

4. CHARACTERISTICS OF THE RECEIVING ENVIRONMENT

The ecological and bird survey that was undertaken to inform this NIS is fully described in this section. A general description of the ecology of the Site of the Proposed Development is provided in the AA Screening Report in Appendix 1. The specific surveys that were undertaken to assess the potential effects on the identified European Sites are described below.

4.1 Ecological Survey Methodologies

4.1.1 Desk study

The desk study undertaken for this assessment included a thorough review of the available ecological data associated with the site of the proposed development and immediately surrounding area. Sources of data included the following:

- Review of NPWS Conservation Objectives supporting documents, site synopsis, standard data forms and supporting documents for EU Designated Sites,
- Review of online web-mappers: National Parks and Wildlife Service (NPWS), Environmental Protection Agency (EPA), IFI fish maps
- Review of the publicly available National Biodiversity Data Centre (NBDC) web-mapper,
- Review of NPWS Article 17 metadata and GIS database.

4.1.2 Ecological Multidisciplinary Walkover Survey

A multi-disciplinary ecological walkover survey of the Site was undertaken in accordance with NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (NRA, 2009). This survey provided baseline data on the ecology of Site and assessed whether further detailed habitat or species-specific ecological surveys were required. The multi-disciplinary ecological walkover survey comprehensively covered the entire Site.

Habitats within the Site were classified in accordance with the Heritage Council's 'Guide to Habitats in Ireland' (Fossitt, 2000). Habitat mapping was undertaken with regard to guidance set out in 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et al., 2011). Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2010), while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010).

The walkover survey was designed to detect the presence, or suitable habitat for a range of protected faunal species that may occur in the Site and the vicinity of the proposed development. During the multidisciplinary survey, a search for Invasive Alien Species (IAS), with a focus on those listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2011), was also conducted.

The walkover survey was undertaken on 12/01/2022 by Rudraksh Gupta (MSc., BSc.) and Cathal Bergin (BSc.). The survey timing fell outside the recognised optimum period for vegetation surveys/habitat mapping, i.e., April to September (Smith et al., 2011). However since all the habitat types were easily classifiable with no potential to be Annex 1 habitats, this were not a significant impediment to the survey. The habitats recorded can be easily classified during all seasons of the year.

4.1.3 Bird Survey Methodology

Bird surveys were undertaken at the site over two dates: 12th January 2022 and 15th February 2022. The February survey also covered the area of shoreline within Cummeen Strand SPA, Drumcliff Bay SPA and Ballysadare Bay SPA, approximately 2.7km, 7.5km and 4km from the proposed development site respectively. The Bird Report is attached as Appendix B of the AA Screening Report, itself included as Appendix 1 to this NIS.

The bird surveys were undertaken by appropriately qualified and experienced ecologists. All observations were recorded, and detailed point data was gathered for each species observation, with all bird species denoted using standard British Trust for Ornithology (BTO) codes and with the number of each species recorded next to each registration. The species recorded in the surveys were those covered by Irish Wetlands Bird Survey (I-WeBS) counts, i.e. all divers, grebes, cormorant, shag, herons, swans, geese, ducks, rails, crakes, waders, gulls and kingfisher. However, in addition to this, all other bird species, including all common and widespread passerines, were also recorded from within the proposed development site.

The winter bird surveys at the nearby SPA's followed the Irish Wetland Bird Survey (I-WeBS) methodology; the simple 'look-see' method, whereby all birds present within a predefined area are counted (Gilbert et al., 2011; Birdwatch Ireland, 2018). The surveys were carried out at suitable vantage points, located overlooking sections of Cummeen Strand SPA, Ballysadare Bay SPA and Drumcliff Bay SPA in close proximity to the proposed development site. Vantage points were chosen to have as large as possible a view of the identified wetland site and potential adjacent daytime foraging habitat in the vicinity of the proposed development. Vantage points focused on areas which were deemed to be of likely significance to wintering waterbirds of the SPAs.

Walked transects were undertaken within the site boundary. Due to the topography of the site, vantage points were undertaken at a single location within the site before completing the walked transects. The purpose of doing this was to scan the site to identify if bird species were foraging before completing the walked transect. During the surveys species of note were recorded both within and adjacent to the development site.

4.2 Desk Study Results

4.2.1 Lough Gill SAC [001976]

The Site-Specific Conservation Objectives document (Version 1, 2021) and Natura 2000 Data Form for this site as available on the NPWS website was reviewed during this assessment. Information in relation to the conservation objectives of the QI's and site-specific pressures and threats for the SAC is detailed below.

4.2.1.1 Review of conservation objectives

The relevant QIs and the associated conservation objectives are presented in **Error! Reference source not found.** These have been taken from the NPWS (2021) Conservation Objectives supporting document for the Lough Gill SAC. This document has been reviewed in the preparation of this NIS and additional species/habitat specific information is also provided in the preceding paragraphs and sections.

Table 4-1: Qualifying Interest and Conservation Objectives (Version 01, December, 2021¹)

¹ NPWS (2021) Conservation Objectives: Lough Gill SAC 001976. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Qualifying Interest	Conservation Objective
Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> - type vegetation [3150]	To maintain the favourable conservation condition of Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> - type vegetation in Lough Gill SAC.
White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	To maintain the favourable conservation condition of White-clawed Crayfish in Lough Gill SAC
Brook Lamprey (<i>Lampetra planeri</i>)	To maintain the favourable conservation condition of Brook Lamprey in Lough Gill SAC
Sea Lamprey (<i>Petromyzon marinus</i>)	To restore the favourable conservation condition of Sea Lamprey in Lough Gill SAC
River Lamprey (<i>Lampetra fluviatilis</i>)	To restore the favourable conservation condition of River Lamprey in Lough Gill SAC
Salmon (<i>Salmo salar</i>)	To maintain the favourable conservation condition of Atlantic Salmon in Lough Gill SAC
Otter (<i>Lutra lutra</i>)	To maintain the favourable conservation condition of Otter in Lough Gill SAC

4.2.1.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to impact on the SAC were reviewed and considered in relation to the proposed development. These are provided in **Error! Reference source not found.** and 4.3.

Table 4-2: Site-specific threats, pressures and activities

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
M	A10.01	Removal of Hedges and Copses or Scrub	I
L	B	Sylviculture Forestry	I
M	B06	Grazing in Forests/Woodland	I
M	D01.01	Paths, Tracks, Cyclin Tracks	I
H	E01.01	Continuous Urbanisation	B
M	E01.03	Dispersed Habitation	I
L	E03.03	Disposal of Inert Materials	I
L	G01.01.01	Motorized Nautical Sports	I
M	I01	Invasive non-native species	I
L	J02.05.02	Modifying Structures of Inland Water Courses	I
L	J02.10	Management of aquatic and bank vegetation for drainage purposes	I

Table 4-3: Site-specific threats, pressures and activities – Positive Impacts

Positive Impacts			
Rank	Threats and Pressures		Inside/Outside/Both (I / O / B)
	Code	Description	
L	X	No Threats or Pressures	I

4.2.1.3 Qualifying Interests (as screened in from AASR)

Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation

According to the site-specific conservation objectives (NPWS, 2021), the distribution of Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation is stable or increasing, subject to natural processes. From a precautionary perspective this habitat has been identified as occurring within the likely Zone of Impact.

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

According to the site-specific conservation objectives (NPWS, 2021), Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) are present within Lough Gill SAC and there has been no decline in their distribution. Significant areas of the habitat occur along the Garvoge River and at the mouth of the River Bonet. From a precautionary perspective this habitat has been identified as occurring within the likely Zone of Impact.

White-clawed Crayfish (*Austropotamobius pallipes*)

The distribution of white-clawed crayfish within Lough Gill SAC is illustrated on Map 6 of the site-specific conservation objective document (NPWS, 2021). According to the site-specific conservation objectives white-clawed crayfish (*Austropotamobius pallipes*) are not known to be present in Lough Gill itself (O'Connor et al., 2009). They are however found in the Bonet River, the adjoining Glenade Lough SAC, Shanvaus and Owenmore rivers and in Doon Lough, and in the stream that connects this lake to Lough Gill. There are likely to be crayfish populations in all 1km squares that overlap the designated sections of all these rivers; however, this would need to be proven by appropriate surveys

Brook Lamprey (*Lampetra planeri*)

According to the site-specific conservation objectives document (NPWS, 2021), two Brook Lamprey surveys were carried out on the Garavogue-Bonet catchment in 2009 (Inland Fisheries Ireland, 2010), and in 2016 (Gallagher et al., 2017) respectively and the results were very similar. Of the 23 sites sampled in 2016 (Gallagher et al., 2017), *Lampetra* spp. larvae were present in 47% of sites with suitable nursery habitat, indicating this catchment does not achieve favourable condition for this attribute. To

achieve favourable condition, *Lampetra* spp. should, as a minimum, be present in not less than 50% of all sampling sites surveyed with suitable habitat present within the natural range (JNCC, 2015).

Sea Lamprey (*Petromyzon marinus*)

According to the site-specific conservation objectives document, only a small number of records exist for sea lamprey (*Petromyzon marinus*) in Lough Gill SAC. An individual lamprey was observed immediately downstream of the weir in Sligo in 2015 and there have been anecdotal records of sea lamprey nests in the Garavogue in Sligo town. Significantly, two juvenile lake-feeding sea lampreys were recorded from Lough Gill in 2018 attached to pike (King and O’Gorman, 2018).

Salmon (*Salmo salar*)

According to the site-specific conservation objectives document (NPWS, 2021), artificial barriers block salmon’s upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. Lough Gill (IE_WE_35_158) was surveyed as part of the Water Framework Directive fish monitoring surveys in 2014 and 2017. Salmon were not recorded in Lough Gill in either of these surveys.

Otter (*Lutra lutra*)

According to the site-specific conservation objectives document (NPWS, 2021) map 7, the population of otter is stable (neither declining or increasing). The Site Synopsis provides limited information on the species, only that it is known to occur in a commuting 250m buffer within the SAC.

River Lamprey (*Lampetra fluviatilis*)

The Site Synopsis provides limited information on the species as it is not possible to distinguish between larval brook lamprey (*Lampetra planeri*) and river lamprey (*L. fluviatilis*) in the field and they are therefore considered together in this and other targets. However, A survey for larval lamprey was carried out on the Garavogue-Bonet catchment in 2009 (IFI, 2010), with a repeat survey in 2016 (Gallagher et al., 2017). Results were very similar for both years. To achieve favourable condition, *Lampetra* spp. should, as a minimum, be present in not less than 50% of all sampling sites surveyed with suitable habitat present within the natural range (JNCC, 2015). Of the 23 sites sampled in 2016, *Lampetra* spp. larvae were present in 47% of sites with suitable nursery habitat, indicating this catchment does not achieve favourable condition for this attribute.

4.2.2 Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC [000627]

The Site-Specific Conservation Objectives document (Version 1, 2013) and Natura 2000 Data Form for this site as available on the NPWS website was reviewed during this assessment. Information in relation to the conservation objectives of the QI’s and site-specific pressures and threats for the SAC is detailed below.

4.2.2.1 Review of conservation objectives

The relevant QIs and the associated conservation objectives are presented in 4-4. These have been taken from the NPWS (2021) Conservation Objectives supporting document for the Cummeen Strand/Drumcliff (Sligo Bay) SAC. This document has been reviewed in the preparation of this NIS and additional species/habitat specific information is also provided in the preceding paragraphs and sections.

Table 4-4: Qualifying Interest and Conservation Objectives (Version 01, 2013²)

Qualifying Interest	Conservation Objective
Mudflats and sandflats not covered by seawater at low tide	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
Estuaries	To maintain the favourable conservation condition of Estuaries in Cummeen Strand/Drumcliff Strand (Sligo Bay)
Petrifying springs with tufa formation (Cratoneurion)	To maintain the favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in Cummeen Strand/Drumcliff Strand (Sligo Bay)
Sea Lamprey (<i>Petromyzon marinus</i>)	To restore the favourable conservation condition of Sea Lamprey in Cummeen Strand/Drumcliff Strand (Sligo Bay)
River Lamprey (<i>Lampetra fluviatilis</i>)	To restore the favourable conservation condition of River Lamprey in Cummeen Strand/Drumcliff Strand (Sligo Bay)
Harbour Seal (<i>Phoca vitulina</i>)	To maintain the favourable conservation condition of Harbour Seal in Cummeen Strand/Drumcliff Strand (Sligo Bay)

4.2.2.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to impact on the SAC were reviewed and considered in relation to the proposed development. These are provided in 4.5 and 4.6.

Table 4-5: Site-specific threats, pressures and activities

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
M	A02.01	Agricultural Intensification	I
M	D03	Shipping lanes, ports, marine constructions	I
M	D03.01	Port Areas	I
M	E01.03	Dispersed Habitation	I
L	E03.03	Disposal of inert materials	I
H	F01.01	Intensive fish farming, intensification	I
M	G01.02	Walking, horse-riding and non-motorised vehicles	I
M	G02.01	Golf Course	I
L	G02.08	Camping and Caravans	I
L	G05.01	Trampling and Overuse	I

² NPWS (2013) Conservation Objectives: Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
M	G01.03.02	Off-road motorized driving	I
M	I01	Invasive non-native species	I
L	J01.01	Burning Down	I
L	J02.11.01	Dumping, depositing of dredged deposits	I

Table 4-6: Site-specific threats, pressures and activities – Positive Impacts

Positive Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
M	G02.09	Wildlife watching	I

4.2.2.3 Qualifying Interests (as screened in from AASR)

Estuaries

According to the site-specific conservation objectives (NPWS, 2013), the distribution of estuaries is stable or increasing, subject to natural processes. According to Map 3 of the site-specific conservation objectives (NPWS, 2013) the extent of this habitat area was estimated as 1258ha using OSi data. From a precautionary perspective this habitat has been identified as occurring within the likely Zone of Impact.

Petrifying springs with tufa formation (*Cratoneurion*)

According to the site-specific conservation objectives (NPWS, 2013), the distribution of estuaries is stable or increasing, subject to natural processes. According to Internal NPWS Files, the area of this habitat at Ballincar is recorded as 150m² along c.200m of cliff. From a precautionary perspective this habitat has been identified as occurring within the likely Zone of Impact.

Sea Lamprey (*Petromyzon marinus*)

According to the site-specific conservation objective document there is limited information on this species. It is also not anticipated that the SAC contains suitable spawning or nursery habitat for sea lamprey. Migrating adult sea lamprey pass through the site en route to/from the Garavogue River, which flows out of Lough Gill. Lough Gill SAC (site code: 1976), which is adjacent to this SAC and encompasses the freshwater elements of sea lamprey habitat. The potential barriers for migrating lamprey include anthropogenic physical barriers and chemical barriers e.g. oxygen depletion or discharge of noxious pollutants

River Lamprey (*Lampetra fluviatilis*)

According to the site-specific conservation objective document there is limited information on this species. It is also not anticipated that the SAC contains suitable spawning or nursery habitat for river lamprey. Migrating adult river lamprey pass through the site en route to/from the Garavogue River, which flows out of Lough Gill. Lough Gill SAC (site code: 1976), which is adjacent to this SAC and encompasses the freshwater elements of sea lamprey habitat. The potential barriers for migrating lamprey include anthropogenic physical barriers and chemical barriers e.g. oxygen depletion or discharge of noxious pollutants.

Harbour Seal (*Phoca vitulina*)

According to site-specific conservation objective document, the species range within the site should not be restricted by artificial barriers to site use and human activities should occur at levels that do not adversely affect the harbour seal population at the site. According to map 8 of the site-specific conservation objective document, the harbour seal habitat occupies a large portion of the SAC and has 6 breeding and 10 resting sites respectively.

4.2.3 Ballysadare Bay SAC [000622]

The Site-Specific Conservation Objectives document (Version 1, 2013) and Natura 2000 Data Form for this site as available on the NPWS website was reviewed during this assessment. Information in relation to the conservation objectives of the QI's and site-specific pressures and threats for the SAC is detailed below.

4.2.3.1 Review of conservation objectives

The relevant QIs and the associated conservation objectives are presented in 4-7. These have been taken from the NPWS (2021) Conservation Objectives supporting document for the Ballysadare SAC. This document has been reviewed in the preparation of this NIS and additional species/habitat specific information is also provided in the preceding paragraphs and sections.

Table 4-7: Qualifying Interest and Conservation Objectives (Version 01, 2013³)

Qualifying Interest	Conservation Objective
Estuaries	<i>To maintain the favourable conservation condition of Estuaries in Ballysadare Bay SAC</i>
Mudflats and sandflats not covered by seawater at low tide	<i>To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Ballysadare Bay SAC</i>
<i>Phoca vitulina</i> (Harbour Seal)	<i>To maintain the favourable conservation condition of Harbour Seal in Ballysadare Bay SAC.</i>

4.2.3.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to impact on the SAC were reviewed and considered in relation to the proposed development. These are provided in 4.8 and 4.9.

³ NPWS (2013) Conservation Objectives: Ballysadare Bay SAC 000622. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Table 4-8: Site-specific threats, pressures and activities

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
H	A04.03	Abandonment of pastoral systems, lack of grazing	I
M	E01.02	Discontinuous urbanisation	O
M	F02	Fishing and harvesting aquatic resources	I
L	F01.03	Bottom Culture	I
M	G01.02	Walking, horseriding and non-motorised vehicles	I
L	G02.01	Golf Course	B
M	G05.01	Trampling, overuse	I
L	I01	Invasive non-native species	I
L	J02.01.02	Reclamation of land from sea, estuary or marsh	I
L	J02.12.01	Sea defense or coast protection works, tidal barrages	I
M	K01.01	Erosion	I

Table 4-9: Site-specific threats, pressures and activities – Positive impacts

Positive Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
L	J02.12.01	Sea defense or coast protection works, tidal barrages	I

4.2.3.3 Qualifying Interests (as screened in from AASR)

Estuaries

According to the site-specific conservation objectives and map 3 (NPWS, 2013), the permanent habitat area of estuaries is stable or increasing, subject to natural processes. The habitat area was estimated as 1703ha using OSi data. From a precautionary perspective this habitat has been identified as occurring within the likely Zone of Impact.

Mudflats and sandflats not covered by seawater at low tide

According to the site-specific conservation objectives and map 4 (NPWS, 2013), the permanent area of Mudflats and sandflats not covered by seawater at low tide is stable or increasing, subject to natural processes. The habitat area was estimated as 1345 ha using OSi data. From a precautionary perspective this habitat has been identified as occurring within the likely Zone of Impact.

Harbour Seal (*Phoca vitulina*)

According to site-specific conservation objective document (NPWS, 2013), the species range within the site should not be restricted by artificial barriers to site use and the breeding sites should be conserved in a natural condition. The human activities should occur at levels that do not adversely affect the harbour seal population at the site

4.2.4 Cummeen Strand SPA [004035]

A potential pathway for indirect effects was identified in the form of deterioration of water quality resulting from pollution, associated with the construction of the development. In the absence of mitigation, and taking a precautionary approach, the proposed works have the potential to cause deterioration of water quality during the construction, operation and decommissioning phases of the development potentially affecting the downstream SCI ‘Wetland and Waterbirds’.

The Conservation Objectives document and Natura 2000 Data Form for this site as available on the NPWS website was reviewed during this assessment. The relevant SCIs and the associated conservation objectives of the site are presented in Table 4.7. The associated Target and Attributes for the relevant QIs as described in the Conservation Objective Document were reviewed and considered in this assessment and are provided in Section 5 of this NIS.

4.2.4.1 Review of Conservation Objectives

The relevant SCI and the associated conservation objectives are presented in Table 4.10. These have been taken from the NPWS (2013) Conservation Objectives supporting document for the Cummeen Strand SPA This document has been reviewed in the preparation of this NIS and additional species/habitat specific information is also provided in the preceding paragraphs and sections. The relevant target and attributes for the SCI, the supporting wetland habitat for all relevant SCI species, described in the Site-specific Conservation Objectives document, were reviewed and considered in this assessment.

Table 4-10: Qualifying Interest and Conservation Objectives (Version 1, NPWS, 2013⁴)

Special Conservation Interest (SCI)	Conservation Objective
Wetlands and waterbirds	<i>To maintain the favourable conservation condition of the wetland habitat in Cummeen Strand SPA as a resource for the regularly occurring migratory waterbirds that utilise it.</i>

⁴ : NPWS (2013) Conservation Objectives: Cummeen Strand SPA 004035. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

4.2.4.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to effect on the SPA were reviewed and considered in relation to the proposed development. These are provided in Table 4.11 and 4.12.

Table 4-11: Site-specific threats, pressures and activities with potential to impact on the SPA

Negative Impacts			
Rank	Threats and Pressures		Inside (I) / Outside(O)
M	A08	Fertilisation	O
M	D01.02	Roads, motorways	O
H	D03.02	Shipping Lanes	I
M	E01	Urbanised areas, human habitation	O
H	E02	Industrial or commercial areas	O
H	E03	Discharges	I
H	F01	Marine and Freshwater Aquaculture	I
L	F02.03	Leisure Fishing	I
M	H	Pollution	I
H	J02.01.02	Reclamation of land from sea, estuary, or marsh	I

Table 4-12: Site-specific threats, pressures and activities – Positive Impacts

Positive Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
M	D01.02	Roads, motorways	O
H	D03.02	Shipping Lanes	I
L	F02.03	Leisure Fishing	I

4.2.4.3 Special Conservation Interests' Specific Information

Wetland and Waterbirds

According to the site-specific conservation objectives the extent of wetland habitat within the SPA was estimated as 1732ha, using OSi data and relevant orthophotographs (NPWS, 2013). The permanent

area occupied by the wetland habitat should be stable and not significantly be less than 1732 hectares, other than that occurring from natural patterns of variation.

4.2.5 Ballysadare Bay SPA [004129]

A potential pathway for indirect effects was identified in the form of deterioration of water quality resulting from pollution, associated with the construction of the development. In the absence of mitigation, and taking a precautionary approach, the proposed works have the potential to cause deterioration of water quality during the construction, operation and decommissioning phases of the development potentially affecting the downstream SCI 'Wetland and Waterbirds'.

The Conservation Objectives document and Natura 2000 Data Form for this site as available on the NPWS website was reviewed during this assessment. The relevant SCIs and the associated conservation objectives of the site are presented in Table 4.13. The associated Target and Attributes for the relevant QIs as described in the Conservation Objective Document were reviewed and considered in this assessment and are provided in Section 5 of this NIS.

4.2.5.1 Review of Conservation Objectives

The relevant SCI and the associated conservation objectives are presented in Table 4.13. These have been taken from the NPWS (2013) Conservation Objectives supporting document for the Ballysadare Bay SPA. This document has been reviewed in the preparation of this NIS and additional species/habitat specific information is also provided in the preceding paragraphs and sections. The relevant target and attributes for the SCI, the supporting wetland habitat for all relevant SCI species, described in the Site-specific Conservation Objectives document, were reviewed and considered in this assessment.

Table 4-13: Qualifying Interest and Conservation Objectives (Version 1, NPWS, 2013⁵)

Special Conservation Interest (SCI)	Conservation Objective
Wetlands and waterbirds	<i>To maintain the favourable conservation condition of the wetland habitat in Ballysadare Bay SPA as a resource for the regularly occurring migratory waterbirds that utilise it.</i>

4.2.5.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to effect on the SPA were reviewed and considered in relation to the proposed development. These are provided in Table 4.14 and 4.15.

Table 4-14: Site-specific threats, pressures and activities with potential to impact on the SPA

Negative Impacts			
Rank	Threats and Pressures		Inside (I) / Outside(O)
M	A08	Fertilisation	O
M	E01.01	Continuous urbanisation	O

⁵ : NPWS (2013) Conservation Objectives: Ballysadare Bay SPA 004129. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

L	F01	Marine and Freshwater Aquaculture	I
M	F03.01	Hunting	I

Table 4-15: Site-specific threats, pressures and activities

Positive Impacts			
Rank	Threats and Pressures		Inside/Outside/ Both (I / O / B)
	Code	Description	
M	E01.01	Continuous urbanisation	O
L	F01	Marine and Freshwater Aquaculture	I
M	F03.01	Hunting	I

4.2.5.2.1 Special Conservation Interests' Specific Information

Wetland and Waterbirds

According to the site-specific conservation objectives the habitat area of wetlands within the SPA estimated as 2130ha using OSi data and relevant orthophotographs. The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2130 hectares, other than that occurring from natural patterns of variation.

4.2.6 EPA River Catchments & Watercourses

The EPA Envision map viewer was consulted on the 14th of January 2022. The site of the proposed development is located partially within the Bonet hydrological sub-catchment. The groundwater status of this sub-catchment has been assigned a 'good' status in the Water Framework Directive (WFD) groundwater monitoring programme (2013-2018).

The groundwater body Carrowmore East (IE_WE_G_0042) passes within the western portion of the site; this watercourse had a 'good' ecological potential status in the monitoring period 2013-2018.

No mapped watercourses occur within the site of the proposed development.

4.3 Ecological Survey results

4.3.1 Habitats

A dedicated habitat survey of the area within and in the vicinity of the proposed development was undertaken on the 12th of January 2022. The habitat classification provided in this report correspond to those described in 'A Guide to Habitats in Ireland' (Fossitt, 2000). The habitats recorded during the site visit are listed below in Table 4-10 and a habitat map is provided in Figure 4-16.

Table 4-16: Habitats recorded within the proposed works area and their respective codes.

Habitat	Code
Building and artificial surfaces	BL3
Spoil and bare ground	ED2
Wet Grassland	GS4
Recolonising bare ground	ED3
Treelines	WL2
Hedgerows	WL1
Stonewalls and other stone works	BL1

The main habitat types within the boundary of the proposed development are **Wet Grassland (GS4)**, **Hedgerows (WL1)**, **Stonewalls and other stone works (BL1)**, **Treelines (WL2)** with areas of **Recolonising bare ground (ED3)**, **Spoil and bare ground (ED2)** and **Building and artificial surfaces (BL3)**.

Dry meadows & grassy verges (GS2) habitat is dominant within the site boundary being present from the northern to southern boundary and from the western to the eastern with an area of **Wet Grassland (GS4)** present at the southwestern corner of the Site (Plate 4-1 and 4-2). The smaller area (Plate 4-1), approximately 0.3 hectares is dominated by perennial rye grass (*Lolium perenne*) that had not been managed in sometime and rushes (*Juncus* sp). Meadow buttercup (*Ranunculus acris*), Creeping buttercup (*Ranunculus repens*), bush vetch (*Vicia sepium*), dandelion (*Taraxacum* sp), dockleaf (*Rumex obtusifolius*), and Ribwort Plantain (*Plantago lanceolata*) are common while Fescue spp, cow parsley (*Anthriscus sylvestris*), common sorrel (*Rumex acetosa*) and Common Starwort (*Stellaria garminea*) were present. The larger area (Plate 4-2), approximatly 1.7 hectares located to the west of the site is dominated by perennial rye grass (*Lolium perenne*), rushes (*Juncus spp*) and Red-stemmed Feathermoss (Pleurozium schreberi) in areas. Catsear (*Hypochaeris radicata*), Meadow (*R. acris*) and Creeping buttercup (*R. repens*), Ribwort plantain (*Plantago lanceolata*) and Dandelion (*Taraxacum* sp) were common.

An area of **Treelines (WL2)** was present running from north to south through the development site. This treeline separates the **Wet grasslands (GS4)** habitats (Plate 4-1). This treeline was dominated by Ash (*Fraxinus excelsior*) with Bramble (*R. fruticosus*), Ivy (*Hedera helix*), Redclaws (*Escallonia* spp) and Kapuka (*Griselinia littoralis*) present.



Plate 4-1: Small wet grassland bordered by tree lines on the north, west and sparsely on the east.



Plate 4-2: Large wet grassland with a hedgerow on the north and a sparse hedgerow on the east.

Patches of **Recolonising bare ground (ED3)** were present along the site boundary in the southwest of the development site in the form of an old access road and to the north of the site at the access point from the Ard Cairn housing estate. Species present included Perennial ryegrass (*Lolium perenne*), Dock (*Rumex crispus*), Creeping thistle (*Cirsium arvense*), Nettle (*Urtica dioica*), Greater plantain (*Plantago major*), Ribwort plantain (*Plantago lanceolatum*), Dandelion (*Taraxacum* spp.), Herb Robert (*Geranium robertianum*), Creeping thistle (*Cirsium arvense*), Gorse (*Ulex europaeus*), ragwort (*Jacobaea vulgaris*) and willow spp (*Salix* spp).

Hedgerows (WL1) were present along habitat margins throughout the site (Plate 4-2 and 4-3). Species present in hedgerow habitats included Hawthorn (*Crataegus monogyna*), Birch (*Betula* spp), Beech (*Fagus sylvatica*), Alder (*Alnus glutinosa*), Holly (*Ilex aquifolium*), Gorse (*Ulex europaeus*), Bracken (*Pteridium aquilinum*), Ivy (*Hedera helix*), Hazel (*Corylus avellana*), Ash (*Fraxinus excelsior*), Bramble (*Rubus fruticosus* agg.), Hogweed (*Heracleum sphondylium*), Cypress (*Cupressus* sp), and Golden Queen holly (*Ilex aquifolium* 'Golden Queen').

Ferns such as Soft-shield fern (*Polystichum setiferum*) and Harts-tongue fern (*Asplenium scolopendrium*) were present.

Hedgerow dominated by Privet spp (*Ligustrum* spp) north of residential development within the site with a hedgerow of Kapuka (*Griselinia littoralis*) adjacent to the property to the south. The South-western corner dominated by Kapuka (*Griselinia littoralis*) with Cypress (*Cupressus* sp), Golden Queen holly (*Ilex aquifolium* 'Golden Queen'), Darwins Barberry (*Berberis darwinii*), bramble (*R. fruticosus* agg.) and Alder (*Alnus glutinosa*) present.



Plate 4-3: Hedgerow on the west.

A concrete block wall categorized as **Stonewalls and other stone works (BL1)** was recorded along the northern boundary of the proposed development site (Plate 4-4 and 4-5). Defunct sections of block wall were also found within the hedgerows on the boundary in the east of the Site.



Plate 4-4 Stone wall and other stonework on the eastern side of the smaller wet grassland.



Plate 4-5 Stone wall and other stonework on the east that has been extended from smaller grassland into the larger grassland.

Areas of **Spoil and bare ground (ED2)** were present adjacent to the above residential building to the west. This habitat was dominated by disturbed soil (Plate 4-6).



Plate 4-6 Area of Spoil and Bare Ground

A residential dwelling within the proposed development site is classed as **Building and artificial surfaces (BL3)**. This habitat occurs in the north-western corner of the site (Plate 4-7 and 4-8).



Plate 4-7 View of the residential dwelling within the Site viewed from the entrance (eastern elevation)



Plate 4-8 Part of the western elevation of the house.

The trees within the site had low potential for a bat roost and no bats were recorded on any of the trees. No watercourses or invasive species were identified on or adjacent to the surveyed area. No species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 were recorded during the survey. No habitats listed under Annex I of the EU Habitats Directive were identified within the boundary of the proposed development.



Map Legend

-  Site Boundary
-  Hedgerows (WL1)
-  Treelines (WL2)
-  Stone walls and other stonework (BL1)
-  Buildings and artificial surfaces (BL3)
-  Spoil and bare ground (ED2)
-  Recolonising bare ground (ED3)
-  Dry meadows and grassy verges (GS2)
-  Wet grassland (GS4)



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Drawing Title

Habitat Map

Project Title

Cairn Road, Sligo

Drawn By

CB

Checked By

PE

Project No.

210937

Drawing No.

Figure 4.1

Scale

1:1000

Date

09.03.22



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Bird Survey Results

A total of 13 bird species were recorded within or immediately adjacent to the proposed development site during the winter site visits. The majority of the birds recorded within the site boundary and in the surrounding habitat during the site visit were an assemblage of common passerines birds that are typical of the grassland, woodland and hedgerow habitats found within the wider area. The hedgerow and treeline habitat within the site provide suitable foraging and nesting habitat for these species, however, these habitats are common and widespread within the local area. Any clearance of hedgerow or treeline habitat will be done outside of the breeding season (March 1st – September 1st) in accordance with the Wildlife Act 1976-2021. No SCI species were recorded using the site or the immediately surrounding area during the bird surveys that were undertaken and no connectivity or flightpaths between the SPAs and the site of the proposed development was recorded.

Based on the findings, and the habitat composition, the site and the surrounding habitats do not provide a significant foraging and supporting habitat for wintering geese, wildfowl or waders associated with nearby SPAs Cummeen Strand SPA, Drumcliff Bay SPA and Ballysadare Bay SPA or any other SPAs identified as being within the likely zone of influence (see Table 3.1 of AASR). Habitats within the development site are predominately comprised of agricultural/wet grassland, buildings and artificial surfaces and hedgerow habitat. The SCI species of nearby SPAs (see Table 3.1 of AASR) are not dependant on the habitats therein, which are also common and widespread in the local area.

The SCI species recorded at the three SPAs surveyed were Oystercatcher (*Haematopus ostralegus*), Shellduck (*Tadorna tadorna*), Little egret (*Egretta garzetta*), Curlew (*Numenius arquata*), Black-headed gull (*Larus ridibundus*), Common Gull (*Larus canus*), Tern (*Sterna spp*), Teal (*Anas crecca*), Black Tailed Godwit (*Limosa limosa*), Cormorant (*Phalacrocorax carbo*), Herring Gull (*Larus argentatus*), Red Breasted Merganser (*Mergus serrator*), Whimbrel (*Numenius phaeopus*), Wigeon (*Anas Penelope*). A full list of all the bird species recorded is contained in the Bird Survey report attached in Appendix B of the AA Screening Report, itself included as Appendix 1 of this NIS.

However, no observations of SCI birds flying in the direction of the site was observed and it is judged that no connectivity between the SPA and the site exists.

The full details of the bird surveys are contained within the Bird Survey report in Appendix B of the AA Screening Report (itself included as Appendix 1 of this NIS) and are summarised below:

Based on the wintering bird assemblages recorded over the two surveys carried out between January 2022 and February 2022 it can be concluded that the site does not support important assemblages of Red listed species, wintering wildfowl, waders or SCI species for which Cummeen Strand SPA, Drumcliff Bay SPA and Ballysadare Bay SPA is designated. The hedgerow and treeline habitat within the site provide suitable habitat for common passerine species, however, these habitats are common and widespread within the local area. Any clearance of such habitat will be undertaken in accordance with the Wildlife Act 1976-2019.

No potential for adverse effects on the SCI species of which Cummeen Strand SPA, Drumcliff Bay SPA and Ballysadare Bay SPA have been designated has been identified. For this reason, there is not considered to be potential for adverse effects alone or in-combination with other developments within the environs of the which Cummeen Strand SPA, Drumcliff Bay SPA and Ballysadare Bay SPA.'

4.4.1 **Other Fauna**

No watercourses were present within or adjacent to the Site, and no potential for QI fish species to occur. No suitable habitat for otter was present within the Site and no evidence of otter resting or breeding sites or other activity was recorded within the Site. There was no suitable harbour seal habitat within the Site or any potential for this species to occur.