	Negative
Discharges	Inside	M	Negative
Management of aquatic and bank vegetation for drainage purposes	Inside	L	Negative
Fertilisation	Outside	M	Negative
Air pollution, air-borne pollutants	Outside	M	Negative
Fertilisation	Inside	M	Negative
Hunting	Inside	L	Negative
Grazing	Inside	M	Negative
Sylviculture, forestry	Inside	L	Negative
Sea defense or coast protection works, tidal barrages	Inside	L	Negative
Nautical sports	Inside	L	Negative
Polderisation	Inside	M	Negative
Paths, tracks, cycling tracks	Inside	L	Negative
Hand cutting of peat	Inside	L	Negative
Invasive non-native species	Inside	L	Negative
Nautical sports	Inside	L	Positive
Paths, tracks, cycling tracks	Inside	L	Positive
Leisure fishing	Inside	L	Positive
Marine and Freshwater Aquaculture	Inside	L	Positive

Table 2-6 Potential Pressures and Threats to the River Shannon and River Fergus Estuaries SPA

Activity	Location	Intensity	Influence
Nautical sports	Inside	Medium	Negative
Shipping lanes	Inside	Medium	Negative
Discharges	Inside	High	Negative
Urbanised areas, human habitation	Outside	High	Negative
Fertilisation	Outside	High	Negative
Industrial or commercial areas	Outside	High	Negative
Marine and Freshwater Aquaculture	Inside	Medium	Negative
nautical sports	Inside	Medium	Positive
Shipping lanes	Inside	Medium	Positive
Marine and Freshwater Aquaculture	Inside	Medium	Positive

Conservation Objectives of the Natura 2000 Sites

Once a site has been designated as an SAC, a management plan should be put together for the site which sets out the Conservation Objectives for the site. Every effort should then be made to ensure that these objectives are fulfilled, in order to prevent potential impacts to the qualifying features of the site and maintain as far as possible their favourable conservation status.

European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status sites designated as Special Areas of Conservation and Special Protection Areas. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

Favourable conservation status of a habitat is achieved when:
• its natural range, and area it covers within that range, is stable or increasing, and
• the ecological factors that 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.
The favourable conservation status of a species is achieved when:
• population data on the species concerned indicate that it is maintaining itself, and
• the natural range of the species is neither being reduced or 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.

Management plans have been published for both the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA.

Conservation objectives for: Lower River Shannon SAC

Objective: To restore the favourable conservation condition of Freshwater Pearl Mussel in Lower River Shannon SAC; defined by the following list of attributes and targets

(1029) Freshwater Pearl Mussel Margaritifera *margaritifera*

- Maintain population and distribution at 7km for the freshwater pearl mussel population in the Cloon River, Co. Clare.
- Restore suitable habitat in more than 3.3km and any additional stretches necessary for salmonid spawning.
- Restore water quality
- Restore substratum quality-filamentous algae, substratum quality-stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment and no more than 20% decline from water column to 5cm depth in substrate.
- Restore appropriate hydrological regimes
- Maintain sufficient juvenile salmonids to host glochidial larvae

To restore the favourable conservation condition of Sea Lamprey in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

(1095) Sea Lamprey ***Petromyzon marinus***

- Distribution: extent of anadromy. Greater than 75% of main stem length of rivers accessible from estuary
- At least three age/size groups present. Juvenile density at least 1/m²
- No decline in extent and distribution of spawning beds
- Availability of juvenile habitat. More than 50% of sample sites positive

To maintain the favourable conservation condition of Brook Lamprey in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

(1096) Brook Lamprey ***Lampetra planeri***

- Access to all water courses down to first order streams
- At least three age/size groups of brook/river lamprey present
- Mean catchment juvenile density of brook/river lamprey at least 2/m²
- No decline in extent and distribution of spawning beds
- More than 50% of sample sites positive

To maintain the favourable conservation condition of River Lamprey in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

(1099) River Lamprey ***Lampetra fluviatilis***

- Access to all water courses down to first order streams
- At least three age/size groups of brook/river lamprey present
- Mean catchment juvenile density of brook/river lamprey at least 2/m²
- No decline in extent and distribution of spawning beds
- More than 50% of sample sites positive

To restore the favourable conservation condition of Salmon in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1106 Atlantic Salmon ***Salmo salar*** **(only in fresh water)**

- 100% of river channels down to second order accessible from estuary
- Conservation Limit (CL) for each system consistently exceeded
- Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling
- Out-migrating smolt abundance - No significant decline
- No decline in number and distribution of spawning redds due to anthropogenic causes
- Water quality - At least Q4 at all sites sampled by EPA

To maintain the favourable conservation condition of Sandbanks which are slightly covered by sea water all the time in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1110 Sandbanks which are slightly covered by sea water all the time

- The distribution of sandbanks is stable, subject to natural processes.
- The permanent habitat area is stable or increasing, subject to natural processes
- Conserve the following community type in a natural condition: Subtidal sand to mixed sediment with Nephtys spp. community complex.

To maintain the favourable conservation condition of Estuaries in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1130 Estuaries

- The permanent habitat area is stable or increasing, subject to natural processes.

- Conserve the following community types in a natural condition: Intertidal sand to mixed sediment with polychaetes, molluscs and crustaceans community complex; Estuarine subtidal muddy sand to mixed sediment with gammarids community complex; Subtidal sand to mixed sediment with Nucula nucleus community complex; Subtidal sand to mixed sediment with Nephtys spp. community complex; Fucoid-dominated intertidal reef community complex; Faunal turf-dominated subtidal reef community; and Anemone-dominated subtidal reef community

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1140 Mudflats and sandflats not covered by seawater at low tide

- The permanent habitat area is stable or increasing, subject to natural processes
- Conserve the following community types in a natural condition: Intertidal sand with Scolelepis squamata and Pontocrates spp. community; and Intertidal sand to mixed sediment with polychaetes, molluscs and crustaceans community complex

To restore the favourable conservation condition of Coastal lagoons in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1150 *Coastal lagoons

- Area stable or increasing, subject to natural processes. Favourable reference area 33.4ha- Shannon Airport Lagoon 24.2ha; Cloonconeen Pool 3.9ha; Scattery Lagoon 2.8ha; Quayfield and Poulaweala Loughs 2.5ha.
- No decline, subject to natural processes.
- Median annual salinity and temporal variation within natural ranges
- Annual water level fluctuations and minima within natural ranges
- Appropriate hydrological connections between lagoons and sea, including where necessary, appropriate management
- Annual median chlorophyll a within natural ranges and less than 5µg/L
- Annual median MRP within natural ranges and less than 0.1mg/L
- Annual median DIN within natural ranges and less than 0.15mg/L
- Macrophyte colonisation to maximum depth of lagoons
- Maintain number and extent of listed lagoonal specialists, subject to natural variation
- Maintain listed lagoon specialists, subject to natural variation
- Negative indicator species absent or under control

To maintain the favourable conservation condition of Large shallow inlets and bays in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1160 Large shallow inlets and bays

- The permanent habitat area is stable or increasing, subject to natural processes.
- Conserve the following community types in a natural condition: Intertidal sand with Scolelepis squamata and Pontocrates spp. community; Intertidal sand to mixed sediment with polychaetes, molluscs and crustaceans community complex; Subtidal sand to mixed sediment with Nucula nucleus community complex; Subtidal sand to mixed sediment with Nephtys spp. community complex; Fucoid-dominated intertidal reef community complex; Mixed subtidal reef community complex; Faunal turf-dominated subtidal reef community; Anemone- dominated subtidal reef community; and Laminaria- dominated community complex.

To maintain the favourable conservation condition of Perennial vegetation of stony banks in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1220 Perennial vegetation of stony banks

- Area stable or increasing, subject to natural processes, including erosion and succession
- No decline, or change in habitat distribution, subject to natural processes.
- Maintain the natural circulation of sediment and organic matter, without any physical obstructions
- Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
- Maintain the typical vegetated shingle flora including the range of sub- communities within the different zones
- Negative indicator species (including non-natives) to represent less than 5% cover
- Area stable or increasing, subject to natural processes, including erosion. For sub- sites mapped: Kilbaha- 4.1km; Ladder Rock- 1.0km; Moyarta- 0.9km; Lisheencrony- 1.1km; Burrane- 0.2km; Kerry Head- 33.4km; Ballybunion- 15.6km; Kilclogher- 4.9km; Loop Head- 6.1km.
- No decline, subject to natural processes.
- No alteration to natural functioning of geomorphological and hydrological processes due to artificial structures
- Maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession
- Maintain structural variation within sward

To maintain the favourable conservation condition of Vegetated sea cliffs in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1230 Vegetated sea cliffs of the Atlantic and Baltic coasts

- Maintain range of sub- communities with typical species
- Negative indicator species (including non-natives) to represent less than 5% cover
- Cover of bracken (Pteridium aquilinum) on grassland and/or heath to be less than 10%. Cover of woody species on grassland and/or heath to be less than 20%

To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1310 Salicornia and other annuals colonizing mud and sand

- Area stable or increasing, subject to natural processes
- No decline, or change in habitat distribution
- Maintain natural circulation of sediments and organic matter, without any physical obstructions, Maintain/restore creek and pan structure, Maintain natural tidal regime
  Vegetation structure: Maintain zonation, vegetation height and vegetation cover

To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1310 Salicornia and other annuals colonizing mud and sand

- Maintain the presence of species-poor communities with typical species
- No significant expansion of common cordgrass

To restore the favourable conservation condition of Atlantic salt meadows (Glauco-Puccinellietalia maritimae) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

- Area stable or increasing, subject to natural processes
- No decline or change in habitat distribution, subject to natural processes
- Physical structure: maintain: sediment supply, creeks and pans, natural tidal regime

To restore the favourable conservation condition of Atlantic salt meadows (Glauco-Puccinellietalia maritimae) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

- Vegetation structure – maintain: zonation, vegetation height, vegetation cover and no significant expansion of common cordgrass
- Maintain range of sub-communities with typical species

To maintain the favourable conservation condition of Bottlenose Dolphin in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1349 Bottlenose Dolphin *Tursiops truncatus*

- Species range within the site should not be restricted by artificial barriers to site use.
- Critical areas, representing habitat used preferentially by bottlenose dolphin, should be maintained in a natural condition.
- Human activities should occur at levels that do not adversely affect the bottlenose dolphin population at the site

To restore the favourable conservation condition of Otter in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1355 Otter *Lutra lutra*

- Distribution - No significant decline
- Extent of terrestrial habitat - No significant decline
- Extent of marine habitat- No significant decline
- Extent of freshwater (river) habitat- No significant decline
- Extent of freshwater (lake/lagoon) habitat- No significant decline
- Couching sites and holts- No significant decline
- Fish biomass available- No significant decline
- Barriers to connectivity- No significant increase

To restore the favourable conservation condition of Mediterranean salt meadows (Juncetalia maritimi) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1410 Mediterranean salt meadows (Juncetalia maritimi)

- Area increasing, subject to natural processes
- No decline, or change in habitat distribution, subject to natural processes
- Physical structure - Maintain sediment supply, creeks and pans and flooding regime.
- Vegetation structure: maintain zonation

To restore the favourable conservation condition of Mediterranean salt meadows (Juncetalia maritimi) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

1410 Mediterranean salt meadows (Juncetalia maritimi)

- Vegetation structure – maintain: vegetation height and vegetation cover.
- Maintain range of sub-communities with typical species
- No significant expansion of common cordgrass

To maintain the favourable conservation condition of Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation

- Area stable or increasing, subject to natural processes

- No decline, subject to natural processes.
- Hydrological regime - maintain: river flow, tidal influence and freshwater seepages.
- The substratum should be dominated by the particle size ranges, appropriate to the habitat sub-type (frequently sands, gravels and cobbles)

To maintain the favourable conservation condition of Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation

- The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition
- Typical species of the relevant habitat sub-type should be present and in good condition
- The area of active floodplain at and upstream of the habitat should be maintained
- The area of riparian woodland at and upstream of the bryophyte-rich sub-type should be maintained

To maintain the favourable conservation condition of Molinia meadows on calcareous, peaty or clayey-silt laden soils (Molinion caeruleae) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)

- Area stable or increasing, subject to natural processes
- Habitat distribution - No decline, subject to natural processes
- Vegetation structure: Broadleaf herb component of vegetation between 40 and 90%,30-70% of sward between 10 and 80cm high.
- Vegetation composition: At least 7 positive indicator species present, including 1 "high quality" species, no decline in notable species. Negative indicator species collectively not more than 20% cover, with cover by an individual species less than 10%. Non-native invasive species, absent or under control. Bog mosses (Sphagnum spp.) not more than 10% cover; hair mosses (Polytrichum spp.) not more than 25% cover

To maintain the favourable conservation condition of Molinia meadows on calcareous, peaty or clayey-silt laden soils (Molinion caeruleae) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)

- Cover of woody species and bracken not more than 5% cover
- Not more than 10% bare ground

To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

91E0 *Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)

- Area stable or increasing, subject to natural processes
- Habitat distribution - No decline.
- Woodland size - Area stable or increasing
- Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer
- Maintain diversity and extent of community types

- Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy
- Appropriate hydrological regime necessary for maintenance of alluvial vegetation
- At least 30m^3/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder)

To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) in the Lower River Shannon SAC, which is defined by the following list of attributes and targets:

91E0 *Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)

- Woodland structure: veteran trees – no decline
- Indicators of local disctinctiveness– no decline
- Native tree cover– no decline
- A variety of typical native species present, depending on woodland type, including alder (Alnus glutinosa), willows (Salix spp) and, locally, oak (Quercus robur) and ash (Fraxinus excelsior)
- Negative indicator species, particularly non-native invasive species, absent or under control

Conservation objectives for: River Shannon and River Fergus Estuaries SPA

To maintain the favourable conservation condition of Cormorant in the River Shannon and River Fergus Estuaries SPA, which is defined by the following list of attributes and targets:

A017 Cormorant Phalacrocorax carbo

- No significant decline in breeding population, Productivity rate, breeding colonies, Prey biomass available
- No significant increase to barriers to connectivity.
- Human activities should occur at levels that do not adversely affect the breeding cormorant population
- Long term population trend stable or increasing
- There should be no significant decrease in the range, timing or intensity of use of areas by cormorant other than that occurring from natural patterns of variation

To maintain the favourable conservation condition of the following birds in the River Shannon and River Fergus Estuaries SPA, which is defined by the list of attributes and targets below:

A038 Whooper Swan Cygnus cygnus
A046 Light-bellied Brent Goose Branta bernicla hrota
A048 Shelduck Tadorna tadorna
A050 Wigeon Anas penelope
A052 Teal Anas crecca
A054 Pintail Anas acuta
A056 Shoveler Anas clypeata
A062 Scaup Aythya marila
A137 Ringed Plover Charadrius hiaticula
A140 Golden Plover Pluvialis apricaria
A141 Grey Plover Pluvialis squatarola
A142 Lapwing Vanellus vanellus
A143 Knot Calidris canutus
A149 Dunlin Calidris alpina
A156 Black-tailed Godwit Limosa limosa
A157 Bar-tailed Godwit Limosa lapponica

A160 Curlew Numenius arquata
A162 Redshank Tringa totanus
A164 Greenshank Tringa nebularia
A179 Black-headed Gull Chroicocephalus ridibundus

- Long term population trend stable or increasing
- There should be no significant decrease in the range, timing or intensity of use of areas by these birds other than that occurring from natural patterns of variation.

2.3 Soils, Geology & Hydrogeology

The Geological Survey of Ireland (GSI) website was consulted for available geological/hydrological information. The site is located on made ground.

The groundwater public viewer run by the GSI classifies the groundwater as having High (H) vulnerability at this location. Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease at which groundwater may be contaminated by human activities. The site lies within a Regionally Important Aquifer - Karstified (conduit).

The groundwater body to which the site resides; IE_SH_G_010- 24 Shannon Estuary South has an overall status as good (2013-2018)

https://www.catchments.ie/data/#/waterbody/IE_SH_G_010?_k=ssee6j

2.4 Other Plans and Projects in the Area

It is a requirement of the Appropriate Assessment process to consider the 'in combination' effects of the proposed development with other plans and projects in the area. **Table 2-7** below gives details of the other plans and projects in the area which may be affecting the approximately 0.4km from the River Shannon and River Fergus Estuaries SPA and approximately 2.2km from the Lower River Shannon SAC

Table 2-7 Other Plans and Projects Affecting the Lower River Shannon SAC

Name of Plan or Project	Key policies/issues/objectives directly related to the relevant Natura 2000 sites	Potential cumulative or in-combination effects on the relevant Natura 2000 sites
Limerick County Development Plan 2022 - 2028	Designated Sites, Habitats and Species Policies and Objectives, Natural Heritage and Biodiversity Polices and Objectives, Natural Water Systems Polices	Positive Impact
Shannon River Basin Management Plan 2016-2021	The Shannon International RBD Management Plan, issued in April 2018, sets out a number of objectives and measures for all water bodies in the Northwestern International Region. The public consultation process is ongoing for 2022-2027 plan. **Objectives**: Ensure that the status of waters supporting protected areas is protected and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2027 **Measures**: Implement 11 EU Directives, 9 other basic requirements.	Positive impact
NPWS Conservation Management Plans	Conservation Management Plans for the River Shannon and River Fergus Estuaries SPA and the Lower River Shannon SAC have been published by the NPWS and are outlined above.	Positive impacts
Inland Fisheries Ireland (IFI) Corporate Plan 2021-2025	Goals: To improve the protection and conservation of the resource. To develop and improve wild fish populations. To increase the number of anglers. To generate a better return for Ireland from the resource	Positive impact
Planning Applications in the area	A search was carried out on Clare County Council's online planning query system. It was ascertained that there has been 20 other successful planning applications within the past year in the town of Askeaton (Grid Ref. N533967 / E650351): 211718 construction of a new dwelling 221762 partially constructed dwelling house	Neutral Impact

	221036 construction of a garage 2212 dwelling house, entrance, boundary walls 22145 construction of a new dwelling house 22150 construction of a new dwelling house 22153 a garage 22164 a change of house & garage design 22226 extension of c. 55 sqm to the existing electrical switch room building. 2236 construction of roof over existing slatted tank 22361 the construction of a two storey dwelling house 2239 construction of a new dwelling house 22501 construction of a new dwelling house 2259 construction of a new dwelling house 22690 alterations to front boundary walls 22782 dwelling house 22794 construction of an extension to the existing dryer tower facility 22867 elevational changes to the front of the existing dwelling house 2288 construction of a new dwelling house 2289 construction of a new dwelling house	

2.5 Screening Matrix for Appropriate Assessment in line with EU Commission Guidance

Having established the extent of the proposed project and the details of the Natura 2000 site, a screening assessment for possible impacts can be generated. This section follows the format of the Screening Matrix provided in Annex 2 of the following document;
"Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission, 2001".

The findings of the screening matrix are summarised in **Table 2-8** below.

Table 2-8 Stage 1 - Screening Matrix for the Proposed Development

Brief Description of the Project or Plan
Location: The proposed site lies in the town of Askeaton (Grid Ref. N533967 / E650351) **Distance from Designated Site**: The site for the proposed development lies approximately 0.4km from the River Shannon and River Fergus Estuaries SPA (site code: 004077) and approximately 2.2km from the Lower River Shannon SAC (site code: 002165). **Brief Description of the Project:** The development will consist of the Demolition of end of terrace two-storey derelict House (V94 DHH9) and adjacent vacant site. The proposed construction consists of 288m2 (0.0288 Hectare) Parklet. The works include demolition of the existing boundary onto West Square, the construction of end of terrace 1.5m wide two-storey abutment, feature walls/seats built from existing stone walls and associated works comprising of services, boundary treatment and hard and soft landscaping works. The site is within an Architectural Conservation Area (ACA). A Site Layout Plan for the proposed development is included as **Appendix A** to this report.
Brief Description of the Natura 2000 Site
Site Designation Status: The Lower River Shannon candidate Special Area of Conservation (cSAC Site Code 002165) and the River Shannon and River Fergus Estuaries SPA (site code: 004077) are designated under EU Habitats Directive (92/43/EEC) and the EU Birds Directive 79/409/EEC. **Qualifying Features** The Lower River Shannon cSAC is of conservation significance due to the presence of fourteen habitats listed under Annex I of the EU Habitats Directive and seven species listed under Annex II of the same directive. The River Shannon and River Fergus Estuaries SPA is of conservation significance due to 22 species (see below). **Qualifying Habitats** **Lower River Shannon SAC** Sandbanks which are slightly covered by sea water all the time [1110] Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Coastal lagoons [1150] Large shallow inlets and bays [1160] Reefs [1170]

Perennial vegetation of stony banks [1220]
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]
Salicornia and other annuals colonising mud and sand [1310]
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]
Mediterranean salt meadows (Juncetalia maritimi) [1410]
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]
(EU Habitats Directive 92/43/EEC).

Qualifying Species
Lower River Shannon SAC
Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]
Petromyzon marinus (Sea Lamprey) [1095]
Lampetra planeri (Brook Lamprey) [1096]
Lampetra fluviatilis (River Lamprey) [1099]
Salmo salar (Salmon) [1106]
Tursiops truncatus (Common Bottlenose Dolphin) [1349]
Lutra lutra (Otter) [1355]

River Shannon and River Fergus Estuaries SPA
Cormorant (Phalacrocorax carbo) [A017]
Whooper Swan (Cygnus cygnus) [A038]
Light-bellied Brent Goose (Branta bernicla hrota) [A046]
Shelduck (Tadorna tadorna) [A048]
Wigeon (Anas penelope) [A050]
Teal (Anas crecca) [A052]
Pintail (Anas acuta) [A054]
Shoveler (Anas clypeata) [A056]
Scaup (Aythya marila) [A062]
Ringed Plover (Charadrius hiaticula) [A137]
Golden Plover (Pluvialis apricaria) [A140]
Grey Plover (Pluvialis squatarola) [A141]
Lapwing (Vanellus vanellus) [A142]
Knot (Calidris canutus) [A143]
Dunlin (Calidris alpina) [A149]
Black-tailed Godwit (Limosa limosa) [A156]
Bar-tailed Godwit (Limosa lapponica) [A157]
Curlew (Numenius arquata) [A160]
Redshank (Tringa totanus) [A162]
Greenshank (Tringa nebularia) [A164]
Black-headed Gull (Chroicocephalus ridibundus) [A179]
(EU Habitats Directive 92/43/EEC / EU Birds Directive 79/409/EEC).

Habitats and Species of Interest
Several other habitats and species of conservation interest have been recorded from the River Shannon and River Fergus Estuaries SPA and the Lower River Shannon SAC. Full details of the sites are found in the Site Synopses included as **Appendix B** to this report.

Unit Size:
Lower River Shannon SAC 68300.0097 ha.

River Shannon and River Fergus Estuaries SPA 32241.1999 ha.

ASSESSMENT CRITERIA

Describe the individual elements of the project likely to give rise to impacts on the Natura 2000 site.

Secondary impacts on the Shannon Fergus SPA and Lower River Shannon SAC due to a deterioration of water quality during the construction phase cannot be ruled out at this stage.

(a) Identify all potential direct and indirect impacts that may have an effect on the conservation objectives of a European site, taking into account the size and scale of the project under the following headings:

Impacts:	**Impacts: Possible Significance of Impacts:**
Construction phase e.g. • **Vegetation clearance** • **Demolition** • **Surface water runoff from soil excavation/ infill/ landscaping (including borrow pits)** • **Dust, noise, vibration** • **Lighting disturbance** • **Impact on groundwater/dewatering** • **Storage of excavated/construction materials** • **Access to site** • **Pests**	Construction is confined to existing built land. No instream works are being conducted. The site was previously cleared of vegetation. The retaining wall by the river is staying in situ with no works occurring within 1m of this boundary wall. Given the separation distance and lack of works close to the adjacent canal no deterioration in water quality is anticipated. The accompanying EcIA documents finding from ecological surveys conducted within and surrounding the site. No CO's of the Shannon Estuary SPA will be impacted by the proposed works. No CO's of the Lower River Shannon SAC will be impacted by the works.
Operational phase e.g. • **Direct emission to air and water** • **Surface water runoff containing contaminant or sediment** • **Lighting disturbance** • **Noise/vibration** • **Changes to water/groundwater due to drainage or abstraction** • **Presence of people, vehicles and activities** • **Physical presence of structures (e.g. collision risks)** • **Potential for accidents or incidents**	The proposed parklet will have permeable surfaces hence allowing for natural seepage of rain water. No impacts are anticipated in this respect.
In-combination/Other	None expected

- Size and Scale
  The development site comprises an overall area of 287.5m^2(approximately). At this size, and due to the fact that the works will be located entirely outside the designated area, it is not expected that the development will have any significant impact (direct, indirect or secondary in nature) on the Natura 2000 site in this regard.

- **Land-Take**
  The proposed works will be entirely located outside the designated site and so there will be no impacts in this regard. The improvements works are on built land and no instream works are being carried out.

- **Distance from Natura 2000 site or key features of the site**
  The site for the proposed development is located approximately 0.4km from the River Shannon and River Fergus Estuaries SPA and approximately 2.2km from the Lower River Shannon SAC. At this distance, no impacts are expected on the Natura 2000 sites in this regard.

- **Resource Requirements**
  It is not expected that the proposed development will have any significant impact (direct, indirect or secondary in nature) on the designated sites in this regard.

- **Excavation Requirements**
  No impacts are expected on the Natura 2000 site in this regard.

- **Transportation Requirements**
  During the construction phase of the proposed development, there will be a slight increase in the volume of traffic in the area for a short time. It is not expected that this slight increase will result in direct, indirect or secondary impacts on the Natura 2000 site.

- **Duration of construction, operation, decommissioning**
  The construction phase of the proposed development will last approximately 6 months. It is expected that the amenity parklet will remain in use for at least 50 years. Neither the construction, operation nor the eventual decommissioning of the proposed development is likely to result in direct, indirect or secondary impacts on the Natura 2000 site.

Describe any likely changes to the site arising as a result of the following;

- **Reduction or fragmentation of habitat area**
  There will be no changes in this respect.
- **Disturbance to QI Species**
  There will be no changes in this respect.
- **Habitat or Species Fragmentation**
  There will be no changes in this respect.
- **Reduction or fragmentation in species density**
  There will be no changes in this respect.
- **Changes in key indicators of conservation status value (water or air quality etc.)**
  Slight deterioration of water quality due to runoff cannot be ruled out at this stage.
- **Changes to areas of sensitivity or threats to QI**
  There will be no changes in this respect.
- **Interference with the key relationships that define the structure or ecological function of the site**
  There will be no changes in this respect.

Are 'mitigation' measures necessary to reach a conclusion that likely significant effects can be ruled out at screening?

☐ **Yes** ☒ **No**

Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.
It is not considered that the proposed development will have any significant impacts on the River Shannon & River Fergus Estuaries and the Lower River Shannon Natura 2000 sites, alone or in combination with the other plans or projects in the area (outlined in Section 2.3 of this report).

3 Conclusions

This report details the results of a screening exercise carried out for a proposed development in Askeaton, Co Limerick. Planning is being sought for the Demolition of end of terrace two-storey derelict House (V94 DHH9) and adjacent vacant site. The proposed construction consists of 288m^2 (0.0288 Hectare) Parklet. The works include demolition of the existing boundary onto West Square, the construction of end of terrace 1.5m wide two-storey abutment, feature walls/seats built from existing stone walls and associated works comprising of services, boundary treatment and hard and soft landscaping works. The site is within an Architectural Conservation Area (ACA). A Site Layout Plan for the proposed development is included as **Appendix A** to this report. The screening exercise examined impacts on the River Shannon and River Fergus Estuaries SPA and the Lower River Shannon SAC.

The site for the proposed development is located approximately 0.4km from the River Shannon and River Fergus Estuaries SPA and approximately 2.2km from the Lower River Shannon SAC. At this distance, it is not expected that the proposed development will give rise to any direct impacts on the Natura 2000 sites in question.

No instream works are being conducted. The site was previously cleared of vegetation. The retaining wall by the river is staying in situ with no works occurring within 1m of this boundary wall. Given the separation distance and lack of works close to the adjacent canal no deterioration in water quality is anticipated. The accompanying EcIA documents finding from ecological surveys conducted within and surrounding the site. No CO's of the Shannon Estuary SPA will be impacted by the proposed works. No CO's of the Lower River Shannon SAC will be impacted by the works.

Therefore, the conclusion of this screening exercise is that no significant effects are expected on the qualifying interests or conservation objectives of the Lower River Shannon SAC or the River Shannon and River Fergus Estuaries Natura 2000 sites, as a result of the proposed development in question, alone or in combination with the other plans and projects in the area, and therefore that a Natura Impact Statement is not required in this case. This report is therefore issued as a 'Finding of No Significant Effects' (FONSE) statement, in accordance with the EU Commission's methodological guidance (EC, 2001).

APPENDIX A - Site Layout Plan

Resin Bound Gravel

Alternative loose Gravel in trays
Nidagravel 140 honeycomb gravel grids or Similar

Oak Handrail on Stainless Steel Balustrade

Stone Wall & Limestone Capping
(Allow for new Limestone Cappings
Walls made up of material on the site)

6 Circular Seats

3 Timber Seat on Stone Rubble Wall

7 Native River Bank Plants
Introduces Colour and Seasonality

hugh kelly architects

Limerick City & County Council

WEST SQUARE PARKLET, ASKEATON

Proposed Parklet Plan

Comhairle Cathrach & Contae Luimnigh
Limerick City & County Council

GA			PLANNING				HK			1:200 @ A3
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APPENDIX B NPWS Site Synopses

SITE NAME: LOWER RIVER SHANNON SAC
SITE CODE: 002165

This very large site stretches along the Shannon valley from Killaloe in Co. Clare to Loop Head/ Kerry Head, a distance of some 120 km. The site thus encompasses the Shannon, Feale, Mulkear and Fergus estuaries, the freshwater lower reaches of the River Shannon (between Killaloe and Limerick), the freshwater stretches of much of the Feale and Mulkear catchments and the marine area between Loop Head and Kerry Head. Rivers within the sub-catchment of the Feale include the Galey, Smearlagh, Oolagh, Allaughaun, Owveg, Clydagh, Caher, Breanagh and Glenacarney. Rivers within the sub-catchment of the Mulkear include the Killeenagarriff, Annagh, Newport, the Dead River, the Bilboa, Glashacloonaraveela, Gortnageragh and Cahernahallia.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[1110] Sandbanks
[1130] Estuaries
[1140] Tidal Mudflats and Sandflats
[1150] Coastal Lagoons*
[1160] Large Shallow Inlets and Bays
[1170] Reefs
[1220] Perennial Vegetation of Stony Banks
[1230] Vegetated Sea Cliffs
[1310] Salicornia Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[3260] Floating River Vegetation
[6410] Molinia Meadows
[91E0] Alluvial Forests*
[1029] Freshwater Pearl Mussel (Margaritifera margaritifera)
[1095] Sea Lamprey (Petromyzon marinus)
[1096] Brook Lamprey (Lampetra planeri)
[1099] River Lamprey (Lampetra fluviatilis)
[1106] Atlantic Salmon (Salmo salar)
[1349] Bottle-nosed Dolphin (Tursiops truncatus)
[1355] Otter (Lutra lutra)

The Shannon and Fergus Rivers flow through Carboniferous limestone as far as Foynes, but west of Foynes Namurian shales and flagstones predominate (except at Kerry Head, which is formed from Old Red Sandstone). The eastern sections of the Feale catchment flow through Namurian rocks and the western stretches through Carboniferous limestone. The Mulkear flows through Lower Palaeozoic rocks in the upper reaches before passing through Namurian rocks, followed by Lower Carboniferous shales and Carboniferous limestone. The Mulkear River itself, immediately north of Pallas Green, passes through an area of Rhyolites, Tuffs and Agglomerates.

The Shannon and Fergus Estuaries form the largest estuarine complex in Ireland. They form a unit stretching from the upper tidal limits of the Shannon and Fergus Rivers to the mouth of the Shannon Estuary (considered to be a line across the narrow strait between Kilcredaun Point and Kilconly Point). Within this main unit there are several tributaries with their own 'sub-estuaries' e.g. the Deel River, Mulkear River, and Maigue River. To the west of Foynes, a number of small estuaries form indentations in the predominantly hard coastline, namely Poulnasherry Bay, Ballylongford Bay, Clonderalaw Bay and the Feale or Cashen River estuary.

Both the Fergus and inner Shannon Estuaries feature vast expanses of intertidal mudflats, often fringed with saltmarsh vegetation. The smaller estuaries also feature mudflats, but have their own unique characteristics, e.g. Poulnasherry Bay is stony and unusually rich in species and biotopes. Plant species are typically scarce on the mudflats, although there are some eelgrass (Zostera spp.) beds and patches of green algae (e.g. Ulva sp. and Enteromorpha sp.). The main macro-invertebrate community which has been noted from the inner Shannon and Fergus estuaries is a MacomaScrobicularia-Nereis community.

In the transition zone between mudflats and saltmarsh, specialised colonisers of mud predominate. For example, swards of Common Cord-grass (Spartina anglica) frequently occur in the upper parts of the estuaries. Less common are swards of Glasswort (Salicornia europaea agg.). In the innermost parts of the estuaries, the tidal channels or creeks are fringed with species such as Common Reed (Phragmites australis) and club-rushes (Scirpus maritimus, S. tabernaemontani and S. triquetrus). In addition to the nationally rare Triangular Club-rush (Scirpus triqueter), two scarce species are found in some of these creeks (e.g. Ballinacurra Creek): Lesser Bulrush (Typha angustifolia) and Summer Snowflake (Leucojum aestivum).

Saltmarsh vegetation frequently fringes the mudflats. Over twenty areas of estuarine saltmarsh have been identified within the site, the most important of which are around the Fergus estuary and at Ringmoylan Quay. The dominant type of saltmarsh present is Atlantic salt meadow occurring over mud. Characteristic species occurring include Common Saltmarsh-grass (Puccinellia maritima), Sea Aster (Aster tripolium), Thrift (Armeria maritima), Sea-milkwort (Glaux maritima), Sea Plantain (Plantago maritima), Red Fescue (Festuca rubra), Creeping Bent (Agrostis stolonifera), Saltmarsh Rush (Juncus gerardi), Long-bracted Sedge (Carex extensa), Lesser Sea-spurrey (Spergularia marina) and Sea Arrowgrass (Triglochin maritima). Areas of Mediterranean salt meadows, characterised by clumps of Sea Rush (Juncus maritimus) occur occasionally. Two scarce species are found on saltmarshes in the vicinity of the Fergus estuary: a type of robust saltmarsh-grass (Puccinellia foucaudii), sometimes placed within the species Common Saltmarsh-grass (P. maritima) and Hard-grass (Parapholis strigosa).

Saltmarsh vegetation also occurs around a number of lagoons within the site, two of which have been surveyed as part of a National Inventory of Lagoons. Cloonconeen Pool (4-5 ha) is a natural sedimentary lagoon impounded by a low cobble barrier. Seawater enters by percolation through the barrier and by overwash. This lagoon represents a type which may be unique to Ireland since the substrate is composed almost entirely of peat. The adjacent shore features one of the best examples of a drowned forest in Ireland. Aquatic vegetation in the lagoon includes typical species such as Beaked Tasselweed (Ruppia maritima) and green algae (Cladophora sp.). The fauna is not diverse, but is typical of a high salinity lagoon and includes six lagoon specialists (Hydrobia ventrosa, Cerastoderma glaucum, Lekanesphaera hookeri, Palaemonetes varians, Sigara stagnalis and Enochrus bicolor). In contrast,

Shannon Airport Lagoon (2 ha) is an artificial saline lake with an artificial barrier and sluiced outlet. However, it supports two Red Data Book species of stonewort (Chara canescens and Chara cf. connivens).

Most of the site west of Kilcredaun Point/Kilconly Point is bounded by high rocky sea cliffs. The cliffs in the outer part of the site are sparsely vegetated with lichens, Red Fescue, Sea Beet (Beta vulgaris subsp. maritima), Sea Campion (Silene vulgaris subsp. maritima), Thrift and plantains (Plantago spp.). A rare endemic type of sealavender, Limonium recurvum subsp. pseudotranswallianum, occurs on cliffs near Loop Head. Cliff-top vegetation usually consists of either grassland or maritime heath. The boulder clay cliffs further up the estuary tend to be more densely vegetated, with swards of Red Fescue and species such as Kidney Vetch (Anthyllis vulneraria) and Common Bird's-foot-trefoil (Lotus corniculatus).

The site supports an excellent example of a large shallow inlet and bay. Littoral sediment communities in the mouth of the Shannon Estuary occur in areas that are exposed to wave action and also in areas extremely sheltered from wave action. Characteristically, exposed sediment communities are composed of coarse sand and have a sparse fauna. Species richness increases as conditions become more sheltered. All shores in the site have a zone of sand hoppers at the top, and below this each of the shores has different characteristic species giving a range of different shore types.

The intertidal reefs in the Shannon Estuary are exposed or moderately exposed to wave action and subject to moderate tidal streams. Known sites are steeply sloping and show a good zonation down the shore. Well developed lichen zones and littoral reef communities offering a high species richness in the sublittoral fringe and strong populations of the Purple Sea Urchin Paracentrotus lividus are found. The communities found are tolerant to sand scour and tidal streams. The infralittoral reefs range from sloping platforms with some vertical steps, to ridged bedrock with gullies of sand between the ridges, to ridged bedrock with boulders or a mixture of cobbles, gravel and sand. Kelp is very common to about 18 m. Below this it becomes rare and the community is characterised by coralline crusts and red foliose algae.

Other coastal habitats that occur within the site include stony beaches and bedrock shores (these support a typical zonation of seaweeds such as Fucus spp., Ascophyllum nodosum and kelps), shingle beaches (with species such as Sea Beet, Sea Mayweed - Matricaria maritima, Sea Campion and Curled Dock - Rumex crispus), sandbanks which are slightly covered by sea water at all times (e.g. in the area from Kerry Head to Beal Head) and sand dunes (a small area occurs at Beal Point, where Marram – Ammophila arenaria is the dominant species).

Freshwater rivers have been included in the site, most notably the Feale and Mulkear catchments, the Shannon from Killaloe to Limerick (along with some of its tributaries, including a short stretch of the Kilmastulla River), the Fergus up as far as Ennis, and the Cloon River. These systems are very different in character: the Shannon is broad, generally slow flowing and naturally eutrophic; the Fergus is smaller and alkaline; while the narrow, fast flowing Cloon is acid in nature. The Feale and Mulkear catchments exhibit all the aspects of a river from source to mouth. Semi-natural habitats, such as wet grassland, wet woodland and marsh occur by the rivers, but improved grassland is the most common habitat type. One grassland type of particular conservation significance, Molinia meadows, occurs in several parts of the site and the examples at Worldsend on the River Shannon are especially noteworthy. Here are found areas of wet meadow dominated by rushes (Juncus spp.) and sedges (Carex

spp.), and supporting a diverse and species-rich vegetation, including such uncommon species as Blue-eyed Grass (Sisyrinchium bermudiana) and Pale Sedge (C. pallescens).

Floating river vegetation characterised by species of water-crowfoot (Ranunculus spp.), pondweeds (Potamogeton spp.) and the moss Fontinalius antipyretica are present throughout the major river systems within the site. The rivers contain an interesting bryoflora with Schistidium alpicola var. alpicola recorded from in-stream boulders on the Bilboa, new to Co. Limerick.

Alluvial woodland occurs on the banks of the Shannon and on islands in the vicinity of the University of Limerick. The woodland is up to 50 m wide on the banks and somewhat wider on the largest island. The most prominent woodland type is gallery woodland where White Willow (Salix alba) dominates the tree layer with occasional Alder (Alnus glutinosa). The shrub layer consists of various willow species with Rusty Willow (Salix cinerea ssp. oleifolia) and what appear to be hybrids of S. alba x S. viminalis. The herbaceous layer consists of tall perennial herbs. A fringe of bulrush (Typha sp.) occurs on the river side of the woodland. On slightly higher ground above the wet woodland and on the raised embankment remnants of mixed oak-ashalder woodland occur. These are poorly developed and contain numerous exotic species but locally there are signs that it is invading open grassland. Alder is the principal tree species, with occasional Pedunculate Oak (Quercus robur), elm (Ulmus glabra and U. procera), Hazel (Corylus avellana), Hawthorn (Crataegus monogyna) and the shrubs Guelder-rose (Viburnum opulus) and willows. The ground flora is speciesrich.

While woodland is infrequent within the site, however Cahiracon Wood contains a strip of old oak woodland. Sessile Oak (Q. petraea) forms the canopy, with an understorey of Hazel and Holly (Ilex aquifolium). Great Wood-rush (Luzula sylvatica) dominates the ground flora. Less common species present include Great Horsetail (Equisetum telmeteia) and Pendulous Sedge (Carex pendula).

In the low hills to the south of the Slievefelim Mountains, the Cahernahallia River cuts a valley through the Upper Silurian rocks. For approximately 2 km south of Cappagh Bridge at Knockanavar, the valley sides are wooded. The woodland consists of birch (Betula spp.), Hazel, oak, Rowan (Sorbus aucuparia), some Ash (Fraxinus excelsior) and willow (Salix spp.). Most of the valley is not grazed by stock, and as a result the trees are regenerating well. The ground flora features prominent Great wood-rush and Bilberry (Vaccinium myrtillus), along with a typical range of woodland herbs. Bracken (Pteridium aquilinum) is a feature in areas where there is more light available.

The valley sides of the Bilboa and Gortnageragh Rivers, on higher ground north-east of Cappamore, support patches of semi-natural broadleaf woodland dominated by Ash, Hazel, oak and birch. There is a good scrub layer with Hawthorn, willow, Holly and Blackthorn (Prunus spinosa) common. The herb layer in these woodlands is often open, with a typically rich mixture of woodland herbs and ferns. Moss species diversity is high. The woodlands are ungrazed. The Hazel is actively coppiced in places.

There is a small area of actively regenerating cut-away raised bog at Ballyrorheen. It is situated approximately 5 km north-west of Cappamore in Co. Limerick. The bog contains some wet areas with good cover of bog mosses (Sphagnum spp.). Species of particular interest include Cranberry (Vaccinium oxycoccos) and White Sedge (Carex curta), along with two regionally rare mosses, including the bog moss S. fimbriatum. The site is being invaded by Downy Birch (Betula pubescens) scrub woodland. Both commercial forestry and the spread of Rhododendron (Rhododendron ponticum) has greatly reduced the overall value of the site.

A number of plant species that are listed in the Irish Red Data Book occur within the site, and several of these are protected under the Flora (Protection) Order, 1999. These include Triangular Club-rush (Scirpus triquetrus), a species which is only found in Ireland only in the Shannon Estuary, where it borders creeks in the inner estuary. Opposite-leaved Pondweed (Groenlandia densa) is found in the Shannon where it passes through Limerick City, while Meadow Barley (Hordeum secalinum) is abundant in saltmarshes at Ringmoylan and Mantlehill. Hairy Violet (Viola hirta) occurs in the Askeaton/Foynes area. Golden Dock (Rumex maritimus) is noted as occurring in the River Fergus estuary. Finally, Bearded Stonewort (Chara canescens), a brackish water specialist, and Convergent Stonewort (Chara connivens) are both found in Shannon Airport Lagoon.

Overall, the Shannon and Fergus Estuaries support the largest numbers of wintering waterfowl in Ireland. The highest count in 1995-96 was 51,423 while in 1994-95 it was 62,701. Species listed on Annex I of the E.U. Birds Directive which contributed to these totals include: Great Northern Diver (3; 1994/95), Whooper Swan (201; 1995/96), Pale-bellied Brent Goose (246; 1995/96), Golden Plover (11,067; 1994/95) and Bartailed Godwit (476; 1995/96). In the past, three separate flocks of Greenland Whitefronted Goose were regularly found, but none were seen in 1993/94.

Other wintering waders and wildfowl present include Greylag Goose (216; 1995/96), Shelduck (1,060; 1995/96), Wigeon (5,976; 1995/96), Teal (2,319; 1995-96), Mallard (528; 1995/96), Pintail (45; 1995/96), Shoveler (84; 1995/96), Tufted Duck (272; 1995/96), Scaup (121; 1995/96), Ringed Plover (240; 1995/96), Grey Plover (750; 1995/96), Lapwing (24,581; 1995/96), Knot (800; 1995/96), Dunlin (20,100; 1995/96), Snipe (719, 1995/96), Black-tailed Godwit (1,062; 1995/96), Curlew (1,504; 1995/96), Redshank (3,228; 1995/96), Greenshank (36; 1995/96) and Turnstone (107; 1995/96). A number of wintering gulls are also present, including Black-headed Gull (2,216; 1995/96), Common Gull (366; 1995/96) and Lesser Black-backed Gull (100; 1994/95). This is the most important coastal site in Ireland for a number of the waders including Lapwing, Dunlin, Snipe and Redshank. It also provides an important staging ground for species such as Black-tailed Godwit and Greenshank.

A number of species listed on Annex I of the E.U. Birds Directive breed within the site. These include Peregine Falcon (2-3 pairs), Sandwich Tern (34 pairs on Rat Island, 1995), Common Tern (15 pairs: 2 on Sturamus Island and 13 on Rat Island, 1995), Chough (14-41 pairs, 1992) and Kingfisher. Other breeding birds of note include Kittiwake (690 pairs at Loop Head, 1987) and Guillemot (4,010 individuals at Loop Head, 1987).

There is a resident population of Bottle-nosed Dolphin in the Shannon Estuary. This is the only known resident population of this E.U. Habitats Directive Annex II species in Ireland. The population is estimated (in 2006) to be 140 ± 12 individuals. Otter, a species also listed on Annex II of this Directive, is commonly found on the site.

Five species of fish listed on Annex II of the E.U. Habitats Directive are found within the site. These are Sea Lamprey (Petromyzon marinus), Brook Lamprey (Lampetra planeri), River Lamprey (Lampetra fluviatilis), Twaite Shad (Allosa fallax fallax) and Salmon (Salmo salar). The three lampreys and Salmon have all been observed spawning in the lower Shannon or its tributaries. The Fergus is important in its lower reaches for spring salmon, while the Mulkear catchment excels as a grilse fishery, though spring fish are caught on the actual Mulkear River. The Feale is important for both types. Twaite Shad is not

thought to spawn within the site. There are few other river systems in Ireland which contain all three species of lamprey.

Two additional fish species of note, listed in the Irish Red Data Book, also occur, namely Smelt (Osmerus eperlanus) and Pollan (Coregonus autumnalis pollan). Only the former has been observed spawning in the Shannon.

Freshwater Pearl Mussel (Margaritifera margaritifera), a species listed on Annex II of the E.U. Habitats Directive, occurs abundantly in parts of the Cloon River.

There is a wide range of land uses within the site. The most common use of the terrestrial parts is grazing by cattle, and some areas have been damaged through over-grazing and poaching. Much of the land adjacent to the rivers and estuaries has been improved or reclaimed and is protected by embankments (especially along the Fergus estuary). Further, reclamation continues to pose a threat, as do flood relief works (e.g. dredging of rivers). Gravel extraction poses a major threat on the Feale.

In the past, cord-grass (Spartina sp.) was planted to assist in land reclamation. This has spread widely, and may oust less vigorous colonisers of mud and may also reduce the area of mudflat available to feeding birds.

Domestic and industrial wastes are discharged into the Shannon, but water quality is generally satisfactory, except in the upper estuary where it reflects the sewage load from Limerick City. Analyses for trace metals suggest a relatively clean estuary with no influences of industrial discharges apparent. Further industrial development along the Shannon and water polluting operations are potential threats.

Fishing is a main tourist attraction on the Shannon and there are a large number of angler associations, some with a number of beats. Fishing stands and styles have been erected in places. The River Feale is a designated Salmonid Water under the E.U. Freshwater Fish Directive. Other uses of the site include commercial angling, oyster farming, boating (including dolphin-watching trips) and shooting. Some of these may pose threats to the birds and dolphins through disturbance. Specific threats to the dolphins include underwater acoustic disturbance, entanglement in fishing gear and collisions with fast moving craft.

This site is of great ecological interest as it contains a high number of habitats and species listed on Annexes I and II of the E.U. Habitats Directive, including the priority habitats lagoon and alluvial woodland, the only known resident population of Bottle-nosed Dolphin in Ireland and all three Irish lamprey species. A good number of Red Data Book species are also present, perhaps most notably the thriving populations of Triangular Club-rush. A number of species listed on Annex I of the E.U. Birds Directive are also present, either wintering or breeding. Indeed, the Shannon and Fergus Estuaries form the largest estuarine complex in Ireland and support more wintering wildfowl and waders than any other site in the country. Most of the estuarine part of the site has been designated a Special Protection Area (SPA), under the E.U. Birds Directive, primarily to protect the large numbers of migratory birds present in winter

SITE NAME: RIVER SHANNON AND RIVER FERGUS ESTUARIES SPA
SITE CODE: 004077

The estuaries of the River Shannon and River Fergus form the largest estuarine complex in Ireland. The site comprises the entire estuarine habitat from Limerick City westwards as far as Doonaha in Co. Clare and Dooneen Point in Co. Kerry.

The site has vast expanses of intertidal flats which contain a diverse macroinvertebrate community, e.g. Macoma-Scrobicularia-Nereis, which provides a rich food resource for the wintering birds. Salt marsh vegetation frequently fringes the mudflats and this provides important high tide roost areas for the wintering birds. Elsewhere in the site the shoreline comprises stony or shingle beaches.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Cormorant, Whooper Swan, Lightbellied Brent Goose, Shelduck, Wigeon, Teal, Pintail, Shoveler, Scaup, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Greenshank and Black-headed Gull. It is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is the most important coastal wetland site in the country and regularly supports in excess of 50,000 wintering waterfowl (57,133 - five year mean for the period 1995/96 to 1999/2000), a concentration easily of international importance. The site has internationally important populations of Light-bellied Brent Goose (494), Dunlin (15,131), Black-tailed Godwit (2,035) and Redshank (2,645). A further 17 species have populations of national importance, i.e. Cormorant (245), Whooper Swan (118), Shelduck (1,025), Wigeon (3,761), Teal (2,260), Pintail (62), Shoveler (107), Scaup (102), Ringed Plover (223), Golden Plover (5,664), Grey Plover (558), Lapwing (15,126), Knot (2,015), Bar-tailed Godwit (460), Curlew (2,396), Greenshank (61) and Black-headed Gull (2,681) - figures are five year mean peak counts for the period 1995/96 to 1999/2000. The site is among the most important in the country for several of these species, notably Dunlin (13 % of national total), Lapwing (6% of national total) and Redshank (9% of national total).

The site also supports a nationally important breeding population of Cormorant (93 pairs in 2010).

Other species that occur include Mute Swan (103), Mallard (441), Red-breasted Merganser (20), Great Crested Grebe (50), Grey Heron (38), Oystercatcher (551), Turnstone (124) and Common Gull (445) - figures are five year mean peak counts for the period 1995/96 to 1999/2000.

Apart from the wintering birds, large numbers of some species also pass through the site whilst on migration in spring and/or autumn.

The River Shannon and River Fergus Estuaries SPA is an internationally important site that supports an assemblage of over 20,000 wintering waterbirds. It holds internationally important populations of four species, i.e. Light-bellied Brent Goose, Dunlin, Black-tailed Godwit and Redshank. In addition, there are 17 species that have wintering populations of national importance. The site also supports a nationally important breeding population of Cormorant. Of particular note is that three of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover and Bar-tailed Godwit. Parts of the River Shannon and River Fergus Estuaries SPA are Wildfowl Sanctuaries.