Russell Environmental and Sustainability Services Limited

PART 2

NATURA IMPACT STATEMENT

In support of Stage 2 Appropriate Assessment

Whitebox Student Campus Development at Groody Road, Newcastle, Castletroy, Limerick.
29th of January 2025

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1.0 Introduction

This Natura Impact Statement has been prepared by Russell Environmental and Sustainability Services Limited (RESS Ltd.) on behalf Groody Developments Limited, to conduct an Article 6 (3) Appropriate Assessment of the proposed Whitebox Student Campus Development at Groody Road, Newcastle, Castletroy, Limerick.

A Stage 1 Screening for Appropriate Assessment was completed for the proposed development (The Longitude is -8.5800219 and Latitude: 52.6632073 (EPA, 2024)) which is located in Part 1. The location of the proposed development site in relation to the European Sites is detailed in Figures 1 and 2.

1.1 Background

The screening assessment in Part 1 concluded as follows:

In conclusion…… the effects to the qualifying species and habitats of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA, there is a potential indirect risk from particulate laden runoff and pollution runoff from the development site into the adjacent drainage ditch and River Groody, into the European Sites during both the construction and operation phases (RESS Ltd, 2024)

As a result, the development cannot be 'screened out' and a Stage 2 Appropriate Assessment (AA) is required for the Lower River Shannon SAC IE0002165 and River Shannon and River Fergus Estuaries SPA IE004077. Table 1 below provides a screening summary and identifies the potential impacts that could not be excluded at screening stage.

European Site	**Distance from Proposed Development**	**Screening Summary**
Lower River Shannon SAC River Shannon and River Fergus Estuaries SPA	780m following water courses 4.5km following water courses	There are potential direct impacts on Otter *Lutra lutra* as the site of the proposed development is located approximately 780m from the SAC and therefore requires further assessment There are potential pathways for indirect impact on the Annex species of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. These have been identified in the form of emissions to surface water which has the potential to affect the supporting habitat of the species downstream of the proposed development site. Consequently, the potential for indirect impacts on the Annex species associated with the SAC and SPA requires further assessment.

Table 1 Natura 2000 Sites that have been 'Screened In'

Figure 1 Site location in relation to the flow network and Lower River Shannon SAC (EPA, 2025)

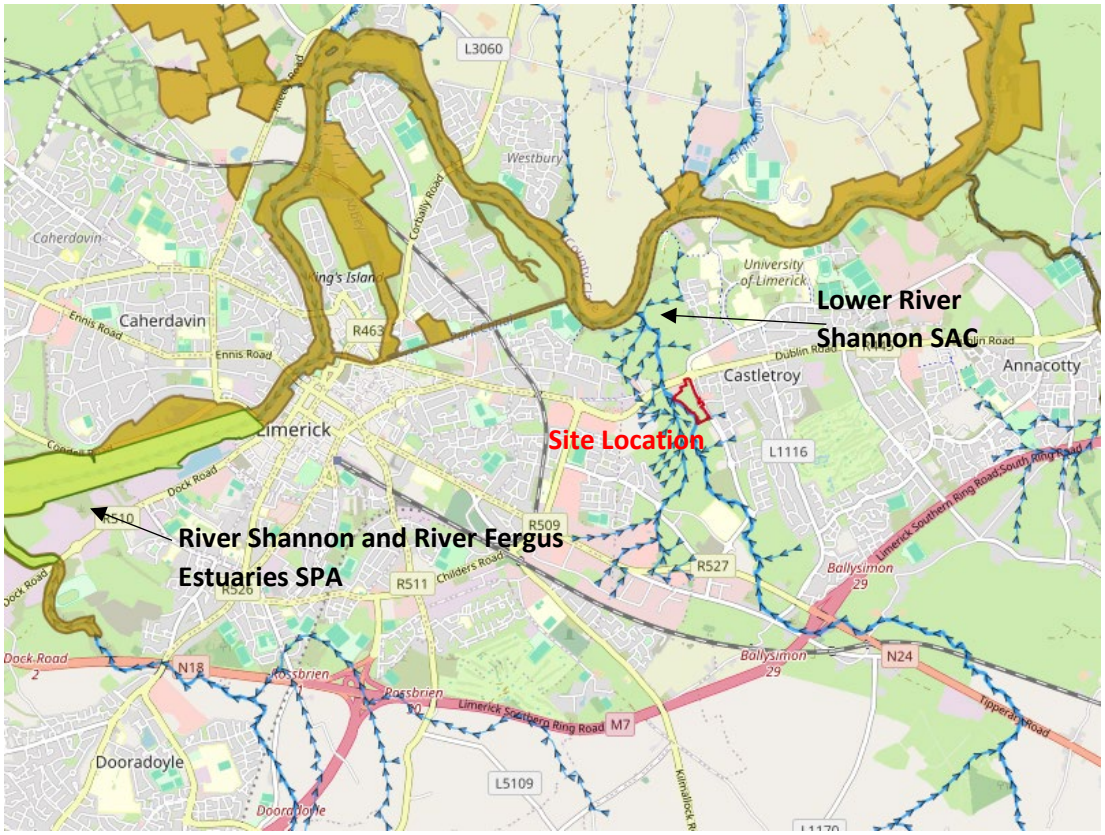

Figure 2 Site flow network and connections with both Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA (EPA, 2025).

1.2 Legislative Context

In light of the findings of the Stage 1 Screening Report, a Natura Impact Statement has now been prepared having regard to the European Commission guidance document Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001) and the Department of the Environment's Guidance on the Appropriate Assessment of Plans and Projects in Ireland (December 2009, amended February 2010).

1.2.1 EU Habitats Directive

Article 6(1) and article 6(2) of Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora aims to promote the maintenance of biodiversity. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments." (EEC, 1992).

Article 6(1) and 6(2) are concerned with Special Areas of Conservation (SAC), whereby Member States are required to establish necessary conservation measures and appropriate statutory measures to ensure the protection of natural habitat types in Annex I and the species in Annex II present on the sites. This includes the avoiding the deterioration of natural habitats as well as the disturbance of any species included in Annex II (EHLG, 2009, p18).

The focus of Appropriate Assessment (AA) is targeted specifically on Natura 2000 sites and their conservation objectives. Articles 6(3) and 6(4) of the Habitats Directive (including the Birds Directive) place strict legal obligations on Member States, with the outcomes of AA fundamentally affecting the decisions that may lawfully be made. Articles 6(3) and 6(4) also detail the procedures to be completed when a development is likely to or has affected a Natura 2000 site. The Lower River Shannon Special Area of Conservation (SAC) and River Shannon and River Fergus Estuaries Special Protection Area (SPA) are within 15km of the site. As both SAC and SPA sites are European sites and thus Natura 2000 sites (EHLG, 2009, p18).

Articles 6(3) and 6(4) are detailed as follows:

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. 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.

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, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission to other imperative reasons of overriding public interest (EHLG, 2009, p18).

1.2.2 Stage 1 and 2 Appropriate Assessment

There are four stages involved in completing an AA. Stages 1-2 deal with the main requirements for assessment under Article 6(3). Stage 3 may be part of Article 6(3) or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Stage 1. Screening for Appropriate Assessment Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

i) whether a plan or project is directly connected to or necessary for the management of the site.

ii) whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or it the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA) (EHLG, 2009, p27).

Stage 2 for Appropriate Assessment

This stage considers whether the plan or project, alone or in combination with other project or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures to avoid, reduce or offset negative effects. The proponent of the plan or project will be required to submit a Natura Impact Statement i.e., the report of targeted professionals' scientific examination of the plan or project and the relevant Natura 2000 sites, to identify and characterise any possible implications for the site in view of the conservation objectives, taking into account of in combination effects (EHLG, 2009, p28).

As the site is adjacent to a hydrological link to an SAC and SPA, an Appropriate Assessment (Stage Two) is required to determine the effect that the proposed development will have on the Annex I habitat and Annex II species as per Article 6(3) and 6(4) that detail the procedures to be completed when a development is likely to or has affected a Natura 2000 site.

1.3 Appropriate Assessment Methodology

The information contained in this NIS is designed to allow the Competent Authority to assess:

1) the implications of the project, alone or in combination with other plans and projects, for a European Site in view of its Conservation Objectives,
2) whether there will be any adverse effects on the integrity of a European Site.

Firstly, in Section 1 the background and legislative context is outlined.

In Section 2 of the report, the proposed development is fully described. Following on from this, the details of the results of the desk and field surveys that were undertaken are provided to provide all necessary details of the ecological baseline conditions at the site of the proposed development.

The interaction of the proposed development on the baseline environment is then considered in the context of potential effects thereon. This is undertaken with particular reference to the potential for the proposed development to result in adverse effects on the integrity of any European Site.

In Section 3, Qualifying Interests and Conservation Objectives of the "screened in" European sites are described, with subsequent identification of potential pathways for effects on each individual Qualifying Interest. Where potential pathways for effects are identified, the potential for adverse effects on the Qualifying Interest is assessed with respect to the national level pressures and threats.

Where available, the site-specific attributes and targets, associated with the individual Qualifying Interest, are also assessed with regard to the proposed development taking into consideration best practice and design features.

The assessment of potential adverse effects follows the precautionary principle as detailed in Article 191 of the Treaty on the Functioning of the European Union (EU). It aims at ensuring a higher level of environmental protection through preventative decision-taking in the case of risk and underpins the Habitats Directive (EEC, 2019). The precautionary principle is the underlying concept of sustainable development which implies that prudent action be taken to protect the environment even in the absence of scientific certainty (EEC, 2019).

In Section 4 the preventative measures to avoid impact are detailed, in particular the direct and indirect impacts on the EU Sites. The impact

during the construction phase is considered and the mitigation measures are proposed.
Following the assessment of potential adverse effects on European Sites resulting from the project itself, a further assessment of the potential for effects when the project is considered cumulatively and in combination with other proposed developments is made in Section 5.

Finally, in Section 6, a concluding statement is made. This includes a summary of the results of the assessment and the potential adverse effects on the integrity of the European Sites (limited to the Conservation Objectives of the site) (EEC, 2019).

The information contained in this report will allow the Competent Authority to determine that the proposed development will not adversely affect the integrity of the European Site.

1.4 Author of the Report

Russell Environmental and Sustainability Services Limited (RESS Ltd.) were contracted by Groody Developments Limited to complete a Natura Impact Statement (NIS). This was in preparation for the planning application for the proposed Whitebox Student Campus Development at Groody Road, Newcastle, Castletroy, Limerick, as the Stage 1 for Appropriate Assessment 'screened in' for the Lower River Shannon SAC IE002165 and River Shannon and River Fergus Estuaries SPA IE 004077. Therefore, it was deemed necessary to prepare an NIS as the site is adjacent to a hydrological link to the SAC and down river to the SPA. The site was surveyed on the 6th of January 2024 by qualified ecologists from RESS Ltd.

2.0 Description of the Proposed Development and Baseline Information

2.1 Description of the Proposed Development

Groody Developments Limited seeks planning permission for development of a Purpose-Built Student Accommodation (PBSA) scheme on land fronting the Groody Road and Dublin Road, Castletroy, in the townland of Newcastle, Limerick for a period of seven years.

The development consisting of 196 no. Bed Clusters, is distributed across 5 no. separate blocks, ranging in height from 5 - 8 storeys, with a total of 1,400 no. student bedspaces to be delivered in two phases of development including: (i) Block A comprising 8 storeys providing for (a) 28 no. bed clusters and 224 no. bedspaces; (b) Student library; (c) Student union; (d) Plant room; (e) Bin store; (f) Bicycle store; (ii) Block B comprising 7 storeys providing for (a) 52 no. bed clusters and 400 no. bedspaces; (b) Reception and Office; (c) Post room; (d) Laundry room; (e) Student canteen; (f) Maintenance store; (g) Plant room; (h) ESB substation &; switch room; (i) Bin Storage; (j) and Bicycle store; (iii) Block

C comprising 6 storeys providing for (a) 51 no. bed clusters and 355 no. bedspaces; (b) Student Gym; (c) Maintenance store; (d)Plant room; (e) ESB substation &; switch room; (f) Bin Storage; (g) and Bicycle store; (iv) Block D comprising 6 storeys providing for (a) 32 no. bed clusters and 211 no. bedspaces; (b) Reception &; Office; (c) Post room; (d) Laundry room; (e) Student canteen; (f) Student supply retail unit (60m2); (g) Plant room; (h) Maintenance store; (i) Bin Storage; and (k) Bicycle Storage; (v) Block E comprising 5 storeys providing for (a) 33 no. bed clusters and 210 no. bedspaces; (b) Reception &; Office; (c) Laundry room; (d) Maintenance store; (e) Bicycle store; and (f) Plant room; and (vi) ancillary site development works including car and bicycle parking provision; boundary treatments; roof plant; public lighting; water supply; foul and surface water drainage infrastructure; signage; and a temporary construction access to facilitate Phase 2.

Vehicular access to the site will be from the Groody Road with pedestrian access to the Dublin Road. Extensive landscaping proposals, including (a) landscaped courtyards; (b) pedestrian and cycle connections from the Groody Road to the Groody Green Wedge; (c) natural landscaping and public walkways within the Groody Green Wedge; and (d) a Wetland area adjacent to the Groody River are also proposed. Planning permission is also sought for use of the accommodation, outside of student term time, for short-term letting purposes.

2.2 Baseline Ecology of the Site

The Qualifying Interest (QI) species associated with the Lower River Shannon SAC and the River Shannon and River Fergus Estuaries SPA were identified, for which potential pathways for impact require further assessment, were identified at the screening stage (Part 1). The sections below describe the details of the desk study and field surveys undertaken to inform this assessment regarding the QI species.

2.2.1 Desk Study

The EPA provides the AA Geotool that is a database of the protected sites and associated flow network for water courses within Ireland. The flow network as detailed in Section 2.3 in Part 1, identified a drainage ditch adjacent to the southern boundary of the site and the River Groody adjacent to the eastern boundary. The latter which connects directly with the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA down river (Part 1, Figure 2 and Figure 3).

The NBDC provides a national database of biological records from Ireland. The database was consulted with regard to all QI species records within the area, which the proposed development is located. The site is located in the tetrad Grid 65D.

Of the QI species for the Lower River Shannon SAC, Otter and Bottlenosed dolphin were the only species recorded in the vicinity of the site as detailed in Table 2.

Otter *Lutra lutra*			**Bottle-nosed dolphin *Tursiops truncatus***		
Grid	**Location**	**Date**	**Grid**	**Location**	**Date**
R613584	University of Limerick	2018	R566567	River Shannon, Limerick City	2020
R600578	Limerick City	2012			
R575576	Curragower	2018			
R573571	Limerick City	2018			

Table 2 Records for species of the Lower River Shannon SAC (Biodiversity Ireland, 2024).

The most recent records for Otter *Lutra Lutra* were, recorded as part of the Mammals of Ireland Survey 2016-25 (NBDC, 2023). The most recent record for the Bottle-nosed dolphin *Tursiops truncatus* were recorded as part of the IWDG Casual Cetacean Sightings in 2020. Otter *Lutra lutra* are also mapped near to the section of the River Shannon that connects with the River Groody in the Conservation Objectives for the Lower River Shannon SAC (NPWS, 2012a). The record for Bottlnosed dolphin *Tursiops truncatus* is approximately 7km downriver from where the River Groody connects with the River Shannon and 8km from the site.

Three habitats detailed on the Conservation Objectives (NPWS, 2012a) are located near to the site which are Estuaries, Mudflats and Sandbanks and Water Courses of Plain to Montane Levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* Vegetation (NPWS, 2012a).

The NPWS Lower River Shannon SAC Site Synopsis, Conservation Interests and Natura Data were reviewed (Site Synopsis, Appendix ii, Conservation Objectives Part 1, Appendix ii) and evaluated for potential pathways for impacts as detailed in Table 3.

Habitat Code	**Habitat**	**Potential Pathway for Impacts**	**Potential for significant effects**
1110	Sandbanks	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts as water dilution would minimise impacts
1130	Estuaries	Yes, slight	Located at the connection point with the River Groody
1140	Tidal Mudflats and Sandflats	Yes, slight	Located at the connection point with the River Groody
1150	Coastal Lagoons*	No	No, down river and some distance from the site and therefore

			geographical separation, so no potential pathway for impacts
1160	Large Shallow Inlets and Bays	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts
1170	Reefs	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts
1220	Perennial Vegetation of Stony Banks	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts
1230	Vegetated Sea Cliffs	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts
1310	Salicornia Mud	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts as water dilution would minimise impacts
1330	Atlantic Salt Meadows	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts as water dilution would minimise impacts
1410	Mediterranean Salt Meadows	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts as water dilution would minimise impacts
3260	Water courses of plain to montane levels with the *R. fluitantis* and *Callitricho-Batrachion* vegetation	Yes, slight	In the vicinity of the site, therefore potential pathway for impacts (Grid R55Y)
6410	*Molinia* meadows	No	No, down river and some distance from the site and therefore geographical separation, so no potential pathway for impacts
91E0	Alluvial Forests*	No	Upriver and therefore geographical separation, so no potential pathway for impacts
Species Code	**Species**	**Potential Pathway for**	**Potential for significant effects**

		Impacts	
1029	Freshwater Pearl Mussel (*Margaritifera margaritifera*)	No	Upriver, therefore geographical separation, so no potential pathway for impacts
1095	Sea Lamprey (*Petromyzon marinus*)	No	Upriver, therefore geographical separation, so no potential pathway for impacts
1096	Brook Lamprey (*Lampetra planeri*)	No	Not in the flow network at this point or down river so no potential pathway for impacts
1099	River Lamprey (*Lampetra fluviatilis*)	No	Not in the flow network at this point or down river so no potential pathway for impacts
1106	Atlantic Salmon (*Salmo salar*)	No	Not in the flow network at this point or down river so no potential pathway for impacts
1349	Bottle-nosed Dolphin (*Tursiops truncates)*	Yes, but unlikely	A record 8km from the site (following the course of the river) of and therefore potential indirect pathway for impacts, however unlikely given that the pod inhabits the mouth of the River Shannon estuary and occasionally travels upriver in the River Shannon.
1355	Otter (*Lutra lutra*)	Yes	A number of records in the vicinity of the site and therefore potential direct pathway for impacts as potential to inhabit the site (see Table 2)

*Table 3 Qualifying habitats and species of the Lower River Shannon SAC, * are priority species and habitats (NPWS, 2012a)*

Of the QI species of the River Shannon and River Fergus Estuaries SPA, the majority of the species were recorded in the vicinity of the site and the details of the records, their conservation status and population trend are identified in Table 3. The Conservation Objectives for all of the QI species for the SPA *"is to maintain the favourable conservation condition" (NPWS, 2012b)* (Part 1, Appendix iii).

Species	Likelihood of Impact	Grid	Dataset (NBDC, 2021)	Conservation Status (Nelson et al., 2019)	Population Trend (NPWS, 2012b)
Cormorant (Phalacrocorax carbo) [A017]	Slight	R580599	Birds of Ireland 2018	Amber	No significant decline
Whooper Swan (Cygnus cygnus) [A038]	Sligh	R55T	Bird Atlas 2007-11	Annex I, Amber	Long term population trend stable or increasing

Light-bellied Brent Goose (Branta bernicla hrota) [A046]	None	No records		Amber	Long term population trend stable or increasing
Shelduck (Tadorna tadorna) [A048]	Slight	R55I	Bird Atlas 2007-11	Amber	Long term population trend stable or increasing
Wigeon (Anas penelope) [A050]	Slight	R528565	Birds of Ireland 2018	x	Long term population trend stable or increasing
Teal (Anas crecca) [A052]	Slight	R65E	Birds of Ireland 2020	Amber	Long term population trend stable or increasing
Pintail (Anas acuta) [A054]	Slight	R55I	Bird Atlas 2007-11	Red	Long term population trend stable or increasing
Shoveler (Anas clypeata) [A056]	Slight	R528565	Bird of Ireland 2018	x	Long term population trend stable or increasing
Scaup (Aythya marila) [A062]	Slight	R55Z	Bird Atlas 2007-11	Amber	Long term population trend stable or increasing
Ringed Plover (Charadrius hiaticula) [A137]	Slight	R55I	Bird Atlas 2007-11	x	Long term population trend stable or increasing
Golden Plover (Pluvialis apricaria) [A140]	Slight	R678587	Birds of Ireland 2018	Annex I, Red	Long term population trend stable or increasing
Grey Plover (Pluvialis squatarola) [A141]	None. In Estuary	R35T	Bird Atlas 2007 - 2011	Amber	Long term population trend stable or increasing
Lapwing (Vanellus	Slight	R605571	Birds of Ireland 2021	Red	Long term population trend stable

vanellus) [A142]					or increasing
Knot (Calidris canutus) [A143]	None. In Estuary	R45D	Bird Atlas 2007 - 2011	Amber	Long term population trend stable or increasing
Dunlin (Calidris alpina) [A149]	Slight	R55M	Bird Atlas 2007-11	Annex I, Red	Long term population trend stable or increasing
Black-tailed Godwit (Limosa limosa) [A156]	Slight	R5256	Local Bioblitz Challenge 2013	Amber	Long term population trend stable or increasing
Bar-tailed Godwit (Limosa lapponica) [A157]	None. In Estuary	R45	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Annex I, Amber	Long term population trend stable or increasing
Curlew (Numenius arquata) [A160]	Slight	R603578	Birds of Ireland	Red	Long term population trend stable or increasing
Redshank (Tringa totanus) [A162]	Slight	R5256	Local Bioblitz Challenge 2013	X	Long term population trend stable or increasing
Greenshank (Tringa nebularia) [A164]	Slight	R55I/55M	Bird Atlas 2007-11	X	Long term population trend stable or increasing
Black-headed Gull (Chroicocephalus ridibundus) [A179]	Slight	R631572	Birds of Ireland 2023	X	Long term population trend stable or increasing

Table 4 Details of the Qualifying Species of the River Shannon and River Fergus Estuaries SPA (Biodiversity Ireland, 2024).

As none of these species were recorded on the site and the long-term population trend is stable or increasing for all species listed in Table 4, the proposed development is unlikely to have any significant impact, both directly or indirectly as there are no direct pathways for impact. However the water quality

could potentially be affected as a result of emissions from the proposed development and as these species are mobile, there is a potential effect on their food sources within the River Shannon and associated habitats such as estuaries, tidal mudflats and sandflats and watercourse of plain to montane levels as well as any areas of the floodplain within close proximity of the site. Hence, these species have been further evaluated collectively in Section 3.1.3.

2.2.2 Field Survey

Flora

The vegetation survey that took place was based on the Best Practice Guidance for Habitat Surveying and Mapping (Smith *et al.*, 2011) whereby the habitats are classified according to Fossitt (2000). In addition, the habitats mapped were compared with the habitats and indicator species listed for the Lower River Shannon SAC. The details of these are in Part 1, Stage 1 Screening for AA and in Appendix i.

Within the site and adjacent to it, there were six vegetation habitats identified (Fossitt, 2000). These were as follows:

GA1 Improved grassland
WS1 Scrub
WD5 Scattered Trees
WL2 Treeline
FW4 Drainage Ditch
FW2 Depositing Lowland River

There were no Qualifying Habitats or Annex I habitats identified on the site.

Fauna

The site was surveyed on the 6th of January 2024 and was comprehensively searched for signs of Otter *Lutra lutra* activity (spraints, resting or breeding sites). There was no evidence of tracks or spraints or suitable resting or breeding sites.

There was also no evidence of overwintering species of birds.

No rare species were recorded on the site at the time of surveying. No other Qualifying Interest species were identified on the site or adjacent to it during the survey.

3.0 Assessment of Likely Significant Effects on European sites.

The Stage 1 AA Screening Report in Part 1 of this document screens in the potential for significant effects on Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA.

This Natura Impact Statement presents the data and information on the project and provides an analysis of the potential adverse effects on the above listed European Sites.

Potential adverse effects are assessed in view of best scientific knowledge, on the basis of objective information in relation to the proposed development, including the proposed avoidance, reduction and preventive measures.

3.1 Identification of Potential Impacts

The Stage 1 Screening has identified the potential for the likely effects on the River Shannon SAC and River Shannon and River Fergus Estuaries SPA. Potential significant effects on the Qualifying Interest (QI) may arise in the form of emissions from surface water resulting from the construction of the proposed development and post development during the operation of the Whitebox Student Campus Development at Groody Road. The qualifying interests for which pathways for potential impacts were identified are detailed in Table 5. As detailed in Section 2, there is a potential indirect impact for the qualifying species and habitat of the River Shannon and River Fergus Estuaries SPA in relation to the water quality of the River Shannon and its estuary and potential direct impact on Otter *Lutra lutra* (a qualifying species of the Lower River Shannon SAC).

As a number of the qualifying habitats (e.g., mudflats and sandflats, estuaries etc. (NPWS, 2012a) are recorded in or very near to the section of the River Shannon where the River Groody discharges, it is imperative that, as mentioned above, the water quality of the SPA and SAC are maintained and therefore mitigating measures are required to maintain water quality and thus eliminate impact on all the qualifying habitats and species down river of the development site.

3.1.1 Qualifying Habitats of the Lower River Shannon SAC

The conservation objectives for the species and habitat of the Lower River Shannon SAC are detailed in Table 5.

Special Conservation Interest	**Conservation Objective**
[1130] Estuaries	To maintain the favourable conservation condition of Estuaries in the Lower River Shannon SAC
[1140] Tidal Mudflats and Sandflats	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Lower River Shannon SAC
[3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and	To maintain the favourable conservation condition of Water courses of plain to montane levels with the *Ranunculion*

Callitricho-Batrachion vegetation	*fluitantis* and *Callitricho-Batrachion* vegetation in the Lower River Shannon SAC
[1355] Otter (*Lutra lutra*)	To restore the favourable conservation condition of Otter in Lower River Shannon SAC
[1349] Bottlenosed Dolphin *Tursiops truncatus*	To maintain the favourable conservation condition of Bottlenose Dolphin in the Lower River Shannon SAC

Table 5 Qualifying interest and conservation objectives (NPWS, 2017).

Estuaries

This habitat occurs north of the development site and is within the section of the River Shannon located very close to the area where the River Groody discharges and as the River Groody flows adjacent to the site this habitat requires further assessment.

Pressures	Threats
F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution (H)	F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution (H)
A28 Agricultural activities generation marine pollution (H)	A28 Agricultural activities generation marine pollution (H)
G16 Marine aquaculture generating marine pollution (H)	G16 Marine aquaculture generating marine pollution (H)
I02 Other invasive alien species (other than species of Union concern) (H)	I02 Other invasive alien species (other than species of Union concern) (H)
XU Unknown pressure (M)	

Table 6 Pressures and threats to [1130] Estuaries (NPWS, 2019a, 23) H = High importance, M = Medium importance.

As detailed in Table 6, there are no direct pressures or threats to the estuary habitat from the proposed development and thus no direct impacts. However, the overall trend in conservation status is that of deteriorating as detailed in Table 7 (NPWS, 2019a).

10 Conclusions	
Assessment of conservation status at end of reporting period	
10.1 Range	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
10.2 Area	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
10.3 Specific structure and functions (incl. typical species)	*Favourable (FV) /* ***Inadequate (U1)*** */ Bad (U2) / Unknown (XX)*
10.4 Future prospects	*Favourable (FV) /* ***Inadequate (U1)*** */ Bad (U2) / Unknown (XX)*
10.5 Overall assessment of Conservation Status	*Favourable (FV) /* ***Inadequate (U1)*** */ Bad (U2) / Unknown (XX)*
10.6 Overall trend in Conservation Status	*Indicate the trend (qualifier) for FV, U1 and U2:* *improving /* ***deteriorating*** */ stable / unknown*

Table 7 Assessment of conservation status at the end of reporting period (NPWS, 2019a p26)

As a result, implementation of mitigation measures are required to ensure that there is no impact on the water quality, either indirectly or directly as this could affect the species living within this habitat.

Tidal Mudflats and Sandflats

This habitat is also within the Lower River Shannon SAC located where the River Groody discharges and thus should be considered for further assessment.

Pressures	Threats
F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution (H)	F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution (H)
A28 Agricultural activities generation marine pollution (H)	A28 Agricultural activities generation marine pollution (H)
G16 Marine aquaculture generating marine pollution (H)	G16 Marine aquaculture generating marine pollution (H)
I02 Other invasive alien species (other than species of Union concern) (H)	I02 Other invasive alien species (other than species of Union concern) (H)

Table 8 Pressures and threats to [1140] Tidal mudflats and sandflats (NPWS, 2019a, p38) H = High importance, M = Medium importance.

As detailed in Table 8, there are no direct pressures or threats to the tidal mudflats or sandflats from the proposed construction and associated works and thus, no direct pathways of impact.

However, as the overall trend in conservation status for this habitat is also deteriorating (Table 9), it is especially important that mitigation measures should be put in place to ensure that there are no impacts from the construction

phase of the proposed development. Despite there being no identified pressures or risks, as there is a potential risk to water quality, which in turn, could have a potential impact on the species of mudflats and sandflats (NPWS, 2019).

10 Conclusions	
Assessment of conservation status at end of reporting period	
10.1 Range	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
10.2 Area	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
10.3 Specific structure and functions (incl. typical species)	*Favourable (FV) /* ***Inadequate (U1)*** */ Bad (U2) / Unknown (XX)*
10.4 Future prospects	*Favourable (FV) /* ***Inadequate (U1)*** */ Bad (U2) / Unknown (XX)*
10.5 Overall assessment of Conservation Status	*Favourable (FV) /* ***Inadequate (U1)*** */ Bad (U2) / Unknown (XX)*
10.6 Overall trend in Conservation Status	*Indicate the trend (qualifier) for FV, U1 and U2:* *improving /* ***deteriorating*** */ stable / unknown*

Table 9 Assessment of conservation status at the end of reporting period (NPWS, 2019a p42).

Water Courses of Plain to Montane Levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* Vegetation

This habitat occurs in the canal that connects two sections of the River Shannon near to the site where Close-leaved pondweed *Groenlandia densa* is found (NPWS, 2012a). In addition, Triangular club-rush *Schoenoplectus triqueter* is found further downriver (Figure 3). Both species are present in this habitat. The relevant extract from the Conservation Objectives of the Lower River Shannon SAC concerning the distribution of Water courses of plain to montane levels is as follows:

"No decline, subject to natural processes" (NPWS, 2012a, p42).

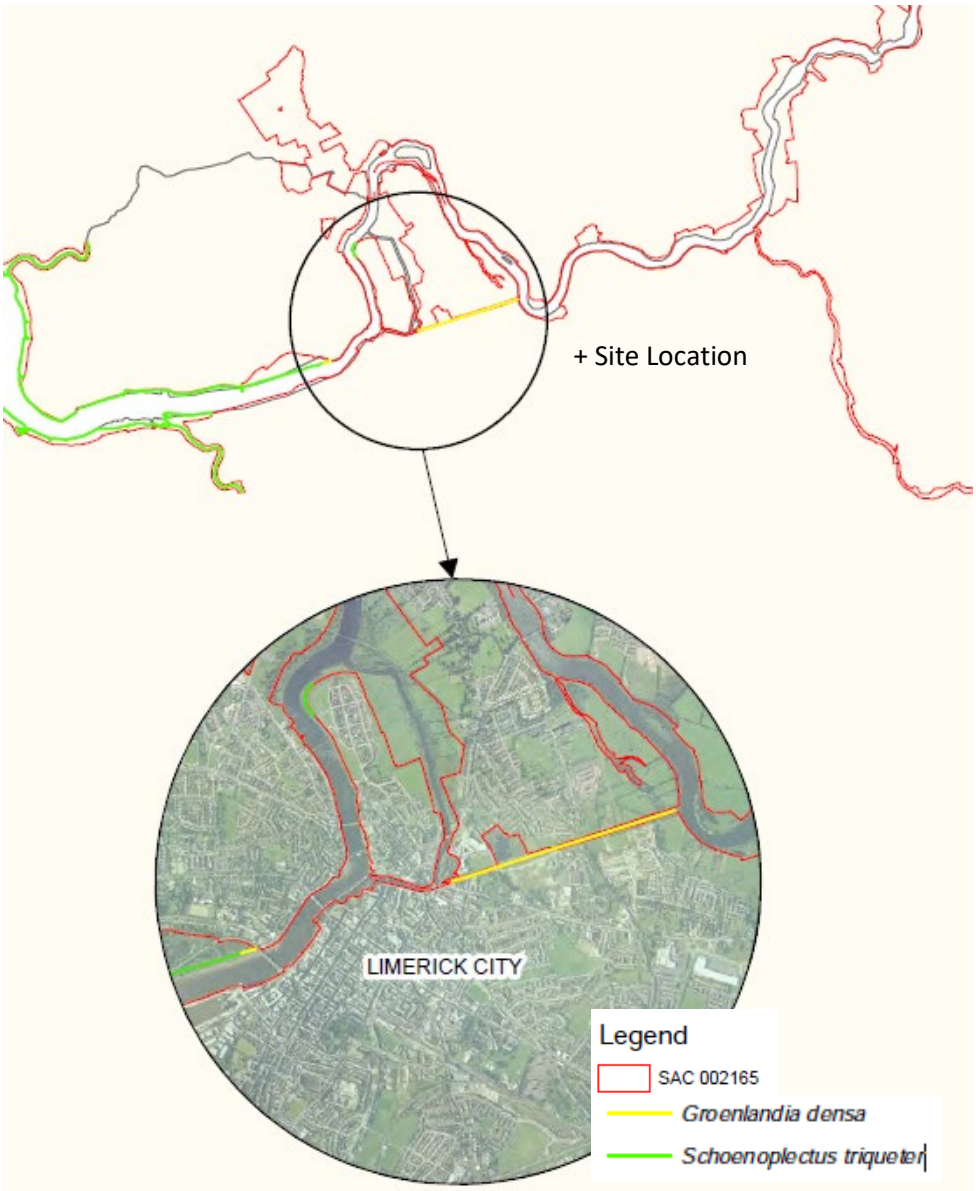

Figure 3 Water Courses of Plain to Montane Levels with the Ranunculion fluitantis and Callitricho-Batrachion Vegetation (NPWS, 2012a, Map 13).

Pressures	**Threats**
A26 Agricultural activities generating diffuse pollution to surface ground waters (H)	A26 Agricultural activities generating diffuse pollution to surface ground waters (H)
A25 Agricultural activities generating point source pollution to surface waters (H)	A25 Agricultural activities generating point source pollution to surface waters (H)
K04 Modification of hydrological flow (H)	K04 Modification of hydrological flow (H)
K05 Physical alteration of water bodies (H)	K05 Physical alteration of water bodies (H)
F12 Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (H)	F12 Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (H)

B23 Forestry activities generating pollution to surface or ground waters (M)	B23 Forestry activities generating pollution to surface or ground waters (M)
F11 Pollution to surface or ground water due to urban runoffs (M)	F11 Pollution to surface or ground water due to urban runoffs (M)
C05 Peat extraction (M)	C05 Peat extraction (M)
F13 Plants, contaminated or abandoned industrial sites generating pollution to surface or ground water (M)	F13 Plants, contaminated or abandoned industrial sites generating pollution to surface or ground water (M)
K01 Abstraction from groundwater, surface water or mixed water	K01 Abstraction from groundwater, surface water or mixed water

Table 10 Pressures and Threats to Water courses of plain to montane levels (Floating River Vegetation) (NPWS, 2019a, p489)

With reference to Table 10, there is only one potential risk and threat to the Lower River Shannon SAC habitat and thus the Water courses of plain to montane levels. This is F12 Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (H). There is also a potential of pollution from discharge of surface water during the construction phase. Although the conservation status for the range and area for this habitat are favourable, the future prospects are inadequate, and the overall trend is that of deteriorating status (NPWS, 2019a, p494). Hence, mitigating measures are required to prevent any pollution of this habitat during the construction phase and operation of the development, especially as the ecology of this habitat is very sensitive to changes in pH and nutrient content and there may be a potential decline subject to the anthropogenic processes such as pollution or discharge of particulate matter that may impact these components.

3.1.2 Qualifying Species of the Lower River Shannon SAC

Otter *Lutra lutra*

The Favourable Conservation Status (FCS) target, based on 1980/81 survey findings, is 88% in SACs. Current range is estimated at 93.6% (Reid et al. 2013).

As identified in the NPWS 2019 Article 17 Report,

`*the current population is classed as stable and that there are no pressures or threats. The Range is extensive and stable. The population is also considered to be currently stable having recovered from previous decline. The habitat niche is occupied and is generally considered to be in good condition. No significant pressures or threats were identified"* (NPWS, 2019).

There is a potential direct pathway identified of impact from the proposed development that would impact on the Otter population of the Lower River Shannon SAC as although there was no evidence on the site during the site

survey, due to the close proximity of records in the area (Table 2), there is a potential that Otters may inhabit the site in the future. There is also indirect pressures or threats on the water quality and therefore food sources and breeding habitat for this species.

According to the NPWS 2019 Article 17 Volume 3 Report, the following conclusions were made regarding the Otter *Lutra Lutra* in Ireland, as identified in Table 11. There were no main pressures or threats identified (NPWS, 2019b). However, as detailed above there is a potential for habitation of this species on the site and mitigation measures must be put in place to protect both the species and the water quality of the Groody River.

11 Conclusions			
Assessment of conservation status at end of reporting period			
11.1 Range	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*		
11.2 Population	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*		
11.3 Habitat for the species	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*		
11.4 Future prospects	***Favourable (FV)*** */ Inadequate (U1)/ Bad (U2) / Unknown (XX)*		
11.5 Overall assessment of Conservation Status	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*		
11.6 Overall trend in Conservation Status	*Indicate the trend (qualifier) for FV, U1 and U2:* ***improving*** */ deteriorating / stable / unknown*		
11.7 Change and reasons for change in conservation status and conservation status trend	*Indicate whether there is a change from the previous reporting round and (if yes) the nature of that change. More than one option (b to e) can be chosen.*		
		Overall assessment of conservation status (11.5)	***Overall trend in conservation status (11.6)***
	a) no, there is no difference	*YES/**NO***	*YES/**NO***

Table 11 Conclusions on the conservation status of Otter Lutra Lutra (NPWS, 2019b, p576).

Bottle-nosed Dolphin *Tursiops truncates*

The short-term trend for range is stable for Bottlenosed dolphin. However, the long-term trend is uncertain and similarly uncertain for the population trend (NPWS, 2019b). The habitat area for this species is much wider than the SAC, and as a result there are no direct pathways for impact. As detailed in Table 12, there are no pressures or threats that relate to the proposed development. Although the Bottle-nosed Dolphin may travel up the River Shannon where it flows through Limerick City, it is unlikely that the development will have any impact on the pod that inhabits the mouth of the River Shannon estuary. The nearest records show this species approximately 8km from the site, where the Bottle-nosed dolphin travels up the River Shannon. It is unlikely that this species

will enter the River Groody where the development site is located, due to the reduced, depth and width of this river compared with the River Shannon.

8 Main pressures and threats		
8.1 Characterisation of pressures/threats		
a) Pressure/threat	**b) Ranking of pressure/threat** *Indicate whether the pressure/threat is of:* *H = high importance (maximum of 5 entries for pressures and 5 for threats)* *M = medium importance*	
	Pressure	**Threat**
List a maximum of 10 pressures and a maximum of 10 threats using code list provided in the Reference portal	**C09** Geotechnical surveying (M) **G01** Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)	**C09** Geotechnical surveying (M) **G01** Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)

Table 12 Main pressures and threats for the Bottlenosed dolphin Tursiops truncatus (NPWS, 2019b, p654).

11 Conclusions	
Assessment of conservation status at end of reporting period	
11.1 Range	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
11.2 Population	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
11.3 Habitat for the species	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
11.4 Future prospects	***Favourable (FV)*** */ Inadequate (U1)/ Bad (U2) / Unknown (XX)*
11.5 Overall assessment of Conservation Status	***Favourable (FV)*** */ Inadequate (U1) / Bad (U2) / Unknown (XX)*
11.6 Overall trend in Conservation Status	*Indicate the trend (qualifier) for FV, U1 and U2:* *improving / deteriorating /* ***stable*** */ unknown*

Table 13 Conclusions on the conservation status for the Bottlenosed dolphin Tursiops truncatus (NPWS, 2019b, p657).

Table 13 shows that the overall conservation status for the Bottle-nosed Dolphin is favourable, and the trend is stable. Therefore, the favourable and stable status should not be impacted upon by the proposed development. As mentioned above, mitigation measures should be put in place to maintain the water quality of the River Shannon and thus the Lower River Shannon SAC.

3.1.3 Qualifying Species and Habitat of the River Shannon and River Fergus Estuaries SPA

With reference to Table 4, the majority of the species of this SPA are to be found in the vicinity of the site. Although none of the qualifying species were found on the site during the site survey, there are lands nearby that these species may occupy as well as the known areas within and adjacent to the River Shannon, hence these species have been considered collectively. The overarching

Conservation Objectives for the River Shannon and River Fergus Estuaries SPA as taken from the Conservation Objectives Supporting Document (2012c) are as follows:

"Objective 1: To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest species listed for the River Shannon and River Fergus Estuaries SPA.

This objective is defined by the following attributes and targets: -

To be favourable, the long-term population trend for each waterbird Special Conservation Interest species should be stable or increasing. Waterbird populations are deemed to be unfavourable when they have declined by 25% or more, as assessed by the most recent population trend analysis.

To be favourable, there should be no significant decrease in the range, timing or intensity of use of areas by the waterbird species of Special Conservation Interest, other than that occurring from natural patterns of variation (NPWS, 2012c, p8)"

Of the factors that can adversely affect the achievement of Objective 1, there are none that directly relate to the proposed development, provided that the development does not create a cumulative effect. Hence, mitigation measures are required to ensure that the water quality of the River Shannon is maintained as this River provides many habitats that are used for feeding by the bird species of the SPA. This also relates directly to Objective 2 which is as follows:

"Objective 2: To maintain the favourable conservation condition of the wetland habitat at the River Shannon and River Fergus Estuaries SPA as a resource for the regularly-occurring migratory waterbirds that utilise it (NPWS, 2012c, p9).

4.0 Preventative Measures to Avoid Impacts

4.1 Design and Construction Considerations

Throughout the preparation of the project details and procedures, ecological advice and direction was given.

The potential pathways for impacts on the various Special Conservation Interests of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA are listed in the sections below, and the measures employed in the design of the project to prevent any such impacts are also discussed.

These measures are designed to ensure that the proposed development does not prevent or obstruct any of the qualifying interests from reaching favourable conservation status as per Article 1 of the EU Habitats Directive.

A definition of Favourable Conservation Status is provided below:

"conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2;
The conservation status will be taken as 'favourable' 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.'*

As discussed in Section 3.1 the conservation status of Otter *Lutra lutra* and Bottle-nosed dolphin *Tursiops truncates* are considered as favourable and similarly for Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation (Floating River Vegetation), mudflats and sandflats and estuaries.

4.2 Potential for Direct Impacts on European Sites

The proposed development site is located outside the boundary of European Sites. Direct impacts were only identified for the QI species Otter *Lutra lutra* as a result of the development.

4.3 Potential for Indirect Impacts on the European Sites

Emissions to surface water were identified as a pathway for potential direct/indirect effects on the Qualifying Interests of the Lower River Shannon SAC as detailed in Figure 4, the Source-Pathway-Receptor model.

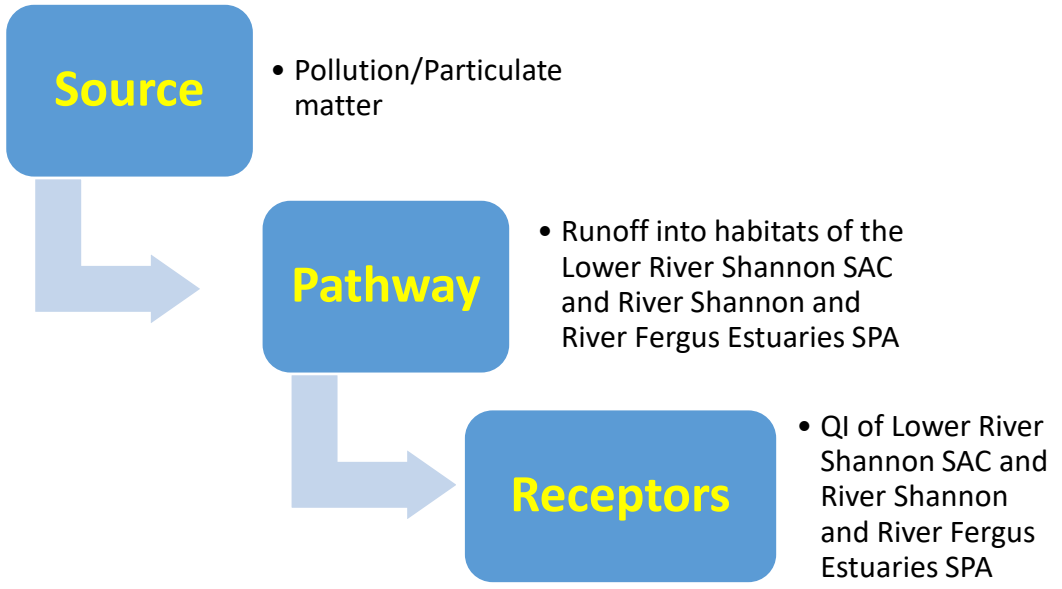

Figure 4 Source – pathway-receptor model for the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA.

4.4 Construction Phase

Potential significant effects on the Qualifying Interests (QI) may arise in the form of emissions to surface water during the construction phase of the proposed development and during high rainfall and storm events from roads and man-made surfaces during operation. Measures to protect water quality during the construction phase and operation phase are described below.

4.5 Mitigation Measures

Geotextile fencing will be erected around the construction site, in particular, to the south and west of the proposed development, to prevent any runoff of particulate matter/pollution into the nearby drainage ditch and River Groody. This will need to be at least 10m from the River Groody and the drainage ditch to protect the riparian zone and any areas of seasonal flooding as per the Inland Fisheries Ireland Guidelines (n.d). The exact location of the silt fencing will be determined in the construction stage CEMP and will be subject to a detailed assessment of the planned works methodology and works area (Garlands, 2025, OCEMP Section 3.1.1.1).

The purpose of the silt fencing is to prevent silt laden water leaving the site and entering adjoining lands and the River Groody with the potential to impact watercourses. It will consist of a double layer of geotextile membrane fixed to wooden stakes approximately 600mm high. The membrane will be anchored into the ground to form a continuous barrier to silt laden water from the works site (Garlands, 2025, OCEMP Section 3.1.1.1).

Silt fences will be monitored via a silt inspection log (to be maintained by the Environmental Manager/ ECoW) and periodically maintained during the construction period. Typical maintenance will consist of repairs to damaged sections of membrane and removal of a build-up of silt on the upslope side of the fence. Daily silt fence inspections are recommended as part of their operation ensuring that any necessary repairs can be expedited (Garlands, 2025, OCEMP Section 3.1.1.1).

The specification of the silt fencing geotextile is to be:

- Tensile Strength (kN/m) MD,CD: 17,17
- Elongation at Max Load (%) MD,CD: 25,15
- CBR Puncture Resistance: 2300N
- Cone Drop Penetration: 13mm
- Grab Tensile Strength (N) MD,CD: 750,550
- Trapezoidal Tear Strength (N) MD,CD: 400,300
- Pore Size 90% finer than: 180 microns
- Water Flow: 6l/m2 /sec

It is also suggested that a berm be constructed at the western boundary of the site to prevent any flow of surface water into the River Groody during construction.

Any cutting back or removal of any trees or scrub should be carried out outside of the nesting season (1st March – 31st August).

Construction site works should take place only during daylight hours to minimise nocturnal animal activities and any lighting should be directed away from the drainage ditch and rivers where bats may be foraging.

To further ensure that the potential impact is reduced the following best practice measures will be implemented during the construction phase.

Mitigation Measure	**How Measure Will Avoid/Reduce Adverse Effects**	**Implementation of Mitigation Measure and Likely Success**	**Monitoring scheme to prevent mitigation failure**
Timing of the clearance works - 1st September – 28th February Should any active nests be encountered during the development work, then work will be ceased immediately, and the site inspected by an ecologist.	The clearance of the site should not take place during the spring or summer so as to avoid disruption to any nesting birds on the site. Should any active nests be encountered during the development work, then work will be stopped immediately, and the site visited by an ecologist.	Mitigation measure will be implemented by the Client	The Client will ensure that a suitably qualified person will be appointed by the Client to ensure that the CEMP is finalised prior to the development works and the measures detailed in the CEMP and this document implemented for the duration of the construction phase*.
All works to be carried out during daylight hours	Avoidance of disturbance to any nocturnal animal activities	Mitigation measure will be implemented by the Client	
A silt trap around the site for the duration of the construction phase will be erected with the use of wooden stakes, woven geotextile fabric and sandbags before the development works take place	This will ensure that any run-off of particulate matter or pollutants during construction will be contained on the site	Mitigation measure will be implemented by the Client	
Removal of any construction material shall take place each day with no accumulation of material to take place on the site	Avoidance of any waste material remaining within the adjacent habitat	Mitigation measures will be implemented by the Client	

During the construction phase good construction practices such as dust suppression of on-site access roads and regular plant maintenance are required	This will ensure minimal risk of any pollutants and foreign matter entering the European Sites	Mitigation measure will be implemented by the Client	
All plant and machinery will be serviced before being mobilised to site. No plant maintenance will be completed on site, any broken-down plant will be removed from site to be fixed where applicable. If this isn't possible then a bund/container shall be used as part of the development works	This will ensure that there is no leakage or spillage of hydrocarbons/hydraulic fluid into the European Sites	Mitigation measure will be implemented by the Client	
There will be no fuel stored on site. All refuelling will take place off-site Procedures and contingency plans will be set up to deal with emergency accidents or spills. An emergency spill kit with oil boom, absorbers etc. will be kept on-site for use in the event of an accidental spill	This will ensure that there is no leakage or spillage of hydrocarbons/hydraulic fluid into the European Sites	The Client will appoint a member of staff to act as a 'spotter' to check for spills or leaks from vehicles whilst in operation. Should any spills/leaks be identified a spill kit will be used and the vehicle concerned will be removed from the site.	
If there is heavy rainfall then no works shall take place e.g. >20mm of rain). Any works at any time where water levels may cause inundation of the works area will be avoided.	This will ensure that there is no surface water runoff.	Mitigation measures will be implemented by the Client	
Overnight parking of machinery is prohibited in the construction site, an area away from the site will be allocated	This will ensure that there is no leakage or spillage of hydrocarbons/hydraulic fluid into the European Sites	Mitigation measures will be implemented by the Client	

for the storage of vehicles overnight			
No soil shall be imported from outside of the site.	This will prevent the colonisation of species not native to the site	Mitigation measures will be implemented by the Client	
All waste generated on site must be removed on a daily basis and recycled where appropriate	This will ensure that no waste is blown into nearby habitats or the marine environment	Mitigation measures will be implemented by the Client	

Table 14 Site specific mitigation measures

* The contractor will assign a member of the site staff as the Environmental Manager/ ECoW with the responsibility for ensuring the environmental measures prescribed are adhered to. The following will be carried out by the appointed staff member.
    - A checklist will be filled in on a weekly basis to show how the measures above have been complied with.
    - A 'tool-box' talks shall be held with all construction employees to make them aware of their roles and responsibilities and the importance of no direct impact due to their work activities to the European sites.
    - Any environmental incidents or non-compliance issues will immediately be reported to the project manager.
    - The site manager will be continuously monitoring the works and will be fully briefed and aware of the environmental constraints and protection measures to be employed.

Following completion of the works, the ecologist will complete a final audit report to show how the works complied with the environmental provisions described in this document.

This audit report may be forwarded to Limerick CC for their records if required.

Operation Phase

With reference to the engineering report from Garland Consulting Engineers, a number of measures have been proposed to intercept surface water runoff and storm water runoff. These include the following:

1 x Constructed wetland and 1 x attenuation tank complete with hydro-brake flow controls and bypass separators for metals and hydrocarbons
Green roofs
Bio-swales
Rain gardens
Permeable paving

The purpose of the SuDs measures is to mimic natural drainage, which is now reduced due to the creation of man-made surfaces in the form of dwellings and associated impermeable surfaces as part of the development. The proposed attenuation tanks and SuDs measures will intercept and delay the runoff, thus

slowing it down to facilitate the settling out of any pollutants. Therefore, this removes the risk to any watercourses in the vicinity of the development and thus the potential pathways for impact on the qualifying species and habitats of the aforementioned SAC and SPA.

In addition, to protect the riparian zones for the River Groody and drainage ditch, all footpaths should be a distance of greater than 10m from the watercourses.

4.6 Discussion of Proposed Preventative Measures to Avoid Impacts

Emissions to surface water were identified as a potential indirect effect on the Qualifying Interests of the European Sites. The prevention measures outlined in the sections above are site specific and have been derived from scientific analysis of the development site. The proposed preventative measures, in view of best practice guidance and scientific knowledge are appropriate to effectively avoid, reduce and remedy any impacts from runoff during construction and operation of the development.

The proposed development will not prevent the QIs/SCIs of the European Sites from achieving favourable conservation status in the future as defined in Article 1 of the EU Habitats Directive.

5.0 Cumulative Impacts

The proposed development was considered in combination with other developments and activities in the area that could result in cumulative impacts on European Sites.

A search was made of Limerick City Council planning website for other developments in the vicinity of the proposed development, which were detailed in Part 1, the Stage 1 Screening Report, but has been reproduced here in Table 15 for ease of reading.

Planning Reference/EIA Reference	Location and Details	Reports
22950	Towlerton, Ballysimon, Limerick Lidl supermarket, offices and apartments	CEMP, Stage Screening and NIS, SuDs
2023045	Castletroy Wastewater Treatment Plant, Dromroe, Castletroy, Co. Limerick	EIAR, NIS
2360712	University of Limerick, Redevelopment of sprots	NIS, SuDs

	pitches and construction of changing rooms	

Table 15 Recent developments that may be likely to create cumulative effects (LCC, 224; EIA Portal (2024).

With reference to Table 15, the projects listed have been assessed and where an NIS was required, mitigation measures have been included to prevent any impacts on the Lower River Shannon SAC or the River Shannon and River Fergus Estuaries SPA. Therefore, there is unlikely to be a cumulative impact with regard to other plans or projects in the vicinity. Furthermore, due to the SuDs measures in the design of the project, there is unlikely to be any risk to the River Groody from surface water runoff during the operation of the Student Campus and therefore no cumulative/in-combination impact.

Based on the information in this report, the proposed Whitebox Student Campus Development at Groody Road, Newcastle, Castletroy, Limerick will not have a significant adverse effect on the natural environment.

5.1 Cumulative Impact Conditions

The potential cumulative impacts of the proposed development were considered following research of known and likely plans and projects in the area and on the basis that the proposed development has been designed to avoid significant adverse impacts on the integrity of European Sites.

It is concluded that there will be no significant cumulative impact on the ecology of the area as a result of the proposed development.

6.0 Conclusion

The proposed development, as planned, will not adversely affect the integrity of the identified European sites. During this assessment the emissions to surface water were identified as a pathway for potential indirect effect on the Qualifying Interests of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA.

Potential pathways for indirect impacts in the form of surface water pollution/particulate matter during construction and operation of the proposed development were identified as well as potential direct impacts on Otter *Lutra lutra*. Mitigation measures to avoid the potential for any significant impacts via any of the pathways identified were outlined in Section 4.4.

It can be excluded, on the basis of objective scientific information, that the project, individually or in combination with other plans or projects, will not affect the integrity of the European Sites (Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA).

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Russell Environmental and Sustainability Services Limited

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Appendices


Appendix i Habitat Map
N
Dublin Road
R445
R445
R445
Dublin Road
Dublin Road
Curragh Birin
Groody Student Park
Groody Student Park
Brú na Gruada
Legend
WD5 Scattered Trees
WL2 Treeline
FW4 Drainage Ditch
FW2 Lowland River
WS1 Scrub
GA1 Improved Agricultural Grassland
Boundary
Russell Environmental and Sustainability Services Limited
0 0.020.04 0.09 Kilometers
Esri Community Maps Contributors, Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS, Maxar, Microsoft

An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

SITE SYNOPSIS

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 *Macoma-Scrobicularia-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 sea-lavender, *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-ash-alder 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 species-rich.

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 Bar-tailed Godwit (476; 1995/96). In the past, three separate flocks of Greenland White-fronted 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 SYNOPSIS

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 macro-invertebrate 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, Light-bellied 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.

30.5.2015