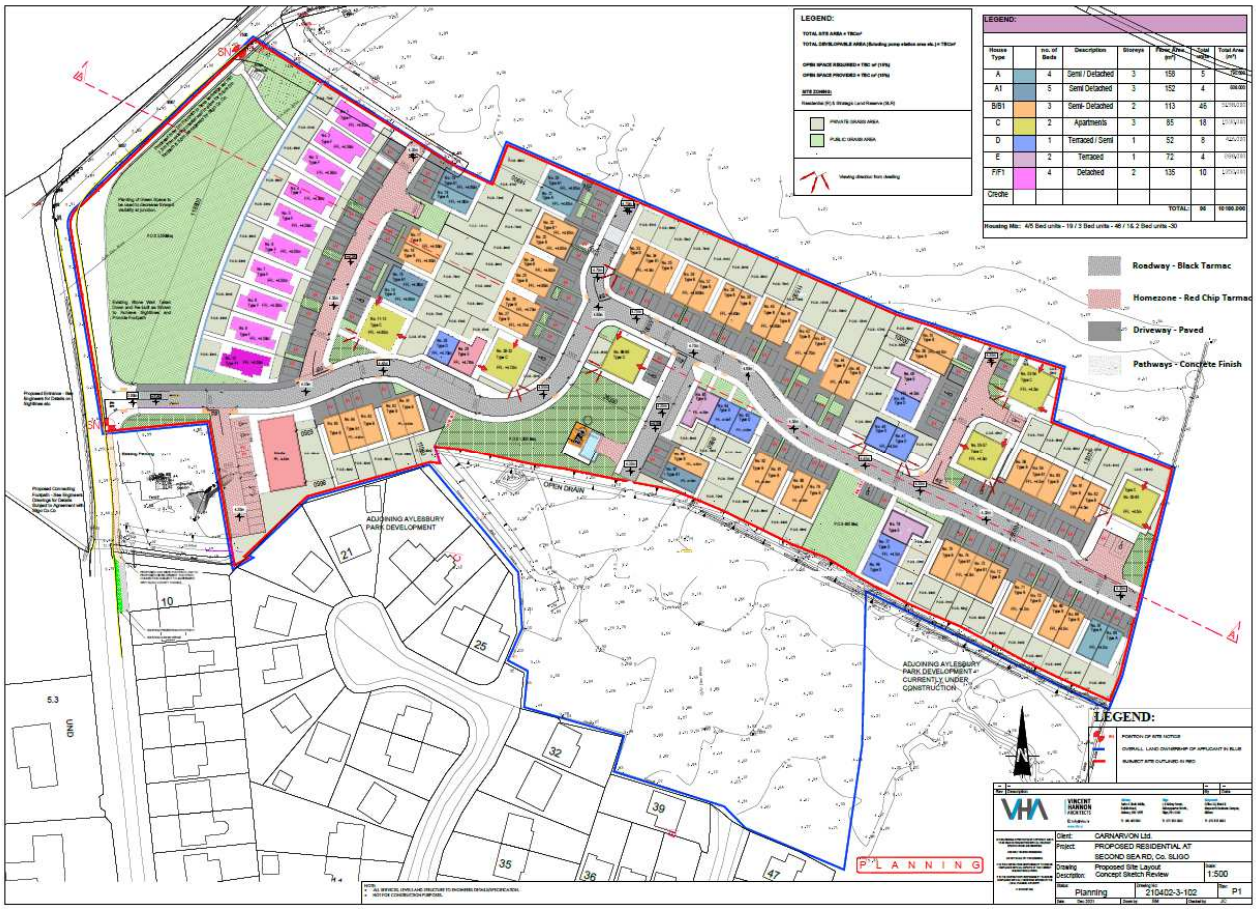
Stage 1 - SCREENING REPORT &
Stage 2 - NATURA IMPACT STATEMENT
Proposed Development
AT
KNAPPAGH MORE, SECOND SEA ROAD, SLIGO



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Environmental Impact Assessment, Flood Plain Assessment (coastal, fluvial, pluvial), Appropriate Assessment Screening Reports, Natura Impact Assessments, Environmental Impact Assessment, Environmental Management Systems, Noise Monitoring, Isophonic Mapping, Treatment Plant Design and Review, Water & Waste Water Monitoring, Ecological Surveys,

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APPENDICES

ACKNOWLEDGEMENTS

The Author wishes to acknowledge the essential contribution of National Parks and Wildlife whose maps, site synopsis, Natura Data forms, conservation objectives and supporting documents have enabled the compilation of this report.

EXECUTIVE SUMMARY

Stage 1 (screening) of the Habitats Directive Assessment process was completed in compliance with the relevant European Commission and national guidelines. There was no likelihood of significant negative impacts on most of these Natura 2000 sites. However, potential significant impacts on the Cummeen Stand/Drumcliff Bay (Sligo Bay) SAC (000627) an the Cummeen Strand SPA (004035) could not be entirely ruled out. Therefore, a stage 2 Natura Impact Statement was deemed necessary. The results of the stage 2 Natura Impact Statement indicted that the conservation objectives and qualifying interests listed for the Cummeen Stand/Drumcliff Bay (Sligo Bay) SAC (000627) and the Cummeen Strand SPA (004035) will not be compromised by the proposed development following the completion of appropriate mitigation measures, nor will there be any significant detrimental impacts on habitats or species for which they have been designated.

1.0 INTRODUCTION

1.1 BACKGROUND

The following document details the Appropriate Assessment of both, potential effects, and accumulative effects, on Natura 2000 Network Sites, relevant to the proposed development. The site is located adjacent to the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC (000627) and the Cummeen Strand SPA (004035). Furthermore, this Natura Impact Statement contains recommendations for appropriate mitigation measures necessary to avoid, reduce and/or offset potential negative environmental impacts.

It provides information and assesses the potential for the proposed development to impact on Natura 2000 sites and was conducted in accordance with the Habitats Directive 92/43/EEC, Article 6(3).
The purpose of this report is to:

- Identify the justification for undertaking an Appropriate Assessment
- Undertake the Appropriate Assessment
- For the purposes of mitigating any adverse effects on site integrity, guide further assessment of regional and local measures (for example at project level and for measures not subject to regulatory control).

1.2 THE REQUIREMENT FOR AN ASSESSMENT UNDER ARTICLE 6

The requirement for Appropriate Assessment (AA) is set out in the EU Habitats Directive (92/43 EEC) in Article 6.3 which states:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives”

Where it cannot be deduced or proven with certainty that the development will not have a significant effect on the Natura 2000 sites then it is necessary to carry out an AA on the ramifications of the development on the sites with respect to their qualifying interests and conservation objectives. The guidance for Appropriate Assessment (NPWS, 2009, revised February 2010) states:

"AA is an impact assessment process that fits within the decision-making framework and tests of Articles 6(3) and 6(4) and, for the purposes of this guidance, it comprises two main elements. Firstly, a Natura Impact Statement (NIS) - i.e. a statement of the likely and possible impacts of the plan or project on a Natura 2000 site must be prepared. This comprises a comprehensive ecological impact assessment of a plan or project; it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans and projects, on one or more Natura 2000 sites in view of the sites' conservation objectives. Secondly, the competent authority carries out the AA, based on the NIS and any other information it may consider necessary. The AA process encompasses all of the processes covered by Article 6(3) of the Habitats Directive, i.e. the screening process, the NIS, the AA by the competent authority, and the record of decisions made by the competent authority at each stage of the process, up to the point at which Article 6(4) may come into play following a determination that a plan or project may adversely affect the integrity of a Natura 2000 site".

A High Court ruling in 2018 dictates that where compensation or mitigations measures are applied to a plan or project then that plan, or project must be assessed by means of a NIS as opposed to a Screening Document.

1.3 THE AIM OF THIS REPORT

This AA has been prepared in accordance with the current guidelines as prescribed by NPWS (NPWS, 2009, Revised February 2010), the EU guidance on the provisions of Article 6 of the 'Habitats' Directive *(2018)* and it provides an impact assessment for the proposed development at Knappagh More, Second Sea Road, Co. Sligo.

The AA should provide sufficient data and information to the Local Authority, Sligo County Council in this instance, to establish whether or not the proposed development is likely to have a significant impact on the Natura sites considered and impart sufficient information to assist the competent authority in its decision-making process. Cognisance is taken of the Natura sites conservation objectives, qualifying interest species and qualifying interest habitats for which the Natura 2000 conservation sites were designated.

When considering the habitats and species of the Natura sites, together with their conservation objectives, the Natura Impact Statement (NIS) report should furnish sufficient information and data to satisfy the screening process required for the first stage of the process pursuant to Article 6.3 of the EU Habitats Directive. In addition, the report should impart sufficient data to enable the competent authority to complete the AA process if deemed necessary.

1.4 GUIDANCE

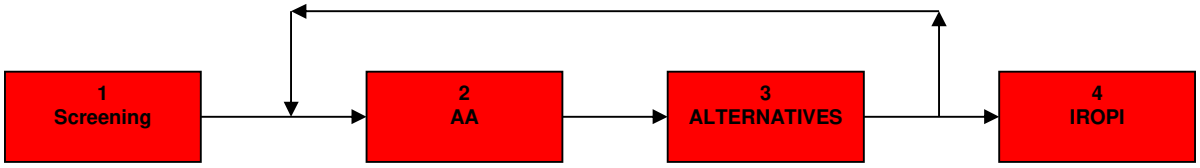
A number of guidance documents and Court (EU / High Court) Rulings (Appendix A) on the AA process should be considered during the preparation of an AA. The key ones are listed below however this list is not exhaustive:

(i) Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (NPWS 2009, Revised February 2010).
(ii) CIEEM (2018) Guidelines for Ecological impact assessment in the UK and Ireland: Terrestrial, freshwater, coastal and marine (version 1.1).
(iii) Status of EU protected Habitats and species in Ireland: Article 17 Report (NPWS 2019).
(iv) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (Nov. 2001 - published 2002).
(v) Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000).
(vii) EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (2007).
(viii) The European Commission guidance on Article 6 of the Habitats Directive, including on Appropriate Assessment Screening: Assessment of plans and projects significantly affecting Natura 2000 sites *(November 2001)*.
(ix) EU Managing Natura 2000 sites and the provisions of Article 6 of the 'Habitats' Directive *(2018)*.
(x) Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes:

Practitioner's Manual (EPA 2013).

1.5 STAGES

The European Commission's guidance promotes a fours stage process, as set out below, to complete the AA, and outlines the tests required at each stage. Stages 1 and 2 deal with the main requirements for assessment under Article 6.3. Stage 3 may be part of Article 6(3) or a necessary precursor for Stage 4.



This report includes the ecological impact assessment and testing required under the provisions of Article 6(3) by means of the first stage of AA, the screening process (as set out in the EU Guidance documents).

EU guidance[1] states:
"This stage examines the likely effects of a project or plan, either alone or in combination with other projects or plans, upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant. This assessment comprises four steps:

(1) Determining whether the project or plan is directly connected with or necessary to the management of the site;

(2) Describing the project or plan and the description and characterisation of other projects or plans that in combination have the potential for having significant effects on the Natura 2000 site;

(3) Identifying the potential effects on the Natura 2000 site;

(4) Assessing the significance of any effects on the Natura 2000 site".

[1] Paragraph 3.1 of Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological Guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (Nov. 2001)

1.6 STATEMENT OF AUTHORITY

The AA has been undertaken by Paul Neary B.Sc. (Env. Sc.) M.Sc (eco tox), whom with 25 years of ecological experience has previously carried out Ecological surveys, damage assessments and environmental management plans on the Kerry Mountains, Ox Mountains, Shores of Lough Conn and Lough Cullin under the auspices of NPWS, the finding of which were lodged at a European level. Appropriate site inspections where carried out as necessary and most recently on the 22nd of May 2022.

He has also been involved in formulating management plans for National Parks and lectured in ecology.

A number of his AA reports have been successfully defended by An Bord Pleanala in High Court actions

taken by objectors who wished to have the Boards grant of planning permission decisions overturned.

He has also submitted a number of remedial NIS's and EIS's directly to An Bord Pleanala under section 261A of the Planning and Development Act, the findings of which were ratified by the Bord.

2.0 STAGE 1 - AA SCREENING

2.1 DEVELOPMENT LOCATION

The proposed development site is located (Figure 2.1) in the town land of Knappagh More with an address at the Second Sea Road, Sligo, Co. Sligo and is 2.401Km West of Sligo Town Hughes Bridge. The site is located adjacent to the existing Aylesbury Park housing estate. The site is approximately 3.29 hectares and is currently a greenfield site. The site was previously cleared of all vegetation approximately 10 years ago for a proposed development.

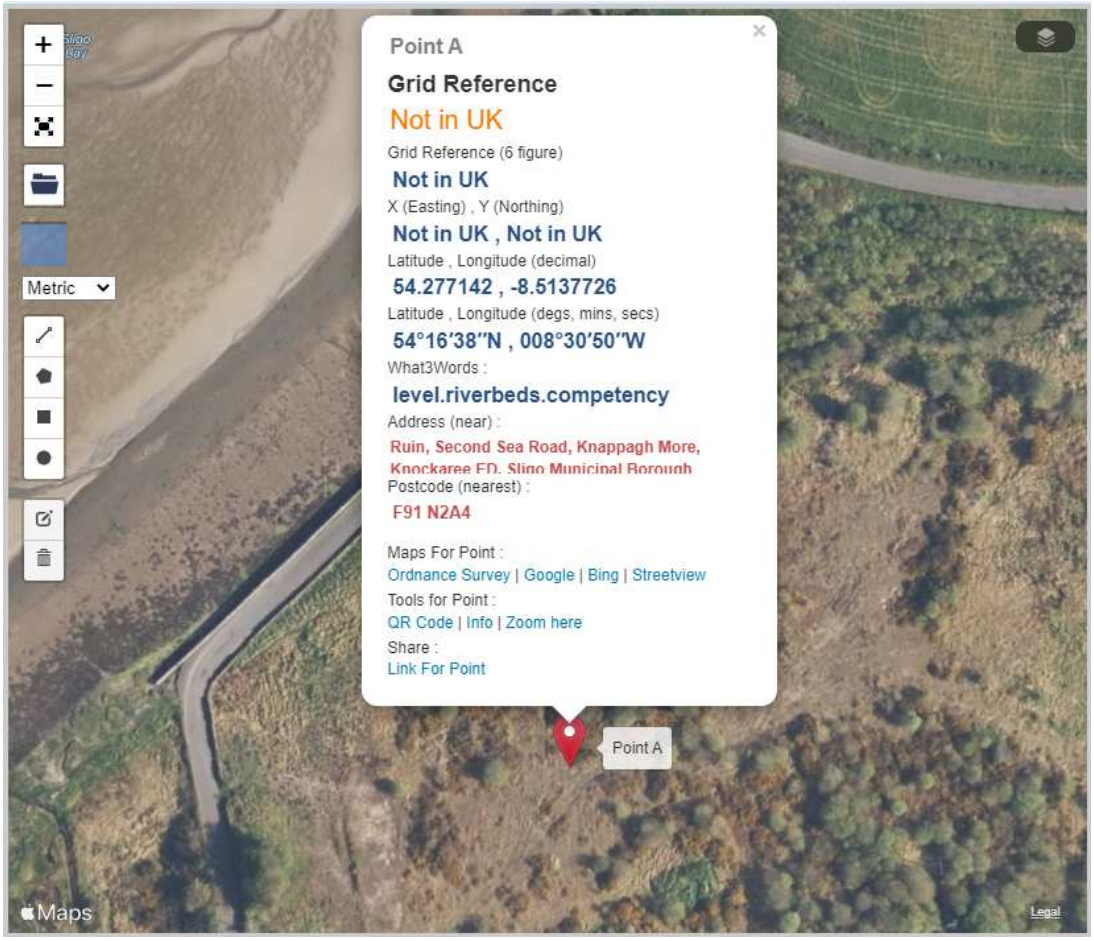


Figure 2.1 – Site Location.

2.2 DEVELOPMENT DESCRIPTION

Planning permission is being submitted for a development which will comprise the following:

a) A total of 95 No. residential units consisting of

5 No. – Type A– 4 Bed Semi Detached Houses

4 No. – Type A1 – 5 Bed Semi Detached Houses

46 No. – Type B/B1 – 3 Bed Semi Detached/Terraced Houses

18 No. – Type C – 2 Bed Apartments

8 No. – Type D – 1 Bed Semi Detached/Terraced Bungalow Houses

4 No. – Type E – 2 Bed Semi Detached Bungalow Houses

10 No. – Type F/F1 – 4 Bed Detached Houses

b) Demolition of 1 No. unfinished vacant house and garage,

c) Proposed Creche with associated landscaping and surface car parking,

d) On site wastewater pumping station,

e) All landscaping, boundary treatments, entrance improvements, public lighting, all associated site works and service connections.

2.3 RECEIVING ENVIRONMENT

The site is located in the Sligo Bay & Drowse catchment which includes all streams entering tidal water in Sligo Bay and between Lenadoon Point and Aughrus Point, Co. Donegal. The catchment has a surface area of 1,866km². The largest urban centre is Sligo Town. The other main urban centers are Ballymote, Collooney, Ballysadare and Manorhamilton. The total population is approximately 59,184 with a population density of 32 people per km². A small part of this catchment, 109km² is located within Northern Ireland with the statistics presented here and the classification by the Water Framework Directive (WFD) / River Basin Management Plan (RBMP) referring specifically to the part of catchment located within the Republic. The site is located in the Carrowgobbaddagh 010 sub catchment and more specifically in the Knappagh 35 sub basin. Contiguous to the western site boundary is the Second Sea Road which appears on the historic 1847 maps and forms junctions with the Strandhill Road 0.365Km to the south and the Finisklin Road 0.893Km to the northeast. The Aylesbury Park housing estate is located along the southern boundary with the Sea View Park estate located 133M to the east. The aerial photographs (Figure 2.1) of the site indicate significant historical disturbance with the proposed development site stripped post 2000 which dictates that no natural habitats are present in their original form.

Figure 2.2 – Historic Satellite Imagery

The history maps 1837 – 1842 also indicate the presence of the Sea View Road and training wall to the east bisecting the proposed development site from the bay area.

The underlying geology is DUIL (dinantian upper impure limestone) which contains a locally important aquifer (LI) of high (H) vulnerability. The soils on site are a mix of AminDW (acid mineral deep well drained brown earths and grey / brown podzolics) in the western section which gives way to AminPD (acid mineral poorly drained surface water and ground water gleys) in the central section with Lac along the eastern side. These all overlie a subsoil defined by the GSI as TMp (till derived chiefly from metamorphic rocks). The site is not located within a designated or proposed Natura site with the closest being 10.902M from the Western Boundary which is the Cummeen Strand / Drumcliff Bay (Sligo bay) SAC 000627 with the Cummeen Strand SPA site code 004035 2.81M north west across the local access road. It was noted that at this location the Natura designations alos included the sections of the sea road and dwellings. The on-site habitat is described as predominantly a mosaic of GS4, GA1, BL3, ED3 and WS1 with the dominant habitats being ED3 and WS1. There are also elements of BL1 along the sea road and ED2 along the FW4 (drain) which bisects the development site. The drain is not a natural feature as it does not appear on any of the historic maps between 1837 and 1930. This is supported by its straight steep sided morphology and was likely excavated to drain a low-lying area to the east and was recently cleaned (Note this was not associated with this development or carried out by the applicant associated with this development). There are smaller elements of WN6 and FS1 within the main body of the site with WL1 / WL2 along the Eastern boundary. There is an area which is transitioning to WN6 to the south of the drain however there is no proposal to develop that area. The site has previously been subject to development with an existing derelict house present.

The available aerial photographs also indicate that it the entire site was stripped post 2000 indicating that no natural habitats would remain. The semi urban setting dictates that the surrounding land use consists of commercial building, industrial estates, roads, housing estates and amenity grassland. The noise levels at the site are dominated by Road Traffic Noise (RTN) and general continuous anthropogenic activity from the existing housing estates, Second Sea Road and industrial estates.

There is no existing qualitative or quantitative data for ground water in the immediate area of the proposed development. The NRBMP indicate that the ground water status is "*Good*" and "*At Risk*" and not in a nutrient sensitive area but is in an "*Area for Action*" however there are no proposals to discharge to ground water associated with the project. The near surface phosphate susceptibility PIP is between 2 and 4 with the near surface nitrate susceptibility PIP identified by the EPA as 4/3 and the sub surface N between 4 and 5. For the bulk of the site there are no PIP -P flow delivery paths present with only very small elements of medium to high PIP-P flow paths present. On the main body of the site there are no PIP-P flow delivery points present with only 4 medium and 2 high PIP – P flow delivery points present on the southern boundary.

The Garravogue at this location is considered to be of "*Poor*" status and "*At risk*" with the Q value down stream at station RS35G010200 recorded as 3 in 2018 however there are no direct hydro geological links between the proposed development site and the Garravogue catchment with no direct discharges to any surface water associated with the project without prior passing though a petrol interceptor and associated attenuation. The Knappagh Stream to the north is currently unassigned regarding the status.

The EPA Q values are more pertinent regarding empirical evidence when completing the AA process which is

ratified by various NPWS detailed conservation objectives which make specific reference to the Q values when considering potential impacts on species.

The proposed development will connect to the Sligo Town sewer tertiary treatment (D0014-001) plant which is designed for a p.e. of 50,000 with the current loading in the order of p.e.25,741.

The air quality in the area is described as very good (zone D) which translates to the following, SO2 0-49µgM-3 (1hr average), NO2 0-36 µgM-3 (1hr average), O3 0-39 µgM-3 (1hr average) and PM10 0-19 µgM-3 (24hr average).

2.4 BRIEF DESCRIPTION OF THE KEY COMPONENTS OF THE PROJECT

The development is currently programmed to take 20 months to complete the construction works. This will be done as one continuous phase (No gap or stop between works). The start date will depend on the grant of planning permission, pre-commencement conditions and procurement. This programme takes due cognisance of the requirements of the likely planning conditions imposed. Mitigation measures in relation to the construction process are dealt with in this plan accordingly. Prior to any construction work commencing, environmental control measures will be prepared as outlined in this plan. A detailed programme and scope of works will be compiled and implemented in due course.

It is intended that the work will be undertaken in the following stages:

- Site set up and establishment.
- Marking out of site services on the ground.
- Set up environmental control measures.
- Site clearance and demolition of the existing building on the site.
- Marking out of house locations.
- Digging foundations and groundworks.
- Importing stone and pouring foundations.
- Blockwork.
- Roofing.
- Windows and doors.
- First fix electrical, plumbing and carpentry.
- Internal and external plastering.
- Second fix electrical, plumbing and carpentry.
- Construction of culvert over drainage ditch.
- Construction of site pumping station.
- Finishing external groundworks and landscaping.
- Commissioning and decorating.

The PSCS's proposed sequence of works will take due cognisance of the requirements of any planning conditions and the PSCS's contractual obligations. Environmental control measures will be implemented and maintained during construction works. The works will follow a sequential sequence starting at Phase 1 and

working through to Phase 5. The starting point will be confirmed upon review and appointment of the PSCS.

The PSCS will also develop individual Environmental/Construction Work Method Statements, tailored to the project which will outline the method of work in further detail. These documents will have:

- A clear scope.
- A description of the particular construction activities and location.
- A description of the potential environmental effects and safety hazards that relate to the specific activities.
- Detailed site or activity-specific mitigation measures.
- Details on any permits or connection agreements.
- A description of training requirements.
- A table detailing revision history.

The PSCS will identify all potential environmental risks within the works or access areas, report these to the Site Manager and see that all employees working on-site follow, and strictly adhere to site procedures as minimum requirements.

The resources required on the project will be similar to a housing construction project of this size and scale. In addition to the site compound plant, it is envisaged that the following plant will be required onsite:

- 1 No. 3, 8, 12 and 20-ton excavator and attachments
- 2 No. 6 and 9-ton dumpers
- 2 No. 14m teleporters
- 1 No. wheel wash power washer
- 1 No. site van/jeep
- 3 No. cement mixers
- 2 No. 6inch water pumps
- 1 No. 5ton roller
- 2 No. whacker plates
- 20-ton tipper lorries (As required for deliveries & excavation)

The WN6 section of the site is to be retained with no development in that location.

The proposed project will connect to the Sligo Town sewer via an onsite wastewater pumping station. Storm water will be indirectly discharged to the southern drain via petrol interceptors and an attenuation tank.

The front of the site will be set back in accordance with the site layout and agreement with Sligo County Council along with the public street lighting. It is also proposed to pipe a section of the southern drain and to install a flood relief duck billed valve on the drain.

All landscaping, boundary treatments, entrance improvements, public lighting (internal and along the Second Sea Road), all associated site works and service connections.

The documents accompanying the application include,

(1) Flood Risk Assessment Report

(2) CEMP

(3) Bat Survey

(4) Landscape Plan

2.5 NATURA 2000 SITE(S) WITHIN 15KM ZONE

NHA's / pNHA's are included in the for assessment where they are standalone sites, where there is dual designation i.e. both an SPA or SAC and an NHA then the Natura site designation is considered in preference to the NHA designation. It is an objective, at EU level, to increase or expand the number and / or areas designated as SAC's or SPA's consequently there is a likelihood that certain NHA's (or section there of) will be re-designated as Natura Sites at a future date which has implications for the section of the assessment which considers planned or contemplated nature conservation and / or Biodiversity targets. It is the considered opinion that the omission of the NHA's / pNHA's from the Appropriate Assessment (AA) process would result in the process being deficient and therefore they have being included. Not withstanding this it is the prerogative of the competent authority to include or omit these sites when completing the AA process however their inclusion, in this report, does not compromise the validity of the Appropriate Assessment process.

Natura Sites Within 15Km	Distance & Direction
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627	10.902M NW
Lough Gill SAC 001976	2.382Km E
Ballysadare Bay SAC 000622	5.506Km SW
Unshin River SAC 001898	6.827Km S
Union Wood SAC 000638	7.352Km SSE
Ben Bulben, Gleniff and Glenade Complex SAC 000623	7.550Km NE
Streedagh Point Dunes SAC 001680	12.899Km N
Cummeen Strand SPA 004035	2.81M West
Drumcliff Bay SPA 004013	4.035Km North
Ballysadare Bay SPA 004129	5.506Km SW
Ballintemple and Ballygilgan SPA 004234	10.584Km NW
Sligo/Leitrim Uplands SPA 004187	6.899Km NE
Ardboline Island and Horse Island SPA 004135	12.488Km NW

Slieveward Bog NHA 001902	8.106Km S
Crockanus / Keelogyboy Bog NHA 002435	6.899Km North east
Colgagh Lough pNHA 001658	6.829Km E
Knocknarea Mountain and Glen pNHA 001670	3.694Km SW

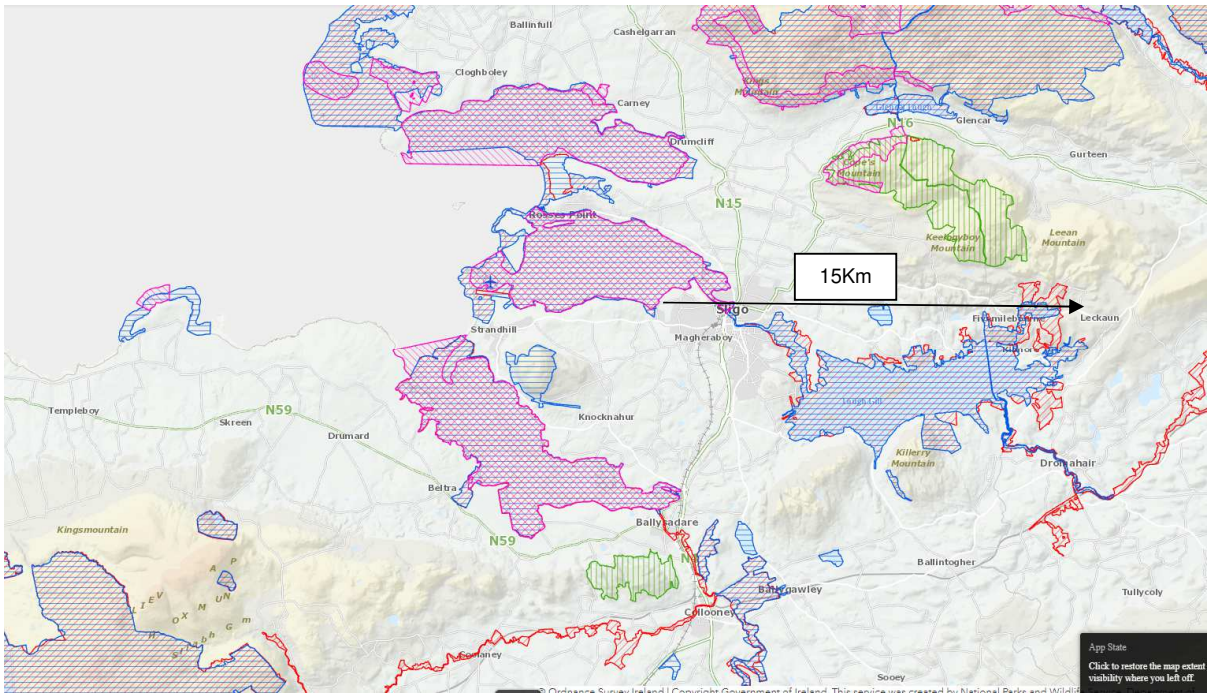


Figure 2.3 – 15KM Radius from Site.

2.6 PRELIMINARY ASSESSMENT OF NATURA 2000 SITE(S) WITHIN 15KM IMPACT ZONE

Name of Natura Sites Within 15Km including Distance & Direction	Qualifying Interests	Comments:	Further Consideration Required
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627 10.902M NW	Habitats 1130 Estuaries 1140 Mudflats and sand flats not covered by seawater at low tide 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* 5130 Juniperus communis formations on heaths or	Proximity to the Natura site requires further consideration as impacts likely or uncertain.	Yes

	calcareous grasslands 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) 7220 Petrifying springs with tufa formation (Cratoneurion)* Species 1095 Sea Lamprey *(Petromyzon marinus)* 1014 Narrow-mouthed Whorl Snail *(Vertigo angustior)* 1365 Harbour Seal *(Phoca vitulina)* 1099 River Lamprey *(Lampetra fluviatilis)* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000627.pdf		
Lough Gill SAC 001976 2.382Km E	Habitats 3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates *(Festuco-Brometalia*) (* important orchid sites) 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles 91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion* incanae, Salicion albae)* Species 1355 Otter *(Lutra lutra)* 1099 River Lamprey *(Lampetra fluviatilis)* 1096 Brook Lamprey *(Lampetra planeri)* 1095 Sea Lamprey *(Petromyzon marinus)* 1106 Salmon *(Salmo salar)* 1092 White-clawed Crayfish *(Austropotamobius pallipes* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001976.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests or non qualifying interests. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	No
Ballysadare Bay SAC 000622	Habitats 1130 Estuaries 1140 Mudflats and sandflats not covered by	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site	No

5.506Km SW	seawater at low tide 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* 2190 Humid dune slacks Species 1014 Narrow-mouthed Whorl Snail *(Vertigo angustior)* 1365 Harbour Seal *(Phoca vitulina)* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000622.pdf	by any qualifying interests or non qualifying interests. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site. The Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627 is located between the development site and this natura site. Therefore prior to an insignificant impact on it there would have to be significant impacts on the Cumeen Strand SAC which would not be permissible.	
Unshin River SAC 001898 6.827Km S	Habitats 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) 91E0 Alluvial forests with *Alnus glutinosa* and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* Species 1355 Otter *(Lutra lutra)* 1106 Salmon *(Salmo salar)* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001898.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	No
Union Wood SAC 000638 7.352Km SSE	Habitats 91A0 Old sessile oak woods with *Ilex* and Blechnum in the British Isles	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site	No

	http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000638.pdf	by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	
Ben Bulben, Gleniff and Glenade Complex SAC 000623 7.550Km NE	Habitats 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation 4010 Northern Atlantic wet heaths with *Erica tetralix* 4030 European dry heaths 4060 Alpine and Boreal heaths 5130 Juniperus communis formations on heaths or calcareous grasslands 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) 6230 Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)* 6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels 7130 Blanket bogs (* if active bog) 7140 Transition mires and quaking bogs 7220 Petrifying springs with tufa formation (Cratoneurion)* 7230 Alkaline fens 8110 Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) 8120 Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii) 8210 Calcareous rocky slopes with chasmophytic vegetation Species 1355 Otter *(Lutra lutra)* 1013 Geyer's Whorl Snail *(Vertigo geyeri)*	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	No

	http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000623.pdf		
Streedagh Point Dunes SAC 001680 12.899Km N	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1220 Perennial vegetation of stony banks 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1410 Mediterranean salt meadows (*Juncetalia maritimi*) 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* Species 1014 Narrow-mouthed Whorl Snail *(Vertigo angustior)* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001680.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	No
Cummeen Strand SPA 004035 2.81M West	Birds A162 Redshank *(Tringa totanus)* A130 Oystercatcher *(Haematopus ostralegus)* A046 Light-bellied Brent Goose *(Branta bernicla hrota)* Habitats Wetlands http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004035.pdf	Proximity to the Natura site required further consideration as impacts likely or uncertain.	Yes
Drumcliff Bay SPA 004013 4.035Km North	Birds A157 Bar-tailed Godwit *(Limosa lapponica)* A144 Sanderling *(Calidris alba)* Habitats Wetland http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004013.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura	No

		site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	
Ballysadare Bay SPA 004129 5.506Km SW	Birds A157 Bar-tailed Godwit *(Limosa lapponica)* A046 Light-bellied Brent Goose *(Branta bernicla hrota)* A141 Grey Plover *(Pluvialis squatarola)* A162 Redshank *(Tringa totanus)* A149 Dunlin *(Calidris alpina)* Habitats Wetlands http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004129.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	No
Ballintemple and Ballygilgan SPA 004234 10.584Km NW	Birds A045 Barnacle Goose *(Branta leucopsis)* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004234.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	No
Sligo/Leitrim Uplands SPA 004187 6.899Km NE	Birds A346 Chough *(Pyrrhocorax pyrrhocorax)* A103 Peregrine *(Falco peregrinus)* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004187.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the	No

		qualifying interests to expand in range such that they would encompass the proposed development site.	
Ardboline Island and Horse Island SPA 004135 12.488Km NW	Birds A045 Barnacle Goose *(Branta leucopsis)* A017 Cormorant *(Phalacrocorax carbo)* http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004135.pdf	No direct or indirect links to the proposed development site. No potential for ex situ use of the development site by any qualifying interests, annexed species or species of interest. Development site not visible from the Natura site. No potential for the qualifying interests to expand in range such that they would encompass the proposed development site.	No

The proposed development would not have any significant or insignificant, direct or indirect impacts on the Natura sites not requiring further consideration and it will not impact on their conservation objectives or negatively impact on the qualifying interests due to the large separation distance with either a major urban centre or extensive coastal areas segregating them from the proposed development site. The site synopsis as described by the NPWS for each site individually is included in the Appendix H where available. NPWS, whom are the state body with statutory responsibility for all Natura sites (SPA/SAC) and NHA's, generate the site synopsis and given their significance are presented in the appendix of this report in an un-condensed format; free from editing, abbreviation, interpretation or summation.

This ensures that there are no erroneous omissions from the natura site descriptions which facilitate, not just the competent authority, but also any other state body, public body or private individual in assessing each DESIGNATED site considered in its own merit within the framework of the document with no requirement to direct the reader to other sources of information or data. The inclusion of the site synopsis for each SAC / SPA / NHA in the report is necessary and essential as computer literacy, access to technology and or broad band cannot be assumed which may prohibit members of the public from accessing and assessing the data on which the report is based and ensures that the transparency and integrity of the planning system is maintained.

pNHA's do not have a statutory designation. Prior to statutory designation, pNHAs are subject to limited protection, in the form of:

- Agri-environmental farm planning schemes such as Rural Environment Protection Scheme (REPS 3 and 4) and Agri Environmental Options Scheme (AEOS) continue to support the objective of

maintaining and enhancing the conservation status of pNHAs. The farm plans operate for a period of 5 years. REPS 4 plans will continue to operate until 2014.

- Forest Service requirement for NPWS approval before they will pay afforestation grants on pNHA lands.
- Recognition of the ecological value of pNHAs by Planning and Licencing Authorities.

2.7 SITE CODE(S) OF NATURA SITE(S) FOR FURTHER CONSIDERATION

1. Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627
2. Cummeen Strand SPA 004035

2.8 DISTANCE OF THE PROPOSED PROJECT FROM THE NATURA SITE(S) IN THE POTENTIAL IMPACT ZONE

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC is located 10.902M northwest of the site boundary on the opposite side of the Second Sea Road.

Cummeen Strand SPA is located 2.81M west of the development site boundary across the Second Sea Road.

2.9 DESCRIPTION OF NATURA SITES FOR FURTHER CONSIDERATION

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627

This large coastal site is made up largely of two estuarine bays, Sligo Harbour and Drumcliff Bay. These are the estuaries of the Garavoge and Drumcliff rivers respectively. The estuaries are well sheltered and have extensive intertidal sand and mud flats. Coney Island provides the main shelter for Sligo Harbor, while a sandy/grassy spit protrudes from the Rosses peninsula and provides shelter for inner Drumcliff Bay. The site continues to the north-west of Drumcliff Bay to include the shallow marine waters of Browns Bay. A series of small islands, notably Ardbolin, occur here. Other coastal habitats are represented, including sand dunes, salt marshes, sandy and boulder beaches, and bedrock shoreline. In addition, there is a scattering of dry grassland, wet grassland, swamp vegetation and broad-leaved woodland. Improved grassland is included for the benefit of wintering geese. The site is largely underlain by Carboniferous limestone, but acidic rocks are also found at Rosses Point. An excellent series of fossilised corals occur at Serpent Rock in the north west of the site. The town of Sligo, a substantial urban centre with a regional port, is located along the eastern boundary of the Sligo Harbour section of the site. Agriculture is the dominant land use in the surrounding catchments.

Cummeen Strand SPA 004035

Cummeen Strand SPA comprises the greater part of Sligo Harbour, the middle one of the three 'arms' forming Sligo Bay. The site extends for up to 7 km from east to west and has an average width of c.2.5 km. The site is the estuary of the Garavoge River, a short slow-flowing river which flows from Lough Gill. The harbor is very enclosed, with the mouth of the harbor being sheltered by two islands (Coney Island and Oyster Island). A large proportion of the estuary is intertidal (> 80%). Sediments are predominantly sands or coarser materials, though muddy sands or moods also occur. Zostera beds are present. The intertidal sand and mud flats are fringed by salt marshes in places but mostly stony shoreline. Sligo Harbor is a regional port

for the town of Sligo.

Detailed ecological data can be found in Appendix XXX

2.10 QUALIFYING INTERESTS OF THE NATURA 2000 SITE(S) FOR FURTHER CONSIDERATION (FROM NPWS)

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627

Habitats

1130 Estuaries

1140 Mudflats and sandflats not covered by seawater at low tide

2110 Embryonic shifting dunes

2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes)

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*

5130 Juniperus communis formations on heaths or calcareous grasslands

6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)

7220 Petrifying springs with tufa formation (Cratoneurion)*

Species

1095 Sea Lamprey (Petromyzon marinus)

1014 Narrow-mouthed Whorl Snail (Vertigo angustior)

1365 Harbour Seal (Phoca vitulina)

1099 River Lamprey (Lampetra fluviatilis)

Cummeen Strand SPA 004035

Birds

A162 Redshank (Tringa totanus)

A130 Oystercatcher (Haematopus ostralegus)

A046 Light-bellied Brent Goose (Branta bernicla hrota)

Habitats

Wetlands

2.11 OTHER NOTABLE FEATURES OF THE NATURA 2000 SITE(S) (FROM NATURA 2000 DATA FORM)

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC (NPWS version: Oct 2020)
Quality and Importance:
The estuarine and intertidal sand and mud flat habitats at this site are extensive in area, generally of good quality and show a good diversity of species and biotopes. *Zostera* spp. occur. These habitats are considered typical for the north-west region. The fixed dunes and shifting Ammophila dunes are small in area and only of moderate quality, though embryonic dunes are well represented. The site has a good example of

petrifying springs with tufa formations, with several species of bryophyte typical of the Cratoneurion. The springs occur along seepage zones in clay sea cliffs. The site supports an area of *Juniper scrub*. The site has a nationally important colony of Phoca vitulina. Site is important for occurrence of the Annex II mollusk *Vertigo angustior* and the lamprey species *Petromyzon marinus* and *Lampetra fluviatilis*. A good diversity of waterfowl winter at site, notably internationally important populations of *Branta leucopsis* and *Branta bernicla hrota*. Site has regular populations of *Pluvialis apricaria* and *Limosa lapponica*, both Annex I Bird Directive species, and eight other species winter in nationally important numbers. *Phalacrocorax carbo* has a nationally important breeding colony and small numbers of other breeding seabirds occur.

Vulnerability

Threats, pressures and activities with impacts on the site

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	G02.01		i
M	G01.02		i
M	A02.01		i
L	J02.11.01		i
M	I01		i
M	D03.01		i
L	G05.01		i
M	E01.03		i
L	E03.03		i
L	J01.01		i
M	G01.03.02		i
L	J02.12.01		i
L	G02.08		i
H	F01.01		i
M	D03		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	G02.09		i

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

Cummeen Strand SPA
Quality and Importance:

Cummeen Strand is of importance for the diversity of wintering waterfowl and is an integral part of the larger unit of Sligo Bay. The site has an internationally important population of *Branta bernicla hrota* and supports nationally important numbers of Haematopus ostralegus and Tringa totanus. Both Pluvialis apricaria and Limosa lapponica utilise the site though in relatively low numbers. The intertidal flats, which have well-developed macro-invertebrate communities and Zostera beds, provide good feeding grounds for the wintering birds. Birds roost on the salt marshes and upper shoreline though on high tides some may leave

the site to roost elsewhere.

Vulnerability

Threats, pressures and activities with impacts on the site

Cummeen Strand SPA

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	E02		i
M	D01.02		o
M	H		i
H	F01		i
M	A08		o
H	E02		o
M	E01		o
H	D03.02		i
H	J02.01.02		i
L	F02.03		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
L	F02.03		i
H	D03.02		i
M	D01.02		o

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

2.12 ELEMENTS OF THE PROPOSED PROJECT WHERE THE POTENTIAL IMAPCTS ARE LIKELY OR UNKNOWN

The table below indicates the criteria under which the impacts on the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627 and the Cummeen Strand SPA 004035 are uncertain and will require further consideration in a stage 2 assessment. This is not exhaustive and may be expanded under the stage 2 assessment.

Potential Impact	Direct Effect	Indirect Effect
Loss of Qualifying Habitat in the Natura Sites	No land take from the SAC / SAP with no undesignated annexed / qualifying habitat types present on the development site.	No annexed qualifying / habitats listed in features on interest on the development site or contiguous to site. No potential for site to revert to an qualifying / annexed habitat type.
Qualifying Habitat Fragmentation in the Natura Sites	None of the SAC / SPA qualifying habitats present on the proposed development site as they are predominantly marine or contiguous to the marine environment (dunes, mud flats)	No indirect fragmentation as a terrestrial development site with qualifying interest habitats listed as Estuaries, Mudflats and sand flats not covered by seawater at low tide, Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Fixed coastal dunes with

		herbaceous vegetation (grey dunes), *Juniperus communis* formations on heaths or calcareous grasslands, Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites), Petrifying springs with tufa formation (Cratoneurion) and wetlands none of which are present on the proposed development site.
Potential Impacts on the Natura Sites from Disturbance	No direct disturbance impacts as no activity within the boundary of the SAC / SPA.	Potential disturbance on qualifying species during the heavier elements of the construction phase. Noise, light and vibration require consideration during construction and subsequent habitation / use.
Impacts on the migration of qualifying interest species	No impediment to migration as the project lacks the scale to impact on migrating avian species. The qualifying interest species of the SAC would not migrate across the proposed development site. The introduction of the duck billed valve and piping of the drain should be considered in the context of impacts on *Lampetra fluviatilis*	Indirect impact on the migration *Lampetra fluviatilis* should be considered with respect of the piping and flood mitigation measures.
Impact on Qualifying interest Species in the Natura Sites	None – predominantly aquatic or located in the tidal, inter tidal, supra tidal zones.	Predominantly marine or located in the tidal, inter tidal, supra tidal zones or zones adjacent to such habitat therefore potential indirect impacts on water quality should be explored further. Light, fugitive dust, noise and vibration require further consideration both during construction and with subsequent use.
Potential Impacts on the Natura Sites from Reduction in qualifying species density	None	Although no suitable on-site habitat for qualifying species in a semi urban environment on a site that was previously cleared the use of the bay by qualifying interest species should be examined in the context of reduction in water quality and disturbance during construction
Potential Impacts on the Natura Sites Water quality (surface or ground water)	No direct discharge to surface water features therefore no direct impacts.	Potential for indirect impacts on water quality during construction should be explored further. Post construction impacts to also be considered – loading to Sligo Town WWTP.
Potential Impacts on the Natura Sites Water resources	None – no abstraction from surface water or ground water	None – no abstraction from surface water or ground water
Potential Impacts on the Natura Sites from Light	Light Leakage on to the bay area from proposed public lighting along the sea road	Potential indirect leakage to the bay area post construction. Light requirements during construction should also be considered.
Potential Impacts on the Natura Sites from Noise	Noise during construction should be considered further.	Noise during construction and with subsequent occupation use should be considered.

Potential Impacts on the Natura Sites from Vibration	No absorbed into background – separation distance to relevant habitat	Vibration during construction required further consideration.
Potential Impacts on the Natura Sites from Compaction	No entry to Natura area	None – no entry to SAC / SAP area
Potential Impacts on the Natura Sites from Traffic	No - absorbed into background	Traffic movements and use of heavy plant during construction phase should be considered further.
Synergistic effects on the Natura Sites	In combination impacts should be considered in the context of other plans or projects.	In combination impacts should be considered in the context of other plans or projects.
Introduction of extraneous material to the aquatic environment and / or qualifying habitats in the Natura Sites	No direct or indirect introduction of extraneous material to Natura site area.	Potential introduction of extraneous material during construction to be considered
Potential Impacts on the Natura Sites during Construction	No direct impacts are anticipated during construction with all potential impacts considered indirect.	Efficacy of the CEMP should be assessed in the context of control over the construction phase to ensure that there are no impacts on the natura sites.
Potential Impacts on the Natura Sites - Habitation	None absorbed into background	Cursory examination due to semi urban location.
Potential Impacts on Air quality in the Natura sites	No direct impacts on air quality within the natura sites are anticipated during construction or with subsequent habitation.	Fugitive dust generation during construction should be assessed further.
Climatic factors which may impact on the Natura sites	None – lack of scale and magnitude of the project.	None – lack of scale and magnitude of the project.
Interference with the key relationships that define the structure of the natura site	No direct impacts anticipated	No physical impacts on the structure of the natura site, no land take and the project will not require any activates to entry or traverse the natura site. No alterations to the coast line therefore no impacts on natural processes (erosion / sedimentation). The potential impact on water quality should be examined.
Interference with the key relationships that define the function of the natura site	No impacts anticipated	The potential impacts on the key relationships that define the function of the natura site are all indicated in the previous section of this table and are all concerned with indirect impacts.

2.13 Other Plans and Projects

In accordance with the EU guidance document on Appropriate Assessment, *'Assessment of Plans and Projects Significantly Affecting Natura 2000 sites',* other plans and projects in the area must be considered in addition to the proposed development. Planning applications lodged with the Local Authority (within recent years) will be investigated to ascertain potential impacts, in order to identify any possible cumulative or in-combination impacts associated with the development (Table below).

Local development within the adjacent urban area consists of, mainly, residential usage. The majority of dwellings in the area are served by public sewer. There is no large scale agricultural or afforestation land usage locally. Other plans and projects in the area, in additional to the proposed development, will not have any significant long-term negative impact on nearby Natura 2000 sites.

Reference	Plan or Project	Potential Cumulative or in-combination impacts (long term, short, accumulative)
10127	Construction of 12 no. two storey semi-detached houses and 1 no. two storey detached house with connections to existing services and all associated site works	Negligible
03856	Construction of 10 no. dwellings with connection to public services and all associated site works on lands previously granted permission for the construction of 32 no. dwellings (presently being constructed under PL 99/1101	Negligible
10495	Construction of 4 no. two storey semi-detached houses with connections to existing services and all associated site works	Negligible
0361	Construct 4 no dwelling houses (2 blocks of semi-detached) and associated siteworks	Negligible
17495 & 17496	Development consisting of the erection of two one and a half storey dwelling house, site entrance and access road to be shared with an adjoining site and all associated site works. A Natura Impact Statement (NIS) was submitted to the planning authority with the planning application.	Negligible
19483	Development consisting of the completion of an unfinished housing development on a site of 1.176 hectares forming part of the overall estate of Aylesbury Park, Knappaghmore, Sligo. The proposed development consisting of 34 no. terraced houses and 4 no. maisonettes, all ancillary site development works, landscaping and boundary treatments including the provision of public and private open space at Aylesbury Park. Previously granted permission was for PL 17/63 which consisted fo 27 no. houses. A Natura Impact Statement has been submitted.	Negligible
20112	Development consisting of the retention of existing detached two storey dwelling house as constructed and also to apply to install a waste water treatment system and associated percolation area	Negligible

2.14 SCREENING CONCLUSION

The Appropriate Assessment screening indicates that two of the Natura sites within the 15Km radius of the

proposed development, the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627 and the Cummeen Strand SPA 004035, require further assessment as the potential impacts are likely or uncertain.

All the other Natura sites are effectively screened out at this juncture as there are no direct or indirect links between the development site and those natura sites. There is no potential for ex situ use of the development site by any qualifying interests species for which the screened out natura sites were designated with none of their qualifying habitats present. The development site not visible from those Natura sites with no potential for the qualifying interests of those natura sites to expand their range such that they would encompass the proposed development site.

The indirect hydro geological links to other natura sites do not require them to be move forward to the stage 2 assessment as the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and the Cummeen Strand SPA are located between them and the proposed development site. This dictates that there would have to be a significant impact on the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627 and the Cummeen Strand SPA 004035 as a result of the proposed project prior to them being impacted which would not be permissible.

Completed by: Paul Neary B.Sc. (Hns. Env. Sc.), M.Sc (eco. Tox)	**Date: 18/05/22**

3.0 STAGE 2 - NATURA IMPACT ASSESSMENT

3.1 INTRODUCTION

The Natura Impact Statement (NIS) has been prepared in accordance with the current guidelines as prescribed by NPWS (NPWS, 2009, Revised February 2010), the EU guidance on the provisions of Article 6 of the 'Habitats' Directive (2018) and provides an impact assessment for the proposed development at Knappagh More, Second Sea Road, Sligo, Co. Sligo on the Natura Sites deemed to require further consideration from the Stage 1 assessment.

The NIS will provide the complete data, analysis and information for the competent authority in order to establish whether or not the proposed development is likely to have a significant impact on the Natura sites considered and impart sufficient information to assist the competent authority in its decision-making process. Cognisance is taken of the Natura sites conservation objectives, supporting documentation, qualifying interests (species and habitats) for which the Natura 2000 sites were designated. The Natura 2000 sites on which the NIS is based are as follows.

(1) Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627
(2) Cummeen Strand SPA 004035

The methodology employed in the Natura Impact Statement is cognisant of the EPA Advice Notes on Current Practice (2003); EPA 'Guidelines on the Information to be contained in Environmental Impact Statements' (2022), Guidelines on the information to be contained in EIARs (2022), the Institute of Ecology and Environmental Management's Guidelines for Ecological Impact Assessment (CIEEM, 2018) version 1.1 and with reference to the National Roads Authority Guidelines (NRA) for ecological impact assessment (Revision *2,* 2009) and guidelines for preparing Environmental Impact Assessment Reports (EIARs) for projects covered by the EIA Directive (2022).

3.2 QUALIFYING INTERESTS OF THE NATURA 2000 SITE(S) (FROM NPWS)

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627

Habitats

1130 Estuaries
1140 Mudflats and sandflats not covered by seawater at low tide
2110 Embryonic shifting dunes
2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes)
2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*
5130 Juniperus communis formations on heaths or calcareous grasslands
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)

7220 Petrifying springs with tufa formation (Cratoneurion)*

Species

1095 Sea Lamprey (Petromyzon marinus)

1014 Narrow-mouthed Whorl Snail (Vertigo angustior)

1365 Harbour Seal (Phoca vitulina)

1099 River Lamprey (Lampetra fluviatilis)

Cummeen Strand SPA 004035

Birds

A162 Redshank (Tringa totanus)

A130 Oystercatcher (Haematopus ostralegus)

A046 Light-bellied Brent Goose (Branta bernicla hrota)

Habitats

Wetlands

3.3 NOTABLE FEATURES OF THE NATURA 2000 SITE(S) (FROM NATURA 2000 DATA FORM)

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 00627 (NPWS version: Oct 2020)

This large coastal site is made up largely of two estuarine bays, Sligo Harbour and Drumcliff Bay. These are the estuaries of the Garavoge and Drumcliff rivers respectively. The estuaries are well sheltered and have extensive intertidal sand and mud flats. Coney Island provides the main shelter for Sligo Harbour, while a sandy/grassy spit protrudes from the Rosses peninsula and provides shelter for inner Drumcliff Bay. The sitecontinues to the north-west of Drumcliff Bay to include the shallow marine waters of Browns Bay. A series of small islands, notably Ardbolin, occur here. Other coastal habitats are represented, including sand dunes, salt marshes, sandy and boulder beaches, and bedrock shoreline. In addition, there is a scattering of dry grassland, wet grassland, swamp vegetation and broad-leaved woodland. Improved grassland is included for the benefit of wintering geese. The site is largely underlain by Carboniferous limestone, but acidic rocks are also found at Rosses Point. An excellent series of fossilised corals occur at Serpent Rock in the north west of the site. The town of Sligo, a substantial urban centre with a regional port, is located along the eastern boundary of the Sligo Harbour section of the site. Agriculture is the dominant landuse in the surrounding catchments.

Quality and Importance

The estuarine and intertidal sand and mud flat habitats at this site are extensive in area, generally of good quality and show a good diversity of species and biotopes. *Zostera* spp. occur. These habitats are considered typical for the north-west region. The fixed dunes and shifting Ammophila dunes are small in area and only of moderate quality, though embryonic dunes are well represented. The site has a good example of petrifying springs with tufa formations, with several species of bryophyte typical of the Cratoneurion. The

springs occur along seepage zones in clay sea cliffs. The site supports an area of *Juniper scrub*. The site has a nationally important colony of Phoca vitulina. Site is important for occurrence of the Annex II mollusk *Vertigo angustior* and the lamprey species *Petromyzon marinus* and *Lampetra fluviatilis*. A good diversity of waterfowl winter at site, notably internationally important populations of *Branta leucopsis* and *Branta bernicla hrota*. Site has regular populations of *Pluvialis apricaria* and *Limosa lapponica*, both Annex I Bird Directive species, and eight other species winter in nationally important numbers. *Phalacrocorax carbo* has a nationally important breeding colony and small numbers of other breeding seabirds occur.

Vulnerability

Threats, pressures and activities with impacts on the site

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	G02.01		i
M	G01.02		i
M	A02.01		i
L	J02.11.01		i
M	I01		i
M	D03.01		i
L	G05.01		i
M	E01.03		i
L	E03.03		i
L	J01.01		i
M	G01.03.02		i
L	J02.12.01		i
L	G02.08		i
H	F01.01		i
M	D03		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	G02.09		i

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

Cummeen Strand SPA 004035 (NPWS version: October 2020)

Cummeen Strand SPA comprises the greater part of Sligo Harbour, the middle one of the three 'arms' forming Sligo Bay. The site extends for up to 7 km from east to west and has an average width of c.2.5 km. The site is the estuary of the Garavoge River, a short slow-flowing river which flows from Lough Gill. The harbour is very enclosed, with the mouth of the harbour being sheltered by two islands (Coney Island and Oyster Island). A large proportion of the estuary is intertidal (> 80%). Sediments are predominantly sands or coarser materials, though muddy sands or muds also occur. Zostera beds are present. The intertidal sand and mud flats are fringed by salt marshes in places but mostly stony shoreline. Sligo Harbour is a regional

port for the town of Sligo.

Quality and Importance

Cummeen Strand is of importance for the diversity of wintering waterfowl and is an integral part of the larger unit of Sligo Bay. The site has an internationally important population of *Branta bernicla hrota* and supports nationally important numbers of Haematopus ostralegus and Tringa totanus. Both Pluvialis apricaria and Limosa lapponica utilise the site though in relatively low numbers. The intertidal flats, which have well-developed macro-invertebrate communities and Zostera beds, provide good feeding grounds for the wintering birds. Birds roost on the salt marshes and upper shoreline though on high tides some may leave the site to roost elsewhere.

Vulnerability

Threats, pressures and activities with impacts on the site

Cummeen Strand SPA

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	E02		i
M	D01.02		o
M	H		i
H	F01		i
M	A08		o
H	E02		o
M	E01		o
H	D03.02		i
H	J02.01.02		i
L	F02.03		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
L	F02.03		i
H	D03.02		i
M	D01.02		o

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

3.4 CONSERVATION OBJECTIVES (FROM NPWS)

The detailed conservation objectives and supporting documents are also available for reference on the NPWS web site.

Conservation Objective: Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627 (18/09/2013: version 1)

Introduction European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites. A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

(1) 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
(2) the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
(3) there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. 1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary. 2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited. 3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another. 4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out. 5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

The table below lists the specific conservation objectives for the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627

Qualifying Interest	Targets
1130 Estuaries	To maintain the favourable conservation condition of Estuaries in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
1140 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
2110 Embryonic shifting dunes	To maintain the favourable conservation condition of Embryonic shifting dunes in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)	To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)	To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
5130 Juniperus communis formations on heaths or calcareous grasslands	To restore the favourable conservation condition of Juniperus communis formations on heaths or calcareous grasslands in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC,
7220 Petrifying springs with tufa formation (Cratoneurion)	To maintain the favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
1014 Marsh *Snail Vertigo*	To maintain the favourable conservation condition of Narrow-

angustior	mouthed Whorl Snail in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
1095 Sea Lamprey *Petromyzon marinus*	To restore the favourable conservation condition of Sea Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
1099 River Lamprey *Lampetra fluviatilis*	To maintain the favourable conservation condition of River Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
1365 Harbour seal *Phoca vitulina*	To maintain the favourable conservation condition of Harbour Seal in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

Conservation Objective Cummeen Strand SPA 004035 (10/09/13: Version 1)

Introduction European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites. A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

(1) 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
(2) 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.

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. 1. The targets given in these conservation objectives are based on best available information at

the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary. 2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited. 3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another. 4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out. 5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly were instructed in the targets or notes for a particular attribute

The table below lists the specific conservation objectives for the Cummeen Strand SPA 004035

Qualifying Interest	Targets
A046 Brent Goose Branta *bernicla hrota*	To maintain the favourable conservation condition of Light-bellied Brent Goose in the Cummeen Strand SPA No significant decrease in the range, timing and intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation
A130 Oystercatcher *Haematopus ostralegus*	To maintain the favourable conservation condition of Oystercatcher in Cummeen Strand SPA No significant decrease in the range, timing and intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation
A162 Redshank *Tringa totanus*	To maintain the favourable conservation condition of Redshank in Cummeen Strand SPA No significant decrease in the range, timing and intensity of use of areas by redshank, other than that occurring from natural patterns of variation
A999 Wetlands	To maintain the favourable conservation condition of wetland habitat in Cummeen Strand SPA as a resource for the regularly occurring migratory waterbirds that utilise it. The permanent area occupied by the wetland habitat should be stable and not significantly less than 1732 hectares, other than that occurring from natural patterns of variation

There will be no direct effects on the QIs of the EU Designated Sites identified in this NIS. The EU Designed Sites are located entirely outside of the proposed development and no evidence of SCI or suitable habitat for

these species were recorded during the ecological site survey. No suitable supporting habitat for QI species were recorded within the site and none of the QI habitats were recorded within or adjacent to the site.

3.5 DESCRIBE THE INDIVIDUAL ELEMENTS OF THE PROJECT LIKELY TO GIVE RISE TO IMPACTS ON THE NATURA 2000 SITE

The individual elements of the project likely to give rise to impacts or where the impacts are uncertain are listed below.

Element	Potential Impact
Site set up and establishment – Construction of site access road.	Potential indirect impacts (i) Noise and movement of heavy plant (indirect disturbance) (ii) Suspended solids to drain on southern boundary (iii) Dust generation (iv) Clearance of vegetation (v) Vibration (vi) Soil and sub soil management
Marking out of site services on the ground.	Low level manual activity with no potential for significant or insignificant impacts directly or indirectly.
Set up of environmental control measures including construction compound	Low level activity with no potential for significant or insignificant impacts directly or indirectly.
Site clearance and demolition of existing building on the site	Potential indirect impacts (i) Noise and movement of heavy plant (indirect disturbance avian species) (ii) Suspended solids to drain on southern boundary (indirect) (iii) Dust (iv) Vibration (v) Clearance of vegetation (vi) Hydrocarbon management (vii) Maintenance of plant (viii) Accidental spills(fuel oils, hydraulic fluid) (ix) Incorrect disposal of C&D waste

Use of construction compound	Potential indirect impacts (i) Indirect impacts from potential impact on drain through the Storage of construction related compounds (aggregates, mortar mix, plasticiser, cement, skim, lime, bonding, plaster board etc.), Hydrocarbon management (storage, refuelling accidental spills), waste packaging, waste construction materials, storage of construction related materials, mixing of small quantities of concrete, worker sanitary facilities, delivery of construction related materials act .
Marking out of house locations.	Low level manual activity with no potential for significant or insignificant impacts directly or indirectly.
Digging / pouring of foundations and general groundwork's	Potential indirect impacts (i) Noise and movement of heavy plant (indirect disturbance) (ii) Suspended solids to drain on southern boundary (soils & sub soil) (iii) Cementitious material to drain (iv) Dust (v) Vibration (vi) Soil and Sub soil management (vii) Maintenance of plant (viii) Hydrocarbon management (refuelling) (ix) Accidental spills (fuel oils, hydraulic fluid)
Importing stone and pouring foundations for set back of existing road side wall and pouring of new foot path.	Potential indirect impacts (i) Vibration (ii) Noise (iii) Disturbance (SPA avian Species) (iv) Cementitious material to surface water (v) Suspended Solids to surface water (soils & sub soil)
Block work	Potential indirect impacts (i) cementitious material to drain (ii) Suspended solids to drain (aggregate storage and management)
Roofing	Potential indirect impacts (i) Impact noise

Windows and doors	Low level activity with no potential for significant or insignificant impacts directly or indirectly.
First fix electrical, plumbing and carpentry	Low level activity with no potential for significant or insignificant impacts directly or indirectly.
Internal and external plastering	Potential indirect impacts (i) Mixing of external render (scratch and final coat) cementitous material / storage of aggregates.
Second fix electrical, plumbing and carpentry	Low level activity with no potential for significant or insignificant impacts directly or indirectly
Construction of culvert over drainage ditch and installation of duck billed valve	Potential indirect impacts (i) Noise and movement of heavy plant (SPA avian species disturbance) (ii) Suspended solids to drain on southern boundary (iii) Impediment of aquatic species migration (SAC brook lamprey) (iv) Alteration to existing hydro geological conditions (v) Indirect impact on habitat for qualifying interest species (suspended solids to bay)
Construction of site foul pumping station and subsequent use	Potential indirect impacts (i) Noise and movement of heavy plant (disturbance) (ii) Suspended solids to drain on southern boundary (iii) Loading to Sligo Town sewage treatment plant from development
Finishing external groundwork	Low level activity with no potential for significant or insignificant impacts directly or indirectly
Commissioning and decorating	Low level activity with no potential for significant or insignificant impacts directly or indirectly

Landscaping	Potential indirect impacts (i) Accidental Introduction of invasive species to SAC (ii) Suspended solids to drain (soil and sub soil management)
Street lighting	Potential indirect impacts (i) Illumination of bay (disturbance)
Discharge of storm water to drain	Potential indirect impacts (i) Suspended solids to drain (ii) Hydrocarbons to drain
Decommissioning of construction compound	Potential indirect impacts (i) Waste material management

3.6 NPWS IDENTIFIED THREATS, PRESSURES AND ACTIVITIES WITH NEGATIVE IMPACTS ON THE NATURA SITES AND RELEVANCE TO THE PROPOSED PROJECT.

The following indicates the threats, pressures and activities which NPWS have identified as having negative impacts on the Natura sites. The relevance to the proposed project is also indicated.

NPWS identified Threats and pressures Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627			
Rank	**Threats and pressures [code]**	**inside/outside [i|o|b] the natura site**	**Relevance to the proposed project**
M	G02.01 Golf course	i inside	Not relevant to the proposed project
M	G01.02 Walking, horse riding and non-motorised vehicles	i inside	Not relevant to the proposed project
M	A02.01 agricultural intensification	i inside	Not relevant to the proposed project

L	J02.11.01 Dumping, depositing of dredged deposits	i inside	Not relevant to the proposed project
M	I01 Invasive non-native species	i inside	Not relevant to the proposed project
M	D03.01 Port areas	i inside	Not relevant to the proposed project
L	G05.01 Trampling, overuse,	i inside	Not relevant to the proposed project
M	E01.03 Dispersed habitation	i inside	Not relevant to the proposed project
L	E03.03 Disposal of inert materials	i inside	Not relevant to the proposed project
L	J01.01 Burning down	i inside	Not relevant to the proposed project
M	G01.03.01 Regular motorised driving	i inside	Not relevant to the proposed project
L	J02.12.01 Sea defense or coast protection works, tidal barrages	i inside	Not relevant to the proposed project
L	G02.08 Camping and caravans	i inside	Not relevant to the proposed project
H	F01.01 Intensive fish farming, intensification	i inside	Not relevant to the proposed project
M	D03 shipping lanes, ports, marine constructions	i inside	Not relevant to the proposed project

From table it can be clearly seen that all the potential negative impacts to the SAC are deemed to be those related to activities carried out inside the boundary of the SAC with no potential negative impacts identified by NPWS from activities outside of the SAC boundary that would compromise the integrity of the Natura site.

NPWS Identified Threats and pressures Cummeen Strand SPA 004035			
Rank	**Threats and pressures [code]**	**inside/outside [i|o|b] the natura site**	**Relevance to the proposed project**
M	E01 Urbanised areas, human habitation	O Outside	Relevant to the Proposed project
L	F02.03 Leisure fishing	i inside	Not relevant to the proposed project
H	D03.02 Shipping lanes	i inside	Not relevant to the proposed project
M	D01.02 Roads, motorways	O Outside	No new roads or motorways to be constructed as a result of the proposed project. Existing Sea road provides access to the proposed development site.
H	E02 Industrial or commercial areas	i inside	Not relevant to the proposed project
H	F01 Marine and Freshwater Aquaculture	i inside	Not relevant to the proposed project
M	H Pollution	i inside	No direct discharges to the
H	E02 Industrial or commercial areas	O Outside	Not relevant to the proposed project
H	J02.01.02 Reclamation of land from sea,	i inside	Not relevant to the proposed project

	estuary or marsh		
M	A08 Fertilisation	i inside	Not relevant to the proposed project

The table above indicates that there are only 4 potential negative impact activities outside of the boundary of the SPA have been identified by Ipswich are E01, D01.02, E02 and A08. Of these only E01 is relevant to the proposed project with the other 3 not related to or related to the proposed project.

3.7 POTENTIAL SIGNIFICANT IMPACTS ON THE NATURA SITE (S) - IMPACT PREDICTION

The nature of the proposed development on the site dictates that it lacks the potential to significantly negatively directly impact on the Cummeen Strand / Drumcliff Bay SAC / SPA. The criteria for assessing impact level have been extracted from those prescribed in Appendix 4 of the NRA EclA Guidelines (2004) criteria) and the EU guidance on the provisions of Article 6 of the 'Habitats' Directive *(2018)*. Terminology for impact significance and duration mirrors that set out by the EPA (2003). The potential impact magnitude described is the following sections, without mitigation, is neutral unless otherwise stated as being positive or negative. Where the impact is stated as being localised, it refers to the immediate area of proposed site with no impact out side of it. The activities with the potential for significant negative impacts to the Natura sites have been identified by NPWS in the Natura Data Forms and have been listed in the previous section.

3.8 POTENTIAL IMPACTS ON QUALIFYING NATURA HABITATS

The proposed development will not directly impact on any qualifying habitat for the SAC or the SPA (wetlands) as there are no such habitats present on the development site or contiguous to it. Historical photographs indicate that the proposed development site was stripped post 2000 which dictates that no natural habitats remained post stripping. There is no land take from either the SAC or SPA with no undesignated SAC or SPA qualifying habitats present on the development site consequently there would be no direct impact on the qualifying interests. The habitat most pertinent to the proposed project lies on the opposite side of the Second Sea Road is1140 Mud flats and sand flats not covered by seawater at low tide / Intertidal fine sand with Peringia ulvae and Pygospio elegans community complexes. The status of EU Protected Habitats and species in Ireland 2019 indicates that the overall status of the habitat is *"Inadequate and deteriorating*" with the change in trend, from improving to deteriorating, due to a genuine decline in the habitat since 2013. This was caused by pollution from agricultural, forestry and wastewater sources as well as impacts associated with marine aquaculture particularly the Pacific oyster (Magallana gigas). With exception to waste water sources none of those causes of deterioration are associated with the proposed project. In the case of the waste water generated from the proposed development it is proposed to discharge to the Sligo Town Sewer Tertiary Treatment (D0014-001) plant which is designed for a p.e. of 50,000 with the current loading in the order of p.e. 25,741 and consequently the potential waste water source of decline

in the habitat is completely negated.

A CEMP has been generated and accompanies the proposed project and is cognisant of the following guidance documents:

(1) Guidelines on protection of fisheries during Construction works in and adjacent to waters

(2) Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites

(3) CIRIA (Construction Industry Research and Information Association) Guidance Documents:

(i) Control of water pollution from construction sites (C532)

(ii) Control of water pollution from linear construction projects: Technical Guidance (C648)

(iii) Control of water pollution from linear construction projects: Site Guide (C649)

(iv) Environmental Good Practice on Site (C692)

(4) NRA Guidance Documents:

(5) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes

It details the location of the compound on the northern boundary of the development site which places it as far from the drain along the Southern boundary as possible while still within the development site boundary It also details the different elements / layout of the construction compound.

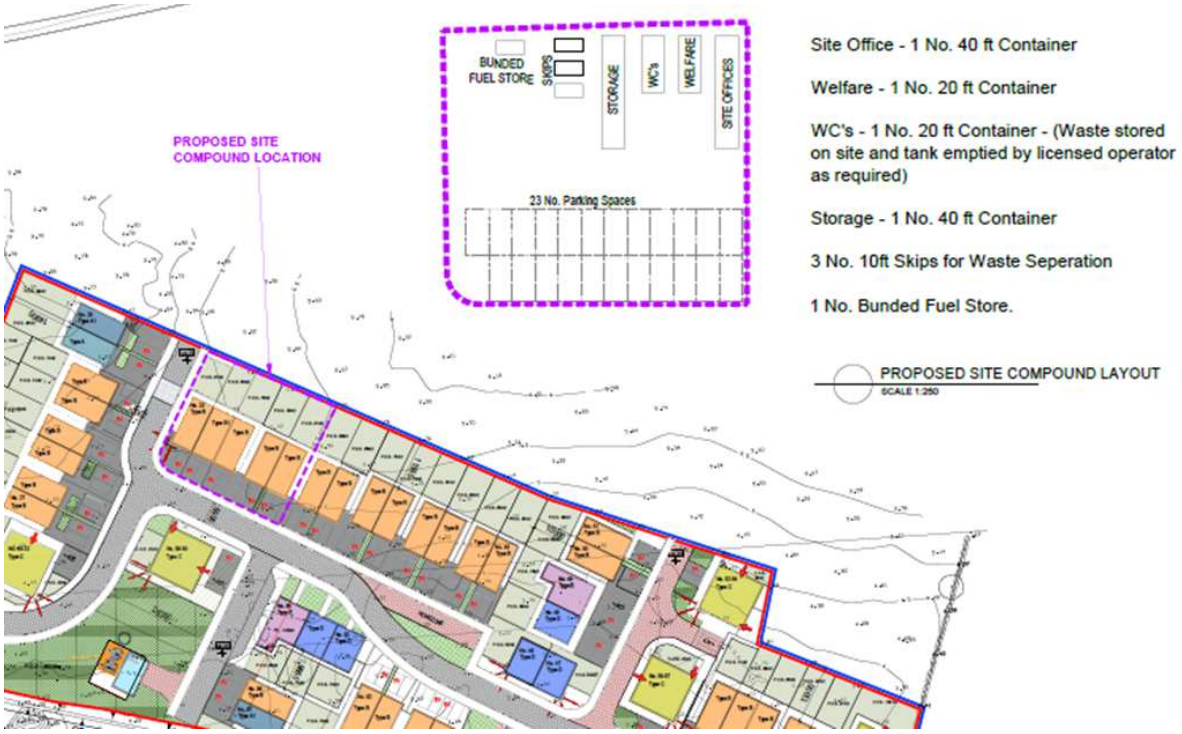


Figure 3.1 - Location and Layout of the Construction compound.

The CEMP also details the proposed mitigation measures which will be implemented to ensure no extraneous material directly or indirectly enters the drain and is subsequently indirectly discharged to the SAC / SPA. It effectively implements controls on dust, construction related materials, hydrocarbon

management (maintenance, refilling and spill protection), surface water protection from suspended solids (construction, landscaping, culverting and installation of the duck billed valve) which will ensure no degradation of the SAC / SPA habitats.

The following list of conservation objectives are from the NPWS Conservation Objectives for both the SAC and SPA.
(1) 1130 Estuaries: To maintain the favourable conservation condition of Estuaries in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC:
(2) 1140 Mudflats and sand flats not covered by seawater at low tide: To maintain the favourable conservation condition of Mudflats and sand flats not covered by seawater at low tide in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.
(3) 2110 Embryonic shifting dunes: To maintain the favourable conservation condition of Embryonic shifting dunes in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.
(4) 2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes): To restore the favourable conservation condition of Shifting dunes along the shoreline with Ammophila arenaria ('white dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.
(5) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes): To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.
(6) 7220 Petrifying springs with tufa formation (Cratoneurion): To maintain the favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.
(7) A999 Wetlands: To maintain the favourable conservation condition of wetland habitat in Cummeen Strand SPA as a resource for the regularly occurring migratory water birds that utilise it.

From this it can de determined that the proposed project will not contravene any of the conservation objectives for the SAC or SPA as none of the habitats listed in the conservation objectives or qualifying interest are present on or contiguous to the proposed development site.

Storm water form the completed development will only enter the drain via petrol interceptors / silt traps and an attenuation tank therefore there will be no impact on the water quality in the SAC or on the qualifying habitats.

No material will be deposited in or removed from either the SAC or SPA as a result of the proposed project nor will it require or result in any construction related activity entering or traversing the Natura sites. The construction phase of the project is subject to a CEMP that would ensure that there are no indirect impacts from that phase. Post construction there are no direct or indirect impacts to consider with respect to the conservation objectives. The proposed development will be confined directly to the target area and will result in an extremely localised impact with respect to qualifying Habitats. No impact on qualifying or non-qualifying habitats outside the immediate area of the development site, either during construction or subsequent habitation, is anticipated or expected.

3.9 POTENTIAL IMPACTS ON QUALIFYING AVIAN SPECIES OF THE NATURA SITE(S)

The proposed development will not impact directly on any qualifying Avian species for which the SPA / SAC was designated. All the avian species for which the SPA was designated are over wintering with no breeding on site. As the breeding grounds of these species are outside of the state then any increases or decreases in their populations would be subject to the conditions of those breeding grounds which is beyond the control of the Irish State however it is incumbent on the Irish State to preserve the overwinter habitats. An example of this is the Red Shank populations which are declining at both site level and national level which dictates that there are potential factors at a larger spatial scale that are impacting the trend such as potential impacts on the breeding grounds although climate change impacts cannot be ruled out. This is qualified by NPWS / IWeBS data which indicated that the other avian species numbers at this location are increasing in number. Cummeen Strand is of importance for the diversity of wintering waterfowl and is an integral part of the larger unit of Sligo Bay. The site has an internationally important population of *Branta bernicla hrota* and supports nationally important numbers of *Haematopus ostralegus* and *Tringa totanus*. Both *Pluvialis apricaria* and *Limosa lapponica* utilise the site though in relatively low numbers. The intertidal flats, which have well-developed macro-invertebrate communities and Zostera beds, provide good feeding grounds for the wintering birds. Birds roost on the salt marshes and upper shoreline though on high tides some may leave the site to roost elsewhere.

Special Conservation Interests	Family (group)	Winter distribution[A]	Trophic Guild[B]	Food/Prey Requirements[C]	Principal supporting habitat within site[D]	Ability to utilise other/alternative habitats[E]	Site Fidelity[F]
Light-bellied Brent Goose *Branta bernicla hrota*	Anatidae (geese)	Localised	1, 5	Highly specialised	Intertidal mud and sand flats	2	High
Oystercatcher *Haematopus ostralegus*	Haematopodidae (wading birds)	Intermediate	4	Narrower	Intertidal mud and sand flats	2	High
Redshank *Tringa totanus*	Scolopacidae (wading birds)	Intermediate	4	Wide	Intertidal mud and sand flats	2	Moderate

With exception to Red Shank the populations of both the Light Bellied Brent Goose and Oyster catcher are either stable or increasing at both site level and national level.

Special Conservation Interests	BoCCI Category[a]	Site Population Trend[b]	Site Conservation Condition	Current National Trend[c]	Current International Trend[d]
Light-bellied Brent Goose	Amber	+ 116	Favourable	+ 62.3	Increase
Oystercatcher	Amber	+ 17	Favourable	+ 14.5	Decline
Redshank	Red	- 31	Unfavourable	- 4.8	Stable/Increase

The proposed development site is located across the Second Sea Road in close proximity to the 625Ha OC 466 sub site. The light Bellied brent goose terrestrial foraging is not recorded at or in close proximity to the proposed development site and was concentrated in the sub sites OC 463 and OC 446. The existing botany of the site does not provide suitable foraging opportunities for the species. With respect to roosting they tend to utilise the outer section of the bay and are recorded in relatively significant numbers at OC 462, OC 463 and OC 482 with the greatest numbers recorded at OC 463.

The number of oyster catchers recorded in the SPA are such that it is considered to be of all Ireland importance. The species tends to forage on the intertidal flats with limited terrestrial foraging potentially for earth worms. Within the SPA the highest recorded intertidal foraging was recorded in OC445 and OC447. Intertidal roosting is significant between Cartron to Standalone point which is located 1.68Km to the north east across the bay, and another roost recorded 676M to the west with the peak numbers in OC445.

Red Shank numbers have been declining nationally which suggests that there may be issues outside of the state responsible for the decline. The largest intertidal roost of the species was recorded in OC485 between Cartron and Standalone point 1.68Km to the north east, other roosts were recorded at Rosses Point Harbour and along the training wall on the eastern boundary of the SPA indicating that the species is not overly concerned by anthropogenic activity adjacent to, but not within, the selected roosting areas. The species forage intertidally with the largest numbers recorded at low tide in OC466 and tend to concentrate on the inner muddier part of the subsite which have higher numbers of prey species.

NPWS has recorded intertidal aquaculture, horse riding and walking (including dogs) as being the disturbance activities that are significant to the species none of which are associated with the proposed project. Intertidal aquaculture has a high disturbance rating however this activity is not associated with the proposed project nor would the proposed project increase or exacerbate any of the recorded disturbance activities for the SPA.

The current land use of the development site lacks suitable habitat for the species and dictates that it is not used by any of these species for the reasons outlined below i.e. no ex situ use.

(i) The site was previously stripped with no natural habitat remaining.

(ii) The on site scrub provides cover for ambush predators including the now ubiquitous mink, which has been recorded as moving into urban areas, and foxes.

(iii) Traffic movement along the Second Sea Road.

(iv) Disturbance and predation by domesticated animals in particular felines and canines.

(v) Absence of suitable habitats for roosts (salt marsh, shore line, dunes, mud flats).

(vi) Semi urban setting of the proposed development site.

(vii) The impact of the wild mink population predating on ground nesting species.

(viii) The absence of a concerted sustained predator control program in the area.

(ix) Absence of prey species for foraging.

(x) No breeding at this location identified during the site inspections conducted to compile this report and the ecology report.

The impact of predators on ground roosting / nesting is regarded as a potential threat particularly in areas of where the suitable habitat is fragmented, or on islands that are subject to a high degree of grazing pressure and/or where cover is in short supply. For example, targeted predator control has been carried out in core Corncrake areas. The recent increases in Corncrake numbers in areas where predator control has taken place may be a reflection of this although it is difficult to identify the impact of predator control in isolation from other initiatives. NPWS have stated that such predator control programs in Corncrake areas are also likely to have been of benefit to other species of conservation concern.

The following Conservation Objectives have been listed for the Cummeen Strand SPA,

(1) A046 Brent Goose Branta bernicla hrota: To maintain the favourable conservation condition of Light-bellied Brent Goose in Cummeen Strand SPA

(2) A130 Oystercatcher Haematopus ostralegus: To maintain the favourable conservation condition of Oystercatcher in Cummeen Strand SPA

(3) A162 Redshank Tringa tetanus: To maintain the favourable conservation condition of Redshank in Cummeen Strand SPA

Based on the ecological requirements of all three species, the location of foraging areas and roosts it is unlikely that post construction the proposed development would have a negative impact on them.

As the SPA avian species are overwintering timing of the heavier elements of construction should be considered to ensure disturbance from such an activity is mitigated. The landscaping and street lighting elements of the project were also considered with the attached light report indicating that the impact of the new street lighting would be <1lux at the training wall (see map over leaf).

3.10 POTENTIAL IMPACTS ON QUALIFYING MAMMALIAN SPECIES OF THE NATURA SITE(S)

The following Conservation Objectives have been listed for the Cummeen Strand SAC,

(1) 1365 To maintain the favourable conservation condition of Harbour Seal Phoca vitulina in the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.

There is no suitable on site habitat for the species and it is not recorded in close proximity to the development site with the closest recording 4.5Km away. Any factors which affect water quality could indirectly impact the species however there are no proposed discharges form the development site that will negatively impact water quality post construction as it is proposed to connect to the Sligo Town WWTP which has excess capacity to cater for the development along with adequate storage capacity. Surface water from the site will pass through a petrol interceptor and be attenuated prior to discharge. This will in turn remove any potential pollutants and also control the flow of water to prevent a surface water surge during heavy rainfall. During construction the development will be subject to a CEMP that will be agreed with Sligo County Council. The CEMP will ensure that surface water quality will not be negatively impacted with strict controls on hydrocarbon management and protection of freshwater systems from suspended solids and cementitious material for example. The proposed development will not negatively impact on the conservation objectives for the Natura sites with respect to mammalian species.

3.11 POTENTIAL IMPACTS ON OTHER QUALIFYING SPECIES OF THE NATURA SITE(S)

The following Conservation Objectives have been listed for the Cummeen Strand SAC.

(1) 1014 To maintain the favourable conservation condition of Narrow-mouthed Whorl Snail in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.

(2) 1095 To restore the favourable conservation condition of Sea Lamprey Petromyzon marinus in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.

(3) 1099 To maintain the favourable conservation condition of River Lamprey Lampetra fluviatilis in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.

These species are either aquatic or have specific habitat requirements. There is no suitable habitat on the proposed development site for the Narrow Mouthed Whorl Snail as grazing is critical for the maintenance of the habitat of the species, especially on the extensive sand dune populations. The habitats are easily modified by inappropriate grazing, changes in stocking type and the impact of wild herbivores, especially rabbits. Sand dune systems have been impacted by leisure activities – caravan sites and golf courses, mainly – and expansion of these activities has exerted significant pressure on the species however none of these are associated with the proposed project. The entire site has been completely stripped since 2000 which is evident from the aerial photographs and it appears that the site was GA1 habitat prior to that consequently no natural habitat for the species was present and is unlikely to ever have been present at this location.

There is a proposal to install a duck billed valve on the drain along the south of the development site and culvert a section of it. This is not a natural lotic feature and does not appear on any of the historic maps. Its clean straight steep sided morphology supports this and was most likely excavated to drain a low lying area to the East. The contributing catchment is very small and it will dry out during extended dry weather period which dictates that neither the Sea nor River lamprey would utlilise it and consequently the duck billed valve is not a barrier to migration and will only activate during AEP's of 1% or above.

The only factors associated with the proposed project that would negatively impact on the Lamprey would be those concerning water quality, marine and fresh water. There are no proposed discharges form the development site that will negatively impact water quality post construction as it is proposed to connect to the Sligo Town WWTP which has excess capacity to cater for the development. During construction the development will be subject to a CEMP that must be agreed with Sligo County Council. The CEMP will ensure that surface water quality will not be negatively impacted during construction with strict controls on hydrocarbon management and protection of freshwater systems from suspended solids and cementitious material for example. Such precautionary measures would negate any potential indirect impacts on the identified surface water features. The NPWS publications on the "Survey of Juvenile Lamprey Populations", " An outline of the biology, distribution and conservation of Lampreys in Ireland" and "Ireland Red List No.5 Amphibian, Reptile and Freshwater Fish" all identify the threats to the populations of such species as being water pollution, dredging and weirs which may impeded up river penetration of those species, none of which are associated with the proposed development.

The potential causes for the reduction of water quality during construction are increases in suspended solids, contamination with hydrocarbons, contamination with cementatious material and contamination with synthetic compounds (paints, water proofers, mortar mix etc.) which would all be negated by the implementation of the CEMP.

The proposed project would not contravene the conservation objectives for the species listed in the features of interest as it can be projected that there would be no impact on surface water quality.

3.12 POTENTIAL IMPACTS ON QUALIFYING BOTANICAL SPECIES OF THE NATURA SITE(S)

There will be no impact on any qualifying, or listed, species of plant. No qualifying botanical species were observed during the ecological survey which would be expected given the current and historical site use and absence of suitable habitats for them. Neither the construction stage (construction aggregate importation) nor the landscape plan should introduce any invasive species which will require mitigation to ensure.

3.13 OTHER FACTORS THAT MAY IMPACT ON THE NATURA SITE (S)

Noise, vibration, air quality and light will not impact on the SPA/ SAC habitat or annexed species, outside of the development site area, either during construction or subsequent use either directly or indirectly.

There are no climatic considerations associated with the development.

Fugitive dust generated predominantly during the construction of the proposed development could be described as inert and harmless in the chemical context and would not contain any of the harmful compounds as described and listed in Atmospheric Emissions by T.A. Luft, (1986), section 2.3. The main concerns with respect to dust are generally experienced within 100m of a significant dust source and it can be inferred that there will be no negative impact on the Natura site as the proposed project is not considered a significant dust source (during construction or subsequent habitation) and the 350mg/M2/Day (Bergerhoff) limit will not be approached. The proposed project is not a noted source of fugitive dust which tends to be the reserve of certain industries and in particular the extractive industry. The wind direction data dictates that any potential wind borne fugitive dust from the construction phase would be inland and away from the Natura sites.

The noise source is external in nature and its dimensions are small compared to the location, in respect to the designated sites, then as the sound energy is radiating it will spread over an area that is proportional to the square of the distance. As this is an inverse square law then the sound level will decline by 6dB for each doubling of distance and will not have

a deleterious effect on the Natura site with subsequent habitation. During construction there is potential for disturbance of the SPA avian species which are overwintering only with no breeding. Timing of the main elements of the proposed project would ensure that those species would not be disturbed during construction. Typical values in the vicinity of the development post construction would be in the order of 55 - 75 dBLaeq with RTN from the Second Sea Road remaining the dominant noise source. Post construction the proposed development would be absorbed into the background with no detectable increase in noise within the Natura sites boundaries.

Interference with Natura site outside of the proposed development site boundary due to vibration would not occur given its location, nature and scale for example ppv of a hydraulic roller at 25M is only 1.5mms with a

truck on rough surfaces only produce a ppv of <2mm/s at 20M with potential vibration undetectable in the SAC / SPA. The activities which generate the significant vibration are rock breaking, blasting and pile driving none of which are associated with the proposed project. Air over pressure is not a consideration given the nature of the proposed project.

There will be no compaction of the Natura area during construction as there will be no entry into them.

Traffic, air quality or climatic factors with Habitation / use will not significantly impact on the Natura sites given its scale and location. The timing of the main elements of construction and the street lighting type / location would mitigate any potential light impacts. The SPA species have been recorded along training walls and appear not to be overly concerned with anthropogenic activity however there shall be no direct lighting of the strand / bay area i.e the lux levels at the boundary of the SAC / SPA will be increased but still remain <1. Although it is possible to apply a plume dispersion model to calculate the impact of the development on air quality, a stochastic approach has being adopted in that the nature of the development when considered in the context of its location and scale and given the wind rose (see map 2a) then the dilution effect would be such that the limit values for SO2 (20µg/M3 protection of vegetation) and NO + NO2 (30 µg/M3 protection of ecosystems) would not be approached either by the construction or use of the proposed development, when considered in isolation or in conjunction with other existing or proposed developments. Compaction is limited directly to the area of the proposed development. The development will not have a negative impact on water resources either qualitatively or quantitatively as there are no direct discharge to ground water or abstraction from it.

No negative changes to surface water quality (microbiologically, chemically, physically or quantitatively) are anticipated given that there are no direct discharges to or abstraction from surface water with the proposed development to connect to appropriate petrol interceptors and attenuation.

3.14 LIKELY CHANGES

Describe any likely changes to the Natura Sites for further consideration arising as a result of:

(i) Reduction in habitat area:

(ii) Disturbance to key species:

(iii) Habitat or species density:

(iv) Changes in key indicators of conservation value (water quality etc)

(v) Climate change

Potential Impact	Direct Impact	Indirect / Secondary Impact
Loss of habitat / land	Proposed project is not located within the boundary of a Natura site – no net loss of qualifying interest habitat associated with the development.	Project not located within boundary of Natura site with no qualify interest habitats adjacent to or contiguous to the development site.

Habitat fragmentation	No fragmentation of the SAC or SPA habitat with periphery of the Natura sites located on the opposite side of the Second Sea Road	No indirect impact i.e. no qualifying interest habitats on or adjacent to the proposed development site boundary. No undesignated qualifying interest habitat to the north, south or east of the development site boundary.
Disturbance	A by product of modern energy efficient lighting systems is that it reduces light leakage which is an unintended consequence of a drive for energy efficiency. Only LED luminaries are proposed which will give a sharp cut-off, lower intensity, good colour rendition and dimming capability. The standard use of accessories such as baffles, hoods or louvers naturally reduce light spill and direct it only to where it is needed. Lights to use warm white spectrum (normally <2700Kelvin) which is 1200Kelvin in this instance and is well below the desired level and will reduce the blue light component. Only luminaries with an upward light ratio of 0% will be used which is now standard practice. Only downward facing luminaries will be used which is now standard practice. Modern LED systems remove the upward component, give sharp cut off lines and reduce light leakage significantly, typically lux levels reduce to <5 at a distance of 10M with such LED systems and the lighting report indicates that the levels at the training wall will be <1 lux. Timing of the main elements of the project will negate potential impacts on avian species from construction. Other species listed in the Natura Form will not be impacted as none were present on the site nor would they use it in an ex situ manner with none recorded within 4Km of the development boundary as they are confined to the estuaries, Mudflats and sand flats not covered by seawater at low tide or are aquatic. No	No indirect impacts as the project will be undetectable within the boundary of the natura sites post construction and will be absorbed into the back ground. The lux level at the training wall will be <1. Noise levels will be absorbed into the back ground and continue to be dominated by RTN from the Second Sea Road. Vibration post construction is not a consideration. Air over pressure is not a factor.

	undesignated annexed or qualifying interest habitats or species on or in close proximity to the development site.	
Impacts on migration	None – Qualifying interest species predominantly aquatic or confined to the therefore no impact on the migration of any aquatic species as no streams, drains or watercourses present on, or contiguous to, the development site with no in stream or along stream works required or proposed. Other species listed in the Natura Form will not be impacted as none were present on the site nor would they use it in an ex situ manner as they are confined to the estuaries, mudflats and sand flats not covered by seawater at low tide, are aquatic or have very specific habitat requirements.	None
Impact on qualifying interest species	No impact on the qualifying interest species and no loss of habitat for those species with no ex situ use of the site by them. Mitigation measures will ensure no deterioration in water quality. Project will connect to the Sligo Town Sewer. Storm water will discharge to petrol interceptors / silt traps prior to discharge to an attenuation tank and ultimately the drain. The other species listed in the Natura Form were not detected on the development site nor would they be anticipated to be present. The development site is not used in an ex situ fashion by any of the species considered as there is absence of suitable habitat. The drain along the Southern boundary is not a natural feature and prone to drying out during extended dry weather periods..	No indirect impact as no impact on surface water quality during construction (mitigation measures) or with subsequent use. No undesignated qualifying interest habitat present on or contiguous to the development site. Development site is not use by any of the QI species in an ex situ manner.
Reduction in annexed / qualifying interest species density	No reduction in qualifying interest species or species considered feature of interest for the SAC as there is no land take from the SAC with no impact on surface water quality and no undesignated habitat present on the development	None

	site or the North, South or East.	
Water quality (surface or ground water)	No direct discharge to surface water associated with the proposed project either during construction (CEMP) or with subsequent use and will not impact on ground water or surface water quality.	The only discharge to consider is storm water which will not indirectly impact on the water quality with the storm water from surround areas being maintained via existing routes and the southern drain.
Water resource	None – no abstraction or discharges from or to surface water associated with the project	None
Light	Construction lighting will only be used during winter months from November to March from 4.30pm to 6pm and it will not extend beyond the boundary of the site as it will be localised to the work zone. The introduction of the street lighting is not deemed significant as there will be no increase in lux level within the boundary of the SAC / SPA due to the separation distance and the intervening land use which includes the existing Second Sea Road and with the predicted light levels at the training wall <1lux. The qualifying interest species are confined to the estuaries, mudflats and sand flats not covered by seawater at low tide or are aquatic section. Other factors on which this determination can be qualified are a by product of modern energy efficient lighting systems reduce light leakage which is an unintended consequence of a drive for energy efficiency. Only LED luminaries are proposed which will give a sharp cut-off, lower intensity, good colour rendition and dimming capability. The standard use of accessories such as baffles, hoods or louvers naturally reduce light spill and direct it only to where it is needed. Lights to use warm white spectrum (normally <2700Kelvin) which is 1200Kelvin in this instance and is well below the desired level and will reduce	None

	the blue light component. Only luminaries with an upward light ratio of 0% will be used which is now standard practice. Only downward facing luminaries will be used which is now standard practice. The area that it is proposed to light is the new footpath on the south and western side of the Second Sea Road.	
Noise	Road Traffic Noise (RTN) from the adjacent Second Sea Road and housing estates will dominate the area both during construction and with subsequent use. Timing of the project will ensure that the SPA avian species will not be impacted	None the project will be assimilated into the back ground post construction and will be dominated by the RTN from the Second Road.
Vibration	Vibration during construction would not be detectable within the SAC / SPA boundary for example the ppv of a hydraulic roller at 25M is only 1.5mms which truck on rough surfaces only produce a ppv of <2mm/s at 20M and consequently would be undetectable in the Natura site. Air over pressure is not a consideration.	No indirect impacts from vibration of the Natura site. The project is not a noted source of ppv either during construction or with subsequent use.
Compaction	No compaction within the boundary of the SPA or SAC as no activity within them	No compaction of habitats adjacent to the natura site boundary
Traffic	No significant impacts as no increase in traffic movements post construction as located adjacent to the existing housing estates and Second Sea Road. Timing of the proposed project will ensure that there is no impact from construction traffic or the movement of heavy plant.	None predicted – post construction project will be absorbed into the back ground
Synergistic effects	Mitigation measures (CEMP) during construction will negate the potential significant impacts.	None post completion

Introduction of extraneous material to the aquatic environment	None – no discharges associated with the proposed project. CEMP will ensure no construction related material will egress the development site.	None
Construction	The project will be assimilated into the back ground during the lighter elements of construction while timing during the heavier elements will ensure that there are no impacts on the QI species. Surface water quality will not be impacted within the natura site due to the mitigation measures in the CEMP. The project has no lighting requirements during construction. Noise and vibration will be absorbed into the back ground and will continue to be dominated by the RTN from the adjacent Sea Road and housing estates. Any increases in traffic on the Sea Road will be undetectable within the SAC boundary as the project lacks the scale, durations and magnitude to result in significant increases in traffic volumes.	None
Subsequent Use	None – light and noise absorbed into the background with no increases inside the boundary of the Natura site.	None
Air quality	None – no discharges to air associated with the project either during construction or with subsequent use – fugitive dust is not a factor.	None
Climatic	None	None

3.15 LIKELY IMPACTS ON THE NATURA 2000 SITES AS A WHOLE

Describe any likely impacts on the Natura 2000 sites as a whole in terms of:

(i) Interference with the Key relationships that define the structure of the site.

(ii) Interference with key relationships that define the function of the site.

It is established that there are no QI habitats on the proposed development site. There are no habitats on or contiguous to the development site which would be used by any of the Natura sites QI species for foraging, breeding, roosting or in a migratory / transitory manner. The drain on the southern section is not used by either the river or sea lamprey due to its lack of connectivity to suitable lotic systems and tendency to dry out. The proposed project will not alter interfere or impact on the key relationships that define the structure of the Natura sites with no land take from either of them and no material to be deposited in or removed from them associated with the project. Provided that surface water quality is not impacted there will be no significant impacts on the key relationships that define the function of the natura sites i.e. no impact on potential prey species. The CEMP and the connection to the Sligo Town sewer dictate that there will be no impact from foul water with subsequent use / habitation. The only potential NPWS identified threat or pressure relevant to the proposed project is urbanisation. However, it has been established that this impact is localised with no synergistic impacts e.g. the new street lighting will not increase illumination within the boundary of the SAC or SPA, noise will be absorbed into the background on completion with timing use during the heavier elements of construction to negate any potential disturbance to the SPA avian species. None of the other NPWS identified threats and pressures are associated with the proposed project with those threats and pressures associated with activities inside the Natura sites. The QI habitats that the Natura sites were designated for are not found on the proposed development site with no potential for the development site to revert to a qualifying interest habitat type. There is no interdependence between the proposed development site and the QI species.

3.16 CONSIDERATION OF SIGNIFICANCE

In terms of significance, the NPWS Guidance (2010 Rev) uses an EC definition as follows:.." *any element of a plan or project that has the potential to affect the conservation objectives of a Natura 2000 site, including its structure and function, should be considered significant (EC, 2006)"*. Other guidance documents also discuss significance criteria, some in more detail than others.

In general, significance indicators might include but are not limited too:

- Impact on Annex I habitat (including loss or reduction in size - percentage relative to the overall area of the habitat in the Natura site; impairment of function);
- Fragmentation of habitat or population (depending upon the duration or permanence);
- Disturbance (noise, light etc. - distance, duration);
- Effect on species populations (direct or indirect damage to size, breeding patterns etc);
- Changes in water quality.

In the context of the Habitats Directive significant effects may be described as follows: *"...Within the Habitats Regulations, significance is quite different It is used as a coarse filter and the test is a question over the possibility that there will be a significant effect on a key receptor that determines the conservation status of a European site. Thus, determining whether there will be a likely significant effect' does not imply that there will be such an effect or even that such an effect is more likely than not; it simply flags the need to test the issues and then make a judgement of the pathways and mechanisms imposed by a project on the designated wildlife interest. This test best equates to the screening and scoping opinions sought for an EIA but is confined to the*

Natura 2000 and Ramsar interest rather than wider environmental or nature conservation issues"(Morris (2008)).

In order to assess the likely impacts and ascertain whether a significant impact on the integrity of the Natura site(s) is likely to occur as a result of the proposed development, should the appropriate assessment process deemed to be required, it is necessary to consider what constitutes the integrity of a Site as referred to in Article 6(3). The document Managing Natura 2000 Site, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000) gives clear guidance in this regard and states: *"The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives".*

Integrity has been debated and defined in various ways in guidance documentation and literature. For example, Treweek (1999) discusses biological integrity and ecosystem health and refers to three generally accepted criteria: systematic indicators of ecosystem functional and structural integrity; ecological sustainability or resilience (relating to the ability of a system to withstand "natural" or anthropogenic stresses); and absence of detectable symptoms of ecosystem disease or stress. A similar, but less academic, approach is adopted by the various guidance documents with a number of definitions proposed. The essence of the concept of ecological integrity is distilled in the following definition from Planning Policy Statement 9 (UK Department of Environment, 1994 - now superseded by PP9, 2005): *"coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified".*

European Court of Justice 7th November 2018; Case C 461/17; Holohan & Others v. An Bord Pleanála - all the habitats and species for which the Natura 2000 site is protected must be catalogued; an Appropriate Assessment must identify and examine the implications of the proposed project for species present on the Natura 2000 site, including species for which the site has been listed and those for which it has not, provided those implications are liable to affect the conservation objectives of the site; an Appropriate Assessment must identify and examine the implications of the proposed project for species and habitats outside the boundaries of the Natura 2000 site, provided those implications are liable to affect the conservation objectives of the site.

Consequently, all proposed projects must be specifically assessed in terms of its potential impacts on the conservation objectives both within the boundary of the natura site and outside the boundary of the Natura site if there is potential that any of the habitats or species are dependant on those habitats and species outside of the boundary of the Natura site.

3.17 OTHER PLANS OR PROJECTS ON WHICH THE PROPOSED DEVELOPMENT MAY IMPACT.

The following section examines a number of plans, targets, objectives, directives and international agreements considered.

The National River Basins Management plans were created in response to the water frame work directive must also be considered. Under the management plan it is proposed to increase (or maintain) surface water and ground water

quality to 'Good Status'. To ensure this objective is achieved then no plan or project is permitted that would contravene this. The 2018 – 2021 River Basin Management plans catchment assessments are not yet available and are currently being completed by the Environmental Protection Agency's Catchment Science and Management Unit. On April 17th 2018 the Government published the River Basin Management Plan for Ireland 2018-2021. The Plan sets out the actions that Ireland will undertake to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2027, which is an extension to the original time frames which were prescribed under the 1st cycle WFD targets and objectives

EU Biodiversity Strategy for 2030

The European Commission has adopted the new EU Biodiversity Strategy for 2030 and an associated Action Plan sets a comprehensive, ambitious, long-term plan for protecting nature and reversing the degradation of ecosystems. It aims to put Europe's biodiversity on a path to recovery by 2030 with benefits for people, the climate and the planet. It aims to build our societies' resilience to future threats such as climate change impacts, forest fires, food insecurity or disease outbreaks, including by protecting wildlife and fighting illegal wildlife trade. A core part of the European Green Deal, the Biodiversity Strategy will also support a green recovery following the COVID-19 pandemic.

Establishing a larger EU-wide network of protected areas on land and at sea

The EU will enlarge existing Natura 2000 areas, with strict protection for areas of very high biodiversity and climate value.

Launching an EU nature restoration plan

Through concrete commitments and actions, the EU aims to restore degraded ecosystems by 2030 and manage them sustainably, addressing the key drivers of biodiversity loss. As part of this plan, the Commission will propose binding nature restoration targets by the end of 2021 however this is now extended to 2022.

Introducing measures to tackle the global biodiversity challenge

These measures will demonstrate that the EU is ready to lead by example to address the global biodiversity crisis. In particular, working towards the successful adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity. The EU Biodiversity Strategy for 2030 sets out a truly ambitious and far-reaching program of measures to halt and reverse biodiversity loss in the EU and across the globe. The challenge ahead is daunting and our ambition high, but it is actually not a matter of choice: halting biodiversity loss is a necessity for a stable future on this planet, and a socioeconomic imperative to deliver the European Green Deal.

Convention on Biological Diversity, key international instrument for sustainable development

The Convention on Biological Diversity (CBD) is the international legal instrument for *"the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources"* that has been ratified by 196 nations. Its overall objective is to encourage actions, which will lead to a sustainable future.

The conservation of biodiversity is a common concern of humankind. The Convention on Biological Diversity covers

biodiversity at all levels: ecosystems, species and genetic resources. It also covers biotechnology, including through the Cartagena Protocol on Biosafety. In fact, it covers all possible domains that are directly or indirectly related to biodiversity and its role in development, ranging from science, politics and education to agriculture, business, culture and much more. The CBD's governing body is the Conference of the Parties (COP). This ultimate authority of all governments (or Parties) that have ratified the treaty meets every two years to review progress, set priorities and commit to work plans.

The Secretariat of the Convention on Biological Diversity (SCBD) is based in Montreal, Canada. Its main function is to assist governments in the implementation of the CBD and its programmes of work, to organize meetings, draft documents, and coordinate with other international organizations and collect and spread information.

Sligo County Council County Development Plan 2017 – 2023 and 2023 - 2029

EU Multi Species Action Plan 2018 – 2024

Directives, Measures & Plans

Directive - Birds Directive
Directive - Habitats Directive
Directive - Drinking Waters Directive
Directive - Major Accidents and Emergencies Directive
Directive - Environmental Impact Assessment Directive
Directive - Sewage Sludge Directive
Directive - Urban Waste Water Treatment Directive
Directive - Plant Protection Products Directive
Directive - Nitrates Directive
Directive - Integrated Pollution Prevention Control Directive
Other Stipulated Measure - Cost recovery for water use
Other Stipulated Measure - Promotion of efficient and sustainable water use
Other Stipulated Measure - Protection of drinking water sources
Other Stipulated Measure - Control of abstraction and impoundment
Other Stipulated Measure - Control of point source discharges
Other Stipulated Measure - Control of diffuse source discharges
Other Stipulated Measure - Authorisation of discharges to groundwaters
Other Stipulated Measure - Control of priority substances
Other Stipulated Measure - Controls on physical modifications to surface waters
Other Stipulated Measure - Controls on other activities impacting on water status
Other Stipulated Measure - Prevention or reduction of the impact of accidental pollution incidents
On-site waste water treatment systems
Freshwater Pearl Mussel sub-basin plan
Shellfish Pollution Reduction Plan
NRBMP / WFD
Status of Protected Habitats and Species in Ireland (NPWS 2019)

It is also essential that the NIS is congnisant of relevant legal rulings which are included in Appendix XXX

The proposed project will not impact on any of the above as there is no land take from a natura site. Any expansion of those natura sites would not result in the development site being designated as there are is no undesignated qualifying habitats present. The proposed project can be attributed a neutral impact on the implementation of the mitigation measures in this report, CEMP and mitigation measures in the bat survey. None of the QI specie use the site in an exsitu manner with no habitats or species present on which those species depend (no interdependence).

3.18 COMBINATION EFFECTS

The potential cumulative impacts on the SPA / SAC from the proposed development in combination with the impacts from other significant projects are assessed in this section. As indicated in the previous sections potential impacts on the SAC / SPA from the proposed development are confined to indirect impacts. It is not anticipated that the proposed development will impact on water quality when the mitigation measures, which are based on the precautionary principle, are implemented including the measures as detailed in the CEMP. The Local Authority, NWFB and NPWS all collaborate to ensure water quality is not adversely affected thereby maintaining the ecosystems and habitats essential for the annexed species.

There is no potential for a cumulative negative impact on the SPA / SAC given that water quality will not be negatively impacted and there will be no uncontrolled discharges to either surface water or ground water during construction or subsequent habitation. In addition to the mitigation measures in this report and the bat survey a CEMP has also been generated for the construction phase of the development and will be agreed with Sligo County Council prior to commencement. The CEMP would cater for all potential impacts during the construction phase to ensure a neutral impact and will adhere to the fisheries board document *"Guidelines on Protection of Fisheries during Construction Works"*. There is no land take from a Natura site and no material would be deposited in or removed from one as a consequence of the development. The proposed development would not require any construction related activities to enter or traverse the SAC/SPA areas. No undesignated annexed habitats are present on the site and none of the species listed in the features of interest for the SPA / SAC were detected with no ex-situ use of the site by them.

The semi urban nature of the proposed development site dictates that there have been a series of planning applications in the general area (e.g. 19/483) with the most recent developments subject to assessment under article 6 of the habitats directive. Although mitigation measures were recommended for the construction phase of those developments, they were attributed neutral impacts once the mitigation measures were implemented with no post construction mitigation measures required as no negative impacts were anticipated. The neutral impact assessment of those projects dictates that when they are considered in conjunction with the proposed project, then a neural post construction impact can be assigned to the proposed with mitigation measures to be implemented during the construction phase ensuring that there are no cumulative impacts from it.

Qualifying species and habitat are not directly impacted by the proposed development with only indirect impacts to consider. All the potential indirect impacts can be mitigated during construction and subsequent habitation / use. The impact on water quality is considered to be neutral with the potential impact on annexed habitats and species also considered neutral.

The proposed project will not increase or exacerbate the NPWS identified pressures or threats to the Natura sites therefore no cumulative impacts are possible.

3.19 MITIGATION MEASURES

The Construction phase of the project shall be subject to a CEMP which will be agreed with Sligo County Council prior to commencement of the development and shall cater for all potential environmental considerations.
The mitigation measures in the Bat survey shall be implemented in full.

The mitigation measures listed here can be considered standard as no project specific mitigation measures are required due to the nature of the proposed project.

(1) The heavier elements of the project shall not occur during the overwintering period of the SPA avian species namely site clearance, importation of large quantities of aggregates, road construction and excavation for and installation of foundations.
(2) The CEMP shall be cognisant of the Inland Fisheries `` Guidelines on protection of fisheries during Construction works in and adjacent to waters" and "Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites" with the recommendations in those documents implemented.
(3) A silt fence shall be installed along the drain to the South
(4) No material may be removed from or deposited in the adjacent Natura site as a result of the project which shall be confined specifically to the planning / development site area.
(5) No construction related activity shall enter or traverse the SAC / SPA foreshore area.
(6) No maintenance of heavy plant shall occur on site with all preventative maintenance carried out prior to entry to the site.
(7) Storm water from paved areas shall only egress the site via suitably sized petrol interceptors.
(8) Batch concrete trucks are prohibited from the washing out of the drum on site although this is now industry standard it shall be enforce by the PSCS.
(9) Aggregates to be used in construction (sands, gravels, crushed stone) shall not be stored within 5M of any watercourse, drain or stream.
(10) A water tight container must be provided on site to accept empty packaging from cement, lime, bonding, grout and skim.
(11) A separate water tight container shall be provided to accept empty containers that would have contained liquids involved in construction such as mortar mix, paints, thinners, wood preservatives, paints, water proofers, bonding, varnish, (please note this list is not exhaustive).

(12) Excavated material shall not be stockpiled on site but should landscaped and reseeded as soon as practically possible. Where it is to be stockpiled it shall be mechanically sealed and covered if required.
(13) All chemicals such as water proofers, thinners, wood preservatives , mortar mix etc shall be retained in a specific bunded area or storage unit with aliquots removed as necessary.
(14) All empty packaging shall be stored in appropriate containers for disposal as required.
(15) Where OFCH is utilised the tank shall be bunded to 110% of the volume of the tank and roofed. . There shall be no outlet at the base of the bund. Alternatively double skinned tanks may be used.
(16) The quarry used for the supply of aggregates shall be free from invasive species in particular the Japanese Knotweed.
(17) There shall be no tree, scrub or hedgerow removal during the nesting season.
(18) The clean aggregated for the internal road construction shall be imported and spread in a phased manner following directly behind the excavation for the internal access road in order to protect the exposed subsoil from erosion.
(19) The street lighting used post completion shall be LED only as it gives a sharp cut off and reduces light leakage as indicated in the lighting report.
(20) Consideration shall be given to the proposed landscaping of the green area on the north western end of the site to screen the area from the Cummeen bay / strand area.
(21) None of the botanical species as listed in appendix F shall be used for the purposes of landscaping.

3.20 AGENCIES CONSULTED

A previous application was lodged on the proposed development site to which NPWS and the Local Authority have made comment. Given that the new proposed development is at the same location and of the same nature but reduced in scale then it can be assumed that the comments are still valid.

3.21 RESPONSE TO CONSULTATION

NPWS indicated that the Second Sea Road should be set back and a salt marsh created. This is neither practicable nor feasible as no salt marsh has ever existed at this location with the existing road and training wall appearing on the historic 1837 – 1842 maps. The creation of a salt marsh requires very specific conditions which could not be replicated at this location due to tidal movements along with the impacts of sea level rise. In addition realigning the coast to cater for it would alter the hydrogeological conditions may introduce new erosion patterns to other parts opf the SAC / SPA which would have a deleterious effect on the Natura site. However the comment does indicate that NPWS does not consider that such large scale infrastructural works would have a significant impact on the Natura sites therefore it can be deduced that a smaller project at a greater distance from the Natura sites would not have an impact on it.

The other comments were with respect to the format of the original report. Both the High Court and an Bord Pleanala have previously ratified that format with positive outcomes.

It was suggested in the NPWS comments that there are several formats and examples available on line and suggested that such a format from the internet be applied. An examination of the reports on line indicates that

there is no set format available with the structure and content of all 50 reports reviewed vastly different. This confirms the NPWS own statement in the guidance document *"Appropriate Assessment of plans and projects in Ireland, Guidance for planning authorities"* states that *"There are no prescribed methods for undertaking appropriate assessment, or form or content for reporting".*

The information required in an NIS is based on the number of Natura sites to be considered and the complexity of the proposed project which is independent of the document size.

Notwithstanding all of the above the format has been altered to accommodate both NPWS and the Local Authority comments.

4.0 CONCULSION

4.1 IMPACTS ON CONSERVATION OBJECTIVE

Conservation Objectives for : Cummeen Strand SPA 004035		
Qualifying Interest:	**Targets:**	**Impact on Conservation objective**
A046 Brent Goose Branta *bernicla hrota*	To maintain the favourable conservation condition of Light-bellied Brent Goose in Cummeen Strand SPA No significant decrease in the range, timing and intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	No impact on the species which is overwintering only with no breeding in the SPA / SAC. No exsitu use of the proposed development by it for foraging or roosting. Species not recorded within 1Km. No use of the surrounding lands by the species. No impact on water quality therefore no impact on prey species. Project lacks the scale and magnitude to impact on migration. Lighting will not impact on it as the lux level at the training wall will be <1 lux. Timing of the project will ensure no disturbance during the overwinter period. The disturbance activities that the NPWS have identified will not be increased or exacerbated by the proposed project.
A130 Oystercatcher *Haematopus ostralegus*	To maintain the favourable conservation condition of Oystercatcher in Cummeen Strand SPA No significant decrease in the range, timing and intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	No impact on the species which is overwintering only with no breeding in the SPA / SAC. No exsitu use of the proposed development by it for foraging or roosting. No use of the surrounding lands (north, south or east) by the species. No impact on water quality therefore no impact on prey species. Project lacks the scale and magnitude to impact on migration. Lighting will not impact on it as the lux level at the training wall will be <1 lux. Timing of the project will ensure no disturbance during the overwinter period. The disturbance activities that the NPWS have identified will not be increased or exacerbated by the proposed project.

A162 Redshank *Tringa totanus*	To maintain the favourable conservation condition of Redshank in Cummeen Strand SPA No significant decrease in the range, timing and intensity of use of areas by redshank, other than that occurring from natural patterns of variation	No impact on the species which is overwintering only with no breeding in the SPA / SAC. No ex situ use of the proposed development by it for foraging or roosting. No use of the surrounding lands (North, South or East) by the species. No impact on water quality therefore no impact on prey species. Project lacks the scale and magnitude to impact on migration. Lighting will not impact on it as the lux level at the training wall will be <1 lux. Timing of the project will ensure no disturbance during the overwinter period. The disturbance activities that the NPWS have identified will not be increased or exacerbated by the proposed project.
A999 Wetlands	To maintain the favourable conservation condition of wetland habitat in Cummeen Strand SPA as a resource for the regularly occurring migratory waterbirds that utilise it. The permanent area occupied by the wetland habitat should be stable and not significantly less than 1732 hectares, other than that occurring from natural patterns of variation	No land take. No undesignated wetlands on the site. No wetlands contiguous to the site.

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 00627		
Qualifying Interest	**Targets**	**Impact on Conservation objective**
1130 Estuaries	To maintain the favourable conservation condition of Estuaries in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Mitigation measures ensure that there is no deterioration of the estuary with no discharges to any surface water feature and the CEPM and mitigation measures ensuring that there is no deterioration in water quality during construction. There is no land take from it nor will any material be removed from, or deposited in it. The proposed project does not require any activity to be under taken inside the boundary of the Natura site nor will any construction related activities require any plant to enter or traverse it. No extraneous material will be deposited

		in it during construction or with subsequent habitation / use. No deterioration in water quality will occur.
1140 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	Mitigation measures ensure that there is no deterioration of the estuary with no discharges to any surface water feature and the CEPM and mitigation measures ensuring that there is no deterioration in water quality during construction. There is no land take from it nor will any material be removed from, or deposited in it. The proposed project does not require any activity to be under taken inside the boundary of the Natura site nor will any construction related activities require any plant to enter or traverse it. No extraneous material will be deposited in it during construction or with subsequent habitation / use. No deterioration in water quality will occur. The Status of EU Protected Habitats and Species in Ireland 2019 indicates that the Overall status of the habitat is “Inadequate and deteriorating” with the change in trend, from improving to deteriorating, due to a genuine decline in the habitat since 2013. This was caused by pollution from agricultural, forestry and wastewater sources as well as impacts associated with marine aquaculture particularly the Pacific oyster (Magallana gigas) none of those causes of deterioration are associated with the proposed project and therefore will not be exacerbated.
2110 Embryonic shifting dunes	To maintain the favourable conservation condition of Embryonic shifting dunes in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Not relevant to the proposed project as no such habitat on or within 4Km of the proposed development site.
2120 Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	To restore the favourable conservation condition of Shifting dunes along the shoreline with Ammophila arenaria ('white	Not relevant to the proposed project as no such habitat on or within 4Km of the proposed development site.

	dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	
2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)	To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Not relevant to the proposed project as no such habitat on or within 4Km of the proposed development site.
5130 Juniperus communis formations on heaths or calcareous grasslands	To restore the favourable conservation condition of Juniperus communis formations on heaths or calcareous grasslands in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC,	Not relevant to the proposed project as no such habitat on or within 4Km of the proposed development site.
7220 Petrifying springs with tufa formation (Cratoneurion)	To maintain the favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Not relevant to the proposed project as no such habitat on or within 4Km of the proposed development site.
1014 Marsh *Snail Vertigo angustior*	To maintain the favourable conservation condition of Narrow-mouthed Whorl Snail in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Specific habitat requirements dictates that the species is not present on the proposed development site with no such habitat within 4Km of the proposed development site.
1095 Sea Lamprey *Petromyzon marinus*	To restore the favourable conservation condition of Sea Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Species will not use the drain to the south of the site as it does not present suitable habitat for it therefore the duck billed valve does not present a barrier to migration. Water quality will not be impacted during construction or with subsequent habitation therefore

		it will not be negatively impacted.
1099 River Lamprey *Lampetra fluviatilis*	To maintain the favourable conservation condition of River Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Species will not use the drain to the south of the site as it does not present suitable habitat for it therefore the duck billed valve does not present a barrier to migration. Water quality will not be impacted during construction or with subsequent habitation therefore it will not be negatively impacted.
1365 Harbour seal *Phoca vitulina*	To maintain the favourable conservation condition of Harbour Seal in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	Species not found within 4Km of the proposed development site. Water quality will not be impacted during construction or with subsequent habitation therefore it will not be negatively impacted

4.2 Conclusion

Based on the above, in view of best scientific knowledge, on the basis of objective information, the proposed project will not adversely affect any QI/SCI as a result of deterioration in surface water, habitat loss or disturbance during either construction or operation of the proposed project. There is no potential for adverse effect on the identified QIx/SCIs and their associated targets and attributes, or on any European site. All identified pathways for effect have been robustly blocked through measures to avoid impacts and the incorporation of best practices/mitigation measures into the project design. Taking cognisance of measures to avoid impacts and best practices/mitigation measures incorporated into the project design which are considered in the preceding section, the proposed project will not have any adverse effect on the integrity of any European site. he proposed project will not prevent the QIx/SCIs of European Sites from achieving/maintaining favourable conservation status in the future as defined in Article 1 of the EU Habitats Directive.

The potential impacts during the construction and habitation of the proposed development have been considered in the context of the Natura 2000 sites and their conservation objectives. Provided the mitigation measures are implemented and conditioned in any grant of planning permission, which gives its them a legally enforceable status, there will be no direct or indirect negative impacts on the SAC or SPA qualifying interests. There are no undesignated annexed habitat types present on the proposed development site. The proposed project would not increase or exacerbate the NPWS Natura forms identified threats to the SAC's habitats or species or the SPA avian species or habitat. The proposed project will not alter, interfere or impact on any of the key relationships that define either the function of or the structure of the Natura sites. The proposed project will not contravene the conservation objectives or impact on the features of interest for which the SAC and SPA were designated. None of the species for which the SPA and SAC were designated were detected on the site with no ex-situ use. Any

future expansion of the SAC / SPA network at this location would not result in the proposed development site being included as there are no suitable habitats present for such a designation.

The species for which the SAC and the SPA were designated are predominantly marine or confined to the wetlands, dunes, tidal, supra tidal or intertidal zones and have specific habitat requirements. It was determined that the proposed project would not contravene or conflict with the policies or objectives of any of the above provided the precautionary mitigation measures are implemented. Any potential increase in the Natura network would not encompass the proposed semi urban development site. Both the SAC and SPA habitat types are very specific with the species of interest for both largely confined to the tidal, inter tidal, supra tidal, marine or dune systems for both.

The conclusion satisfies the judgement of the European Court of Justice 7th November 2018; Case C 461/17; Holohan & Others v. An Bord Pleanála …."all the habitats and species for which the Natura 2000 site is protected must be catalogued; an Appropriate Assessment must identify and examine the implications of the proposed project for species present on the Natura 2000 site, including species for which the site has been listed and those for which it has not, provided those implications are liable to affect the conservation objectives of the site; an Appropriate Assessment must identify and examine the implications of the proposed project for species and habitats outside the boundaries of the Natura 2000 site, provided those implications are liable to affect the conservation objectives of the site" which dictates that provided the conservation objectives are not contravened then there will be no significant impacts on the Natura sites.

Based on the above, it can be concluded in a view of best scientific knowledge, on the basis of objective information that the proposed developments will not adversely affect the Qualifying Interests/Special Conservation Interests associated with associated EU sites.

5 REFERENCES

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APPENDIX A

- European Court of Justice 7th November 2018; Case C 461/17; Holohan & Others v. An Bord Pleanála - all the habitats and species for which the Natura 2000 site is protected must be catalogued; an Appropriate Assessment must identify and examine the implications of the proposed project for species present on the Natura 2000 site, including species for which the site has been listed and those for which it has not, provided those implications are liable to affect the conservation objectives of the site; an Appropriate Assessment must identify and examine the implications of the proposed project for species and habitats outside the boundaries of the Natura 2000 site, provided those implications are liable to affect the conservation objectives of the site.; the competent authority may grant consent for a plan or project that leaves for later decision the determination of certain parameters relating to the construction phase if the competent authority is certain (i.e. 'no reasonable scientific doubt) that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

- High Court Ruling 2nd February 2019 by Mr. Justice Barniville; Neutral Citation [2019] IEHC 84; High Court Record No. 2017 883 JR; Kelly -v- An Bord Pleanála & Anor- SUDS are not mitigation measures which a competent authority is precluded from considering at the stage 1 screening stage.

- European Court of Justice 19th April 2018; Case C 164/17; Grace & Sweetman -v- An Bord Pleanála – a measure compensating for the negative effects of a project cannot be taken into account in an Appropriate Assessment Natura Impact Statement (Stage 2).

- European Court of Justice Judgement 12th April 2018 by the Seventh Chamber; Case C 323/17; People Over Wind & Sweetman -v- Coillte Teoranta - it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on a Natura 2000 site

- High Court Ruling 25th February 2016 by Mr. Justice Barton; Neutral Citation [2016] IEHC 134; High Court Record No. 2013 450 JR; Balz & Heubach -v- An Bord Pleanála - recording complete definitive and precise findings, and conclusions re Appropriate Assessment.

- High Court Ruling 24th November 2014 by Mr. Justice Hedigan; Neutral Citation [2014] IEHC 557; High Court Record No. 2014 320 JR; Rossmore Properties Limited & Anor -v- An Bord Pleanála – where mitigation measures are an intrinsic part of a project, they may be taken into

account in the stage 1 screening process.

- High Court Ruling 25th July 2014 by Ms. Justice Finlay Geoghegan; Neutral Citation [2014] IEHC 400; High Court Record No. 2013 802 JR; Kelly -v- An Bord Pleanála – judicial review of grant of planning by An Bord Pleanála for two wind farm phases in County Roscommon, including failure of ABP to carry out lawful appropriate assessment and giving reasons for its determination.

- European Court of Justice Judgement 11th April 2013 by the Third Chamber; Case C-258/11 Peter Sweetman and Others v An Bord Pleanála - criteria to be applied when assessing the likelihood that a project or plan (N6 Galway City Outer Bypass road scheme in this case) will adversely affect the integrity of a Natura 2000 site (Lough Corrib SAC in this case), where the integrity of a Natura 2000 site is considered to be adversely affected if a plan or project is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site.

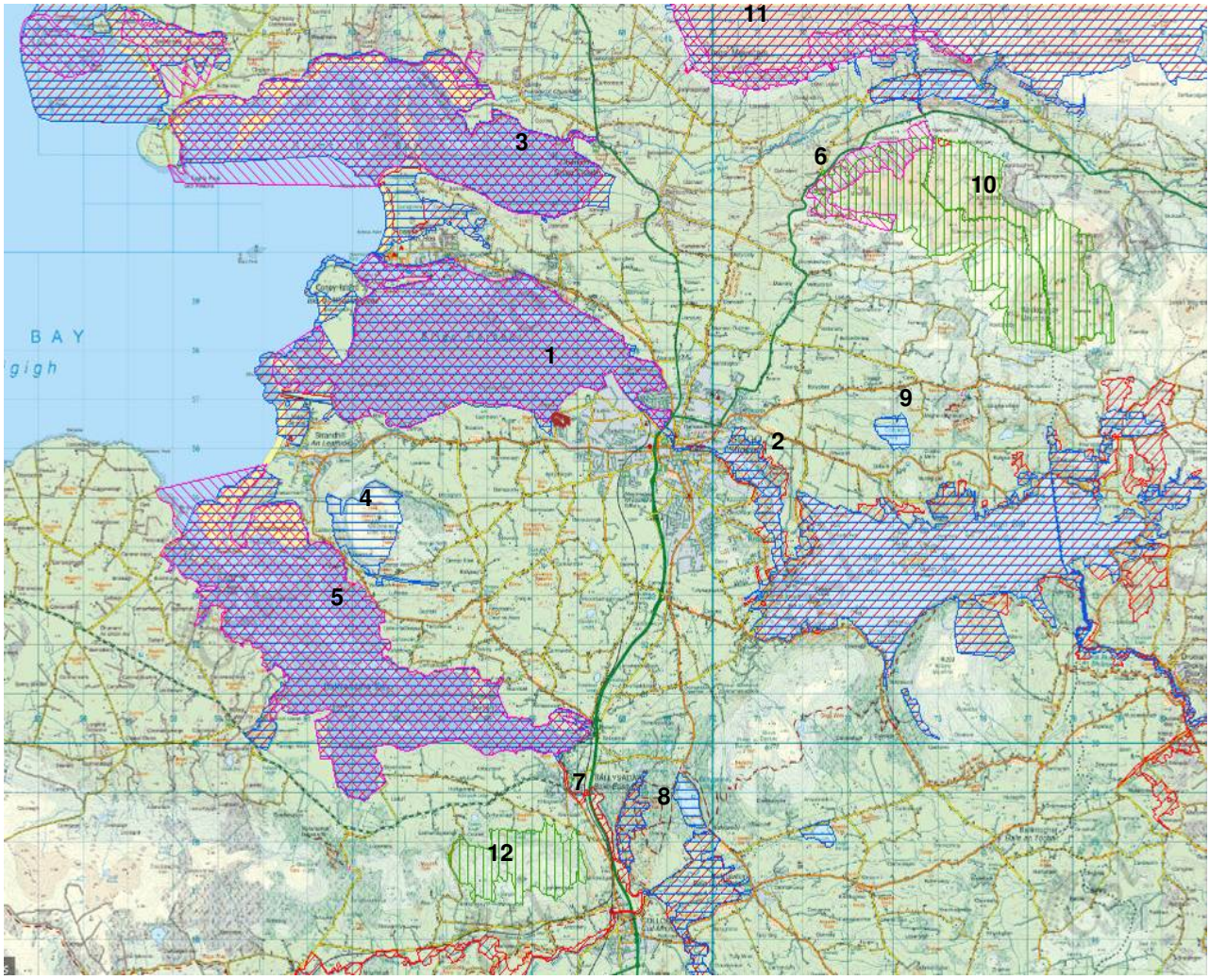
- European Court of Justice Opinion 22nd November 2012 by Advocate General Sharpston; Case C258/11 Peter Sweetman and Others v An Bord Pleanála – in determining whether a project or plan has an adverse effect on the integrity of a site (to which Article 6(3) of Council Directive 92/43/EEC applies), an effect which is permanent or long lasting must be regarded as an adverse effect.

- European Court of Justice ruling in 2013 (Case C258/11) has stated the following regarding significant effect: “Where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site’s conservation objectives, it must be considered likely to have a significant effect on that site. The assessment of that risk must be made in the light of, in particular, the characteristics and specific environmental conditions of the site concerned by such a plan or project (see, to this effect, Waddenvereniging and Vogelbeschermingsvereniging, paragraph 49)”

- High Court Ruling 2nd February 2019 by Mr. Justice Barniville; Neutral Citation [2019] IEHC 84; High Court Record No. 2017 883 JR; Kelly -v- An Bord Pleanála & Anor- SUDS are not mitigation measures which a competent authority is precluded from considering at the stage 1 screening stage.

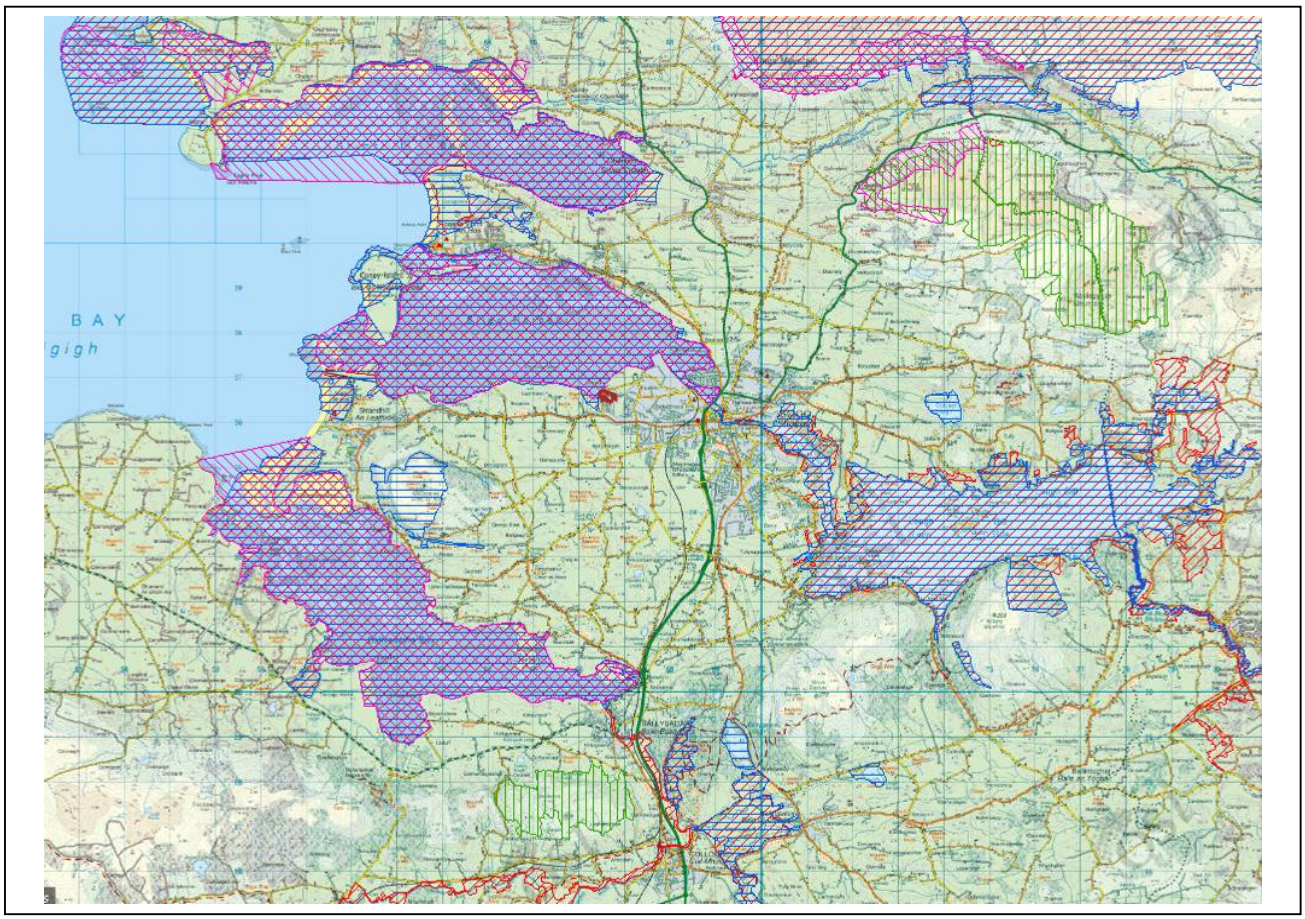
APPENDIX B

Map 1a: Designated Natura sites within 15Km



(1) Cummeen Strand SPA 004035 / Cummeen Strand / Drumcliff Bay SAC 00627
(2) Lough Gill SAC 001976
(3) Drumcliff Bay SPA 004031
(4) Knocknarea Mountain and Glen pNHA
(5) Ballysadare Bay SPA 004129 / Ballysadare Bay SAC 000622
(6) Sligo / Leitrim Uplands SPA 004187
(7) Unshin River SAC 001898
(8) Union Wood SAC 000638
(9) Colgagh Lough pNHA 001658
(10) Crockanus / Keelogyboy Bog NHA 002435
(11) Benbulben, Gleniff and Glenade Complex SAC 000623
(12) Slieveward Bog NHA 001902

Map 2b: proximity of the proposed development site to Natura Sites



APPENDIX C

APPROPIATE ASSESSMENT SPECIFIC ECOLOGICAL SURVEY
REGARDING THE PROPOSED PLANNING APPLICATION
FOR A RESIDENTIAL HOUSING ESTATE
AT
KNAPPAGH MORE, SECOND SEA ROAD, SLIGO
CO. SLIGO

Client: Carnarvon Limited,
10 O'Connell Street,
Sligo
Co. Sligo

Paul Neary B.Sc. (Hns. Env. Sc.) M.Sc. (Eco. Tox)
Environmental Consultant
Stonehall
Foxford
Co. Mayo
Tel: 00353 87 2352811

1.1 SITE DESCRIPTION AND DESK TOP STUDY

1.2 PLOT HISTORY AND CURRENT LAND USE

1.3 ECOLOGICAL SURVEY

1.3.1 Ecological survey

1.3.2 Botany

1.3.3 Fauna

1.3.4 Avian Species

1.3.5 Amphibians

1.3.6 Entomology

Appendix 1: Habitat Map

1.1 Site Description and desk top study

The development will comprise the following:

A total of 95 No. residential units consisting of

5 No. – Type A– 4 Bed Semi Detached Houses

4 No. – Type A1 – 5 Bed Semi Detached House

46 No. – Type B/B1 – 3 Bed Semi Detached/Terraced Houses

18 No. – Type C – 2 Bed Apartments

8 No. – Type D – 1 Bed Semi Detached/Terraced Bungalow Houses

4 No. – Type E – 2 Bed Semi Detached Bungalow Houses

10 No. – Type F/F1 – 4 Bed Detached Houses

Demolition of 1 No. unfinished vacant house and garage,

Proposed Crèche with associated landscaping and surface car parking,

On site waste water pumping station to facilitate connection to Sligo Town sewer.

All landscaping, boundary treatments, entrance improvements, public lighting, all associated site works and service connections including the public water mains and installing a storm water attenuation system. Culverting a section of the southern drain and installing duck billed valve. The WN6 habitat on site is to be retained.

Receiving Environment:

It is located in the Sligo Bay & Drowse catchment which includes all streams entering tidal water in Sligo Bay and between Lenadoon Point and Aughrus Point, Co. Donegal. The catchment has a surface area of 1,866km². The largest urban centre is Sligo Town. The other main urban centers are Ballymote, Collooney, Ballysadare and Manorhamilton. The total population is approximately 59,184 with a population density of 32 people per km². A small part of this catchment, 109km² is located within Northern Ireland with the statistics presented here and the classification by the WFD / RBMP referring specifically to the part of catchment located within The Republic. The site is located in the Carrowgobbaddagh 010 sub catchment and more specifically in the Knappagh 35 sub basin.

The underlying geology is DUIL (dinantian upper impure limestone) which contains a Locally important aquifer (Ll) of High (H) vulnerability. The soils on site are a mix of AminDW (acid mineral deep well drained brown eearths and grey / brown podzolics) in the Western section which gives way to AminPD (acid mineral poodly drained surface water and ground water gleys) in the central section with Lac along the Eastern side. Which overlie a subsoil defined by the GSI as TMp (till derived chiefly from metamorphic rocks). The site is not located within a designated or proposed Natura site but is icontiguous to one with the closest along the

Western Boundary, the Cummeen Strand / Drumcliff Bay (Sligo bay) SAC 000627 with the Cummeen Strand SPA site code 004035 9.6M North West across the local access road. The on site habitat is described as improved agricultural grassland (GA1) with a small element of buildings and artificial surfaces (BL3). The semi urban setting dictates that the surrounding land use consists of commercial building, roads, amenity grassland and dwellings. The noise levels at the site are dominated by RTN and general continuous anthropogenic activity from the housing and industrial estates.

There is no existing qualitative or quantitative data for ground water in the immediate area of the proposed development. The NRBMP indicate that the ground water status is "Good" and "At Risk" and not in a nutrient sensitive area but is in an "Area for Action" however there are no proposals to discharge to ground water associated with the project

The near surface phosphate susceptibility PIP is between 2 and 4 with the near surface nitrate susceptibility PIP identified by the EPA as 4/3 and the sub surface N between 4 and 5.

The Garravogue at this location is considered to be of "Poor" status and "At risk" with the Q value down stream at station RS35G010200 recorded as 3 in 2018 however there are no direct hydro geological links between he proposed development site and the Garravogue with no direct discharges to any surface water associated with the project. The Knappagh Stream to the North is currently unassigned regarding the status.

The EPA Q values are more pertinent regarding empirical evidence when completing the AA process which is ratified by various NPWS detailed conservation objectives which make specific reference to the Q values when considering potential impacts on species.

The air quality in the area is described as very good (zone D) which translates to the following, SO_2 0-49µgM^{-3} (1hr average), NO_2 0-36 µgM^{-3} (1hr average), O_3 0-39 µgM^{-3} (1hr average) and PM_{10} 0-19 µgM^{-3} (24hr average).

1.2 Plot History and Current Land Use:

The plot is currently disused with a previous grant of planning permission now lapsed on the site. There is an abandoned derelict dwelling on the site which is in a poor state of repair with the roof largely missing. The site was previously cleared back to the soil / sub soil and is currently disused.

1.3 ECOLOGICAL SURVEY

(see maps)

1.3.1 Ecological survey :

The habitat on site are a mosaic of,

(1) GS4 – wet grassland

(2) BL3 – buildings and other artifical surfaces

(3) ED3 – recolonising bare ground

(4) WS1 - scrub

(5) GA1 – improved agricultural grassland

(6) WL1 / WL2 – hedgerow and tree lines

(7) WN6 – Wet Willow – Alder – Ash Woodland

(8) BL1 – stone walls and other stone features

(9) FW4 – Drainage DItch

(10) FS1 – Reed and Large Reed Swamps

(11) ED1 – Exposed Sand Gravel or Till

1.3.2 Botany

As part of the assessment it was noted that post 2000 the entire site appears to have been stripped and devoid of vegetation (see aerial photograph below).

This has resulted in large sections on the site being classified as ED3 – bare soil >30% with the remaining of the site classified as WS1 (Salix sp.., *Alnus glutinosa*, *Ulex sp.*) The BL3, GA1 and GS4 habitats only form a small portion of the site. The WN6 habitat is juvenile and not fully established. The FW4 habitat is not a natural feature and has recently being cleaned with that action not as a result of the proposed project. The FS1 features are exceptionally small and prone to drying out and were dry on the day of survey (23/05/22). They are not natural features and most likely due to depression storage due to excavations and soil compaction on the site. The BL1 relates to the Wall along athe Secons Sea Road while the WL1 and WL2 are concerned with the hedgerow on the Eastern side of the site.

1.3.3 Fauna.

There was no direct or indirect evidence of any mammalian species for which the SAC was designated present in the location of the proposed development. This was not unanticipated given the continual anthropogenic activity in the area and the sites location within an urban environment.

The reclusive Lutra Lutra would not use the site due to the continual anthropogenic activity and the obsence of suitable habitat (the features present are insufficient in size to support prey species) with the Second Sea Road segregating the site from the bay.

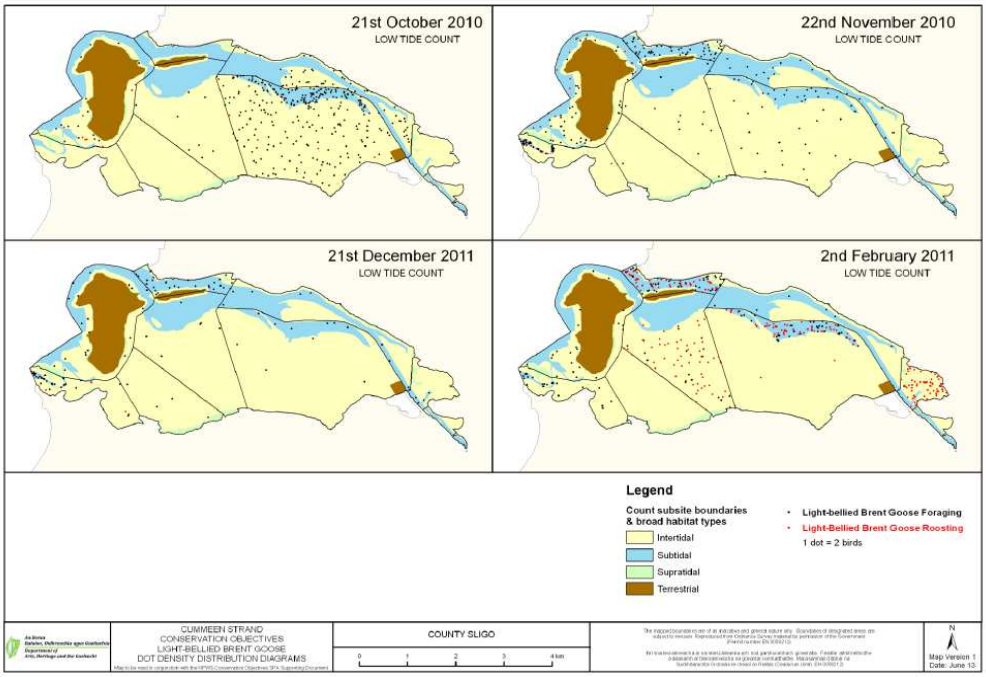
1.3.4 Avian species.

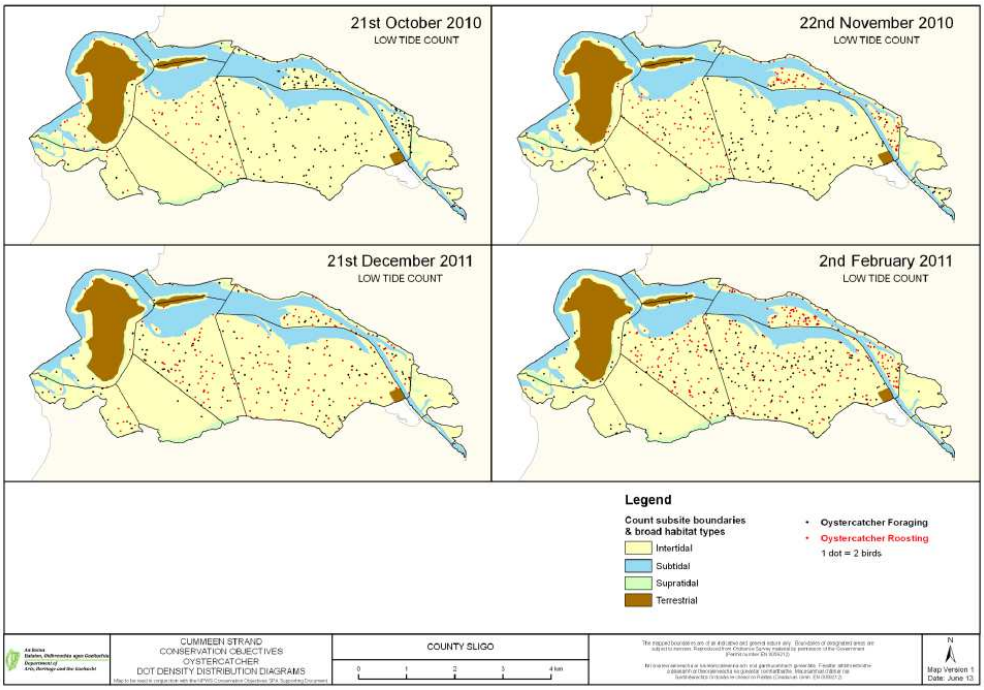
Although the normal ubiquitous avian species were observed no annexed avian species were recorded in the location of the proposed development nor would any be anticipated. The BL3 habitat combined with the presence of the adjacent housing estate with the potential for predation / disturbance from domesticated felines / canines precluding ground nesting / roosting avian species from using the site. The impact of the invasive feral mink populations on ground nesting birds has yet to be determined. The SPA avian species would not nest, roost or forage at this location and tend to be confined to the tidal / supra tidal / intertidal areas of the bay. The proposed site is located in the OC466 sub site and as potential disturbance is a key factor on the SPA avian species it has been assessed by NPWS (see table below).

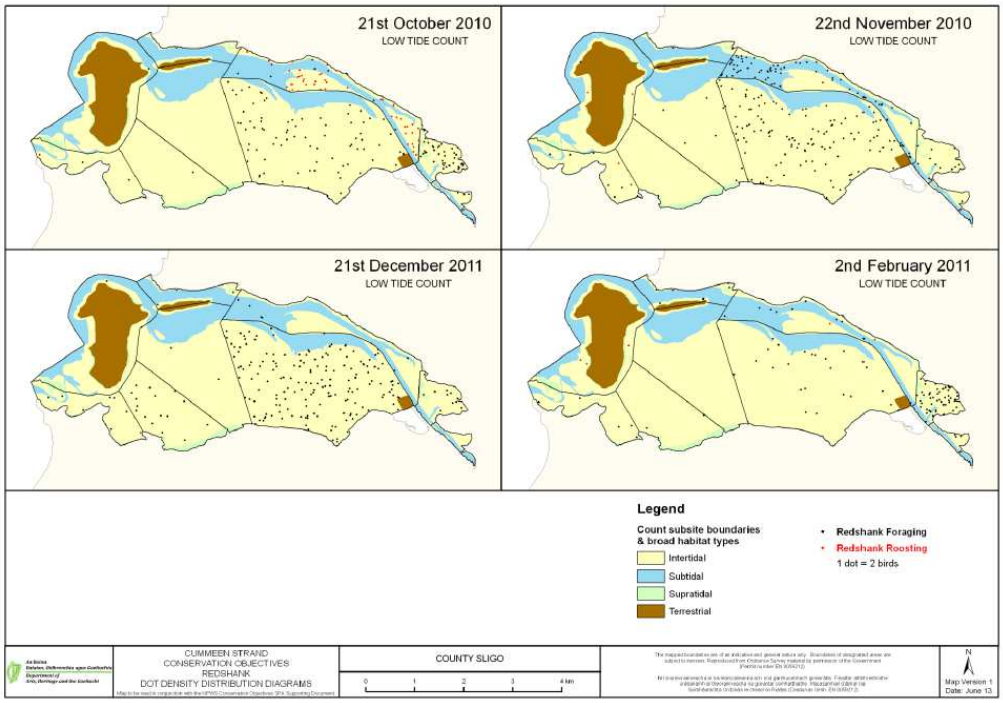
Activity/Event	0C445	0C446	0C447	0C462	0C463	0C466	0C478	0C479	0C482	0C485
8.2 Flight path				4	6		5		6	
12.18 Walking, incl. dog walking	5			6	5	5	5		6	
12.22 Motorised vehicles				5						
12.23 Horse-riding				4		4				
15.9 Intertidal aquaculture & assoc. activity						7				

None of the disturbance activities identified disturbance would be exacerbated or increased as a result of the propoed project as none of them are associate with the project.

The last NPWS survey of the annexed avian species occurred between 2010 and 2011. Those surveys indicated that the area in close proximity to the proposed site is relatively devoid of species roosting, nesting or foraging.




21st October 2010
LOW TIDE COUNT
22nd November 2010
LOW TIDE COUNT
21st December 2011
LOW TIDE COUNT
2nd February 2011
LOW TIDE COUNT
Legend
Count subsite boundaries & broad habitat types
Intertidal
Subtidal
Supratidal
Terrestrial
Oystercatcher Foraging
Oystercatcher Roosting
1 dot = 2 birds
CUMMEEN STRAND
CONSERVATION OBJECTIVES
OYSTERCATCHER
DOT DENSITY DISTRIBUTION DIAGRAMS
COUNTY SLIGO
0 1 2 3 4 km
N
Map Version 1
Date: June 13


21st October 2010
LOW TIDE COUNT
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LOW TIDE COUNT
2nd February 2011
LOW TIDE COUNT
Legend
Count subsite boundaries & broad habitat types
Intertidal
Subtidal
Supratidal
Terrestrial
Redshank Foraging
Redshank Roosting
1 dot = 2 birds
CUMMEEN STRAND
CONSERVATION OBJECTIVES
REDSHANK
DOT DENSITY DISTRIBUTION DIAGRAMS
COUNTY SLIGO
0 1 2 3 4 km
N
Map Version 1
Date: June 13

The IWeBS 2017 and 2018 surveys were also consulted with respect to the presence of the QI avian species. The current land use, location and lack of suitable roosting habitat dictates that there would be no ex situ use by any of the SPA avian species, in addition the factors listed below should alos be considered.

(1) The site was previously reclaimed with no natural habitat remaining
(2) The on site scrub provides cover for ambush predators including the now ubiquitous mink, which has been recorded as moving into urban areas in a similar fashion to urban foxes.
(3) Traffic movement along the sea road.
(4) Disturbance and predation by domesticated animals in particular felines and canines.
(5) Absence of suitable habitats for roosts (salt marsh, shore line, dunes, mud flats).
(6) Semi Urban setting of the proposed development site
(7) The impact of the wild mink population predating on ground nesting / roosting species.
(8) The absence of a concerted sustained predator control program in the area.
(9) Absence of prey species for foraging.

1.3.5 Amphibians.

No Amphibian species were noted nor is there any suitable on site habitat suitable to support any populations of such species. The FS1 habitats had dried out completel on the days of the surveys with the FW4 feature recently cleaned.

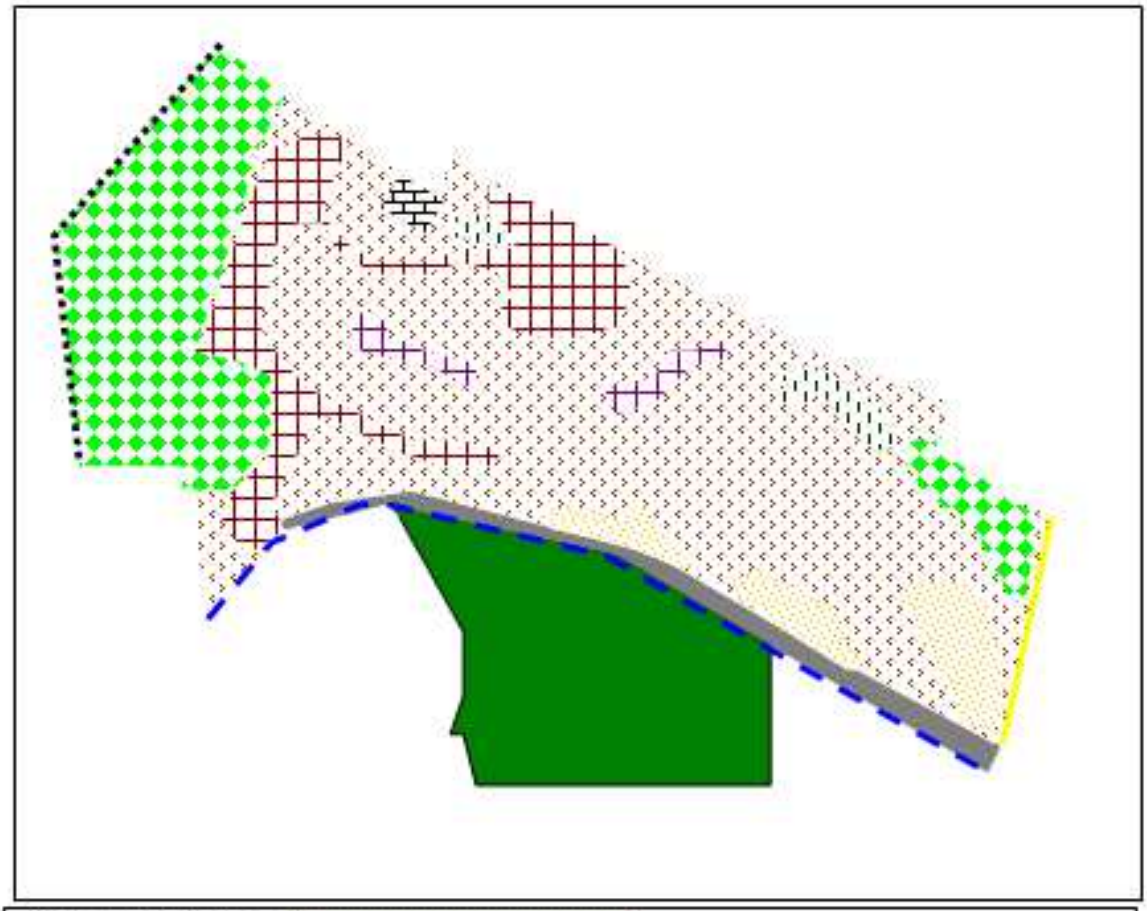
1.3.6 Entomology.

No invertebrate species of note were recorded.

Paul Neary B.Sc., M.Sc.
**PL321 (code 00805)

** These codes indicate that Paul Neary is an approved environmentalist by NPWS / Duchas / Dept. of Agriculture for the carrying out of ecological assessments on NHA's, SAC's, SPA's, pNHA's and National Parks and the creation of management plans and frame work plans on the afore mentioned.

HABITAT MAP



(1) GS4 – wet grassland

(2) BL3 – buildings and other artifical surfaces

(3) ED3 – recolonising bare ground

(4) WS1 - scrub

(5) GA1 – Improved agricultural grassland

(6) WL1 / WL2 – hedgerow and tree lines

(7) WN6 – Wet Willow – Alder – Ash Woodland

(8) BL1 – stone walls and other stone features

(9) FW4 – Drainage Ditch

(10) FS1 – Reed and Large Reed Swamps

(11) ED1 – Exposed Sand Gravel or Till

APPENDIX D

Table 1 General characteristics of the various Biological Quality Classes

Quality Classes	Class A		Class B	Class C	Class D	
Quality Ratings (Q)	Q5	Q4	Q3 -4	Q3	Q2	Qi
Pollution Status	Pristine, Unpolluted	Unpolluted	Slight Pollution	Moderate Pollution	Heavy Pollution	Gross Pollution
Organic Waste Load	None	None	Light	Considerable	Heavy	Excessive
Maximum B.O.D.	Low (< 3 mg/1)	Low (< 3 mg/1)	Occasionally elevated	High at times	Usually high	Usually very high
Dissolved Oxygen	Close to 100%	80%- 120%	Fluctuates from <80%to>120%	Very unstable Potential fish-kills	Low, sometimes zero	Very low, often zero
Annual Median ortho-Phosphate	-0.0 1 5 mg P/l	-0.030 mg P/l	-0.045 mg P/l	-0.070 mg P/l	usually > 0. 1 mg P/l	usually > 0. 1 nig P/l
Siitation	None	May be light	Maybe light	May be considerable	Usually heavy	Usually very heavy and anaerobic
'Sewage Fungus '	Never	Never	Never	May be some	Usually abundant	May be abundant
Filamentous Algae	Limited development	Considerable growths Diverse	*Cladophora* may be abundant	*Cladophora* may be excessive	May be abundant	Usually none
Macrophytes	Diverse communities Limited growths	Diverse communities Considerable growths	Reduced diversity Luxuriant growths	Limited diversity Excessive growths	Tolerant species only. Mav be abundant.	Usually none or tolerant species only.
Macroinvertebrates (from shallow riffles)	Diverse communities. Normal density. Sensitive forms usually numerous.	High diversity. Increased density. Sensitive forms scarce or	Very high diversity. Very high density. Sensitive forms scarce.	Sensitive forms absent. Tolerant forms common. Low diversity.	Tolerant forms only. Very low diversity.	Most tolerant forms. Minimal diversity.
Water Quality	Highest quality	Fair quality	Variable quality	Doubtful quality	Poor quality	Bad quality
Abstraction Potential	Suitable for all	Suitable for all	Potential problems	Advanced treatment	Low grade abstractions	Hxtremely limited
Fishery Potential	Game fisheries	Good game fisheries	Game fish at risk	Coarse fisheries	Fish usually absent	Fish absent
Amenity value	Very high	High	Considerable	Reduced	Low	Zero

APPENDIX E

EVALUATION AND IMPACT MAGNITUDE TABLES

2.1 Ecological Site Evaluation Criteria (derived from NRA and IEEM EcIA Guidelines)

Ecological value		Criteria
Internationally important (A sites)		EU Annex habitat in an internationally designated conservation area (or qualifying site; or site with a proposed designation)
		A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of a larger whole.
		Non-designated high quality habitat which equates to an EU Annex I priority habitat
		A regularly occurring, nationally significant population / number of any internationally important species.
Nationally important (B sites)		EU Annex habitat in a designated (or proposed) NHA.
		Non-designated good example of Annex I habitat (Under EU habitats Directive)
		Any habitat which may have been formerly classified as EU Annex I quality, but which has been subsequently highly modified as a result of change in the physical environment or damaged. Such a habitat may be still be classified as an Annex habitat on the basis of the presence of one or more character plant species, but can no longer be considered a good example of that habitat type
Locally important	**High value** (C sites)	Sites containing semi-natural habitat types with high biodiversity in a local context, with high degree of intrinsic naturalness.
		Locally rare habitats or species
	Moderate value (D sites)	Sites containing some semi-natural habitat or locally important for wildlife
	Low value (E sites)	Highly modified or artificial habitats with low intrinsic ecological value in terms of biodiversity
		Artificial habitats which provide some secondary wildlife habitat of local value

NRA EcIA criteria for assessing impact magnitude

Impact Magnitude	Internationally important (A sites)	Nationally important (B sites)	High value, locally important (C sites)	Moderate value, locally important (D sites)	Low value, locally important (E sites)
Profound negative	Any permanent impacts	Permanent impacts on a large part of a site			
Significant negative	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site		
Moderate Negative	Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a small part of a site	Permanent impact on a site if part of a designated site
Slight Negative		Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site
Imperceptible Negative			Temporary impacts on a small part of the site	Temporary impacts on a small part of the site	Permanent impacts on a small part of a site
Neutral	No impacts	No impacts	No impacts	No impacts	No impacts
Slight Positve				Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site

For ecological evaluation criteria see Table 5 above

APPENDIX F

THIRD SCHEDULE

Non-native species subject to restrictions under *Regulations 49 and 50*

Part 1: PLANTS

First column	Second column	Third column
Common name	Scientific name	Geographical application
American skunk-cabbage	*Lysichifon tnneiicunus*	Throughout the State
A red alga	*Gratdoupia doryphora*	Throughout the State
Brazilian giant-rhubarb	*Gunnera manicata*	Throughout the State
Broad-leaved rush	*Juncus planifolius*	Throughout the Slate
Cape pondweed	*Aponogeton distachyos*	Throughout the State
Cord-grasses	*Spartina* (all species and hybrids)	Throughout the State
Curly waterweed	*Lagarosiphon major*	Throughout the State
Dwarf eel-grass	*Zostera japoniai*	Throughout the State
Fanwort	*Cabomba caraliniana*	Throughout the State
Floating pennywort	*Hydrocotyle ratmnculoides*	Throughout the State
Fringed water-lily	*Nymphoides peltata*	Throughout the State
Giant hogweed	*Heracleum mantegazzianum*	Throughout the State
Giant knotweed	*Fallopia sachalinensis*	Throughout the Slate
Giant-rhubarb	*Gunnera tinctoria*	Throughout the State
Giant salvinia	*Salvinia molesta*	Throughout the State
Himalayan balsam	*Impatiens glanduUfera*	Throughout the State
Himalayan knotweed	*Persicaria wallichii*	Throughout the State
Hottentot -fig	*Carpobrotus edulis*	Throughout the State
Japanese knotwced	*Pallopia japonica*	Throughout the State
Large-flowered waterweed	*Egeria densa*	Throughout the State
Mile-a-minute weed	*Persicaria perfoliata*	Throughout the State
New Zealand pigmyweed	*Crassula helmsii*	Throughoui the State
Parrot's feather	*Myriophyllum uquaticum*	Throughout the State
Rhododendron	*Rhododendron ponlicum*	Throughout the State
Salmonberry	*Rubus spectabilis*	Throughout the State
Sea-buckthorn	*Hippophae rhamnaides*	Throughout (he State
Spanish bluebell	*flyacinthoides hispanica*	Throughout the State
Three-cornered leek	*Alliwn triquetrum*	Throughout the State
Wakame	*Unduria pirmatifida*	Throughout the State
Water chestnut	*Trupa ntrtans*	Throughout the State
Water fern	*Azolla filiculoides*	Throughout the State
Water lettuce	*Pistia stratiotes*	Throughout the State
Water-primrose	*Ludwigia* (all species)	Throughout the State
Waterweeds	*Elodea* (all species)	Throughout the State
Wire weed	*Sargassum muticum*	Throughout the State

Part 2: ANIMALS

A: animals to which Regulations 49 and 50 apply throughout the State or in particular places or categories of places.

First column	Second column	Third Column
Common name	Scientific name	Geographical application
A colonial sea squirt	*DJdemnum spp.*	Throughout the State
A colonial sea squirt	*Perophora japonica*	Throughout the State
All freshwater crayfish species except the white-clawed crayfish	*All freshwater crayfish species except Austropotamobius paliipes*	Throughout the State
American bullfrog	*Ranu catesbeiana*	Throughout the State
American mink	*Neovison vison*	Throughout the State
American oyster drill	*Urosalpinx dnerea*	Throughout the State
Asian oyster drill	*Ceratoslonia inornalum*	Throughout the State
Asian rapa whelk	*Rapana venosa*	Throughout the State
Asian river clam	*Corbiculu flunrinea*	Throughout the State
Bay barnacle	*B alarms improvisus*	Throughout the State
Black rat	*Rattus reams*	Offshore islands oniy
Brown hare	*Lepus europaeus*	Throughout the State
Brown rat	*Rattits norvegicus*	Offshore islands oniy
Canada goose	*Branta canadensis*	Throughout the State
Carp	*Cyprinus carpio*	Throughout the State
Chinese mitten crab	*Eriocheir sinensis*	Throughout the State
Chinese water deer	*Hydropotes inermis*	Throughout the State
Chub	*Leuciscus cephalus*	Throughout the State
Common toad	*Bufo bufo*	Throughout the State
Coypu	*Myocastor coy pus*	Throughout the State
Dace	*Leuciscus leuciscus*	Throughout the State
Freshwater shrimp	*Dikero gamin arus villosus*	Throughout the State
Fox	*Vulpes vulpes*	Offshore islands only
Grey squirrel	*Sciurus cnrolinensis*	Throughout the State
Greylag goose	*Anser anser*	Throughout the State
Harlequin Ladybird	*Harmonia axyridis*	Throughout the State
Hedgehog	*Erinaceus eiiropaeus*	Offshore islands only
Irish stoat	*Musteta erminea hibemiais*	Offshore islands only
Japanese skeleton shrimp	*Caprella mutica*	Throughout the State
Muntjac deer	*Muntiacus reevesi*	Throughout the State
Muskrat	*Ondatra zibethicus*	Throughout the State
Quagga Mussel	*Dreissena rostrifonnis*	Throughout the State
Roach	*Rutilus rutilus*	Throughout the State
Roe deer	*Capreolus capreolus*	Throughout the Stale
Ruddy duck	*Oxyuru jamaicensis*	Throughout the State

First column	Second column	Third Column
Siberian chipmunk	*Tamias sibiricus*	Throughout the State
Slipper limpet	*Crepidnla fornicala*	Throughout the State
Stalked sea squirt	*Styela clava*	Throughout the State
Tawny owl	*Strix aluco*	Throughout the Slate
Wild boar	*Sus xcrofa*	Throughout the State
Zebra mussel	*Dreissena polymorpha*	Throughout the State

B: animals to which specified provisions of Regulations 49 and 50 apply.

First column	Second column	Third Column
Common name	Scientific name	Geographical application
Fallow deer	*Dania damn*	Throughout the State
Sika deer	*Cervus nippon*	Throughout the State

Part 3: VECTOR MATERIALS

First column	Second column	Third Column
Vector material	Species referred to	Geographical application
Blue mussel *(Mytitus edulis)* seed for aquaculture taken from places (including places outside the State) where there are established populations of the slipper iimpet *(Crepiditla fornicata)* or from places within 50 km. of such places	Mussel *(Mytilus edulis)* Slipper limpet *(Crepidula fornicata)*	Throughout the State
Soil or spoil taken from places infested with Japanese knotweed *(Fallopia japonica),* giant knotweed *(Fallopia sachalinemis)* or their hybrid Bohemian knotweed *(Fallopia* x *bahemica)*	Japanese knotweed *(Fallopia japonica)* Giant knolweed *(Fallopia sachalinensis)* Bohemian knotweed *(Fallopia x bohcmica}h*	Throughout the State

APPENDIX G

WFD Cycle 2

Catchment Sligo Bay & Drowse

Subcatchment
CARROWGOBBADAGH_SC_010

Code 35_1

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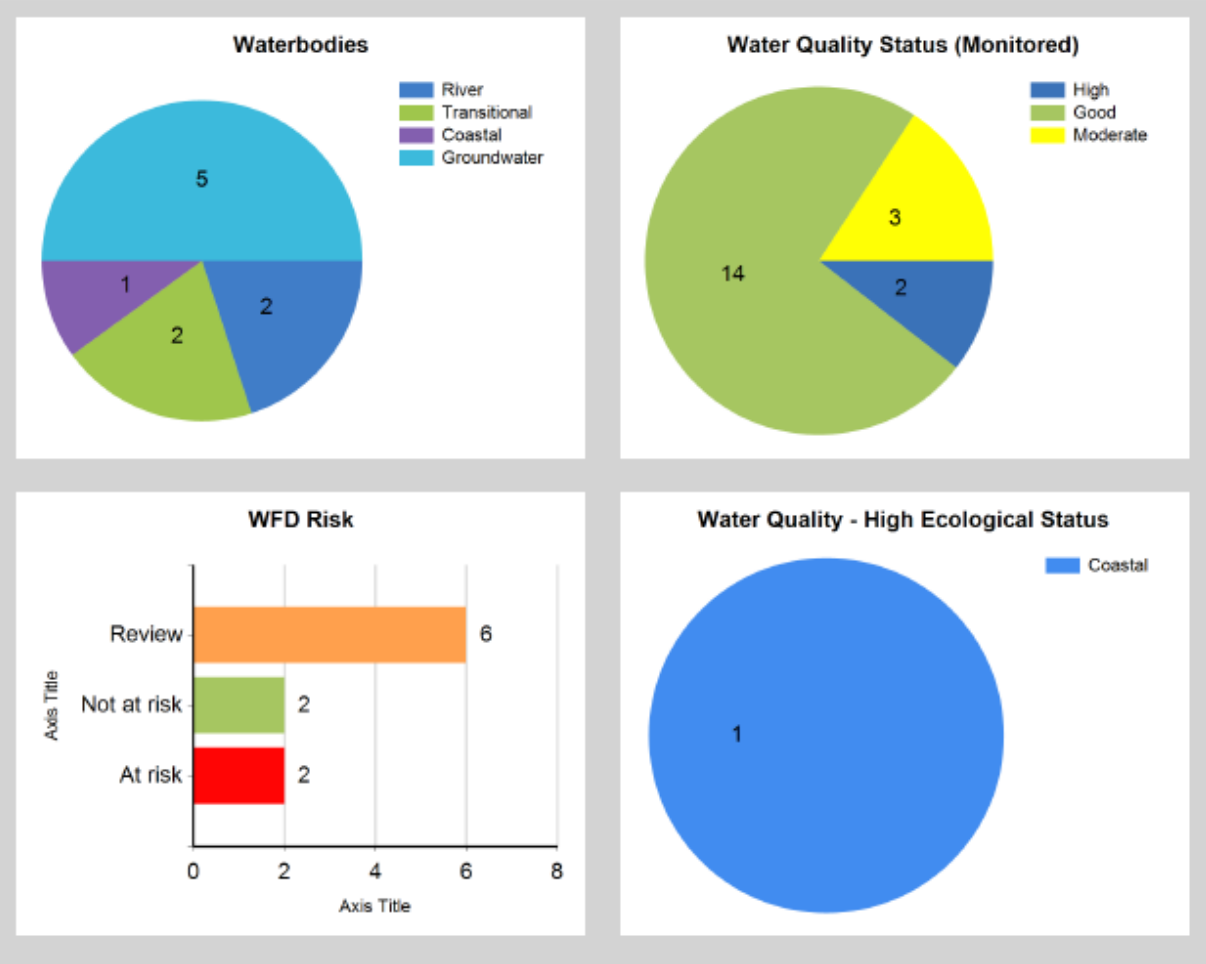
Assessment Purpose

This assessment has been produced as part of the national characterisation programme undertaken for the second cycle of Water Framework Directive river basin management planning. It has been led by the EPA, with input from Local Authorities and other public bodies, and with support from RPS consultants.

The characterisation assessments are automatically generated from the information stored in the WFD Application. They are based on information available to the end of 2015 but may be subject to change until the final 2018-21 river basin management plan is published. Users should ensure that they have the most up to date information by downloading the latest assessment before use.



Evaluation of PrioritySubcatchment Issues

Without additional data, it is difficult to determine the main pressures in this sub-catchment, however, Urban Run-off has been flagged as a potential significant pressure in Knappagh 35_010. Further investigation is required to determine the significant pressures in the subcatchment.

Map Subcatchment Risk Map

River And Lake Waterbodies: WFD Risk

The following river and lake waterbodies are in the subcatchment.

Code	Name	Type	WFD Risk	Significant Pressure
IE_WE_35K420630	KNAPPAGH (Sligo)_010	River	Review	Yes
IE_WE_35K430740	KNOCKNAHUR_010	River	Review	No

Map Subcatchment Water Quality Status Map

River And Lake Waterbodies: Water Quality Status

The water quality status of river and lake waterbodies in the subcatchment is as follows.

Code	Name	Type	2007-09	2010-12	2010-15
IE_WE_35K420630	KNAPPAGH (Sligo)_010	River	Unassigned	Unassigned	Unassigned
IE_WE_35K430740	KNOCKNAHUR_010	River	Unassigned	Unassigned	Unassigned

Potentially Dependent Transitional and Coastal Waterbodies

The Transitional and Coastal waterbodies listed below intersect spatially with river and lake waterbodies in the subcatchment ...

Code	Name	Type	Local Authority	WFD Risk
IE_WE_450_0000	Sligo Bay	Coastal	Sligo County Council	Not at risk
IE_WE_460_0300	Ballysadare Estuary	Transitional	Sligo County Council	At risk
IE_WE_470_0100	Garavoge Estuary	Transitional	Sligo County Council	Review

Potentially Dependent Groundwater Waterbodies

The groundwaters listed below interset spatially with river and lake waterbodies in the subcatchment ...

Code	Name	Type	Local Authority	WFD Risk
IE_WE_G_0040	Carrowmore West	Groundwater	Sligo County Council	Review
IE_WE_G_0042	Carrowmore East	Groundwater	Sligo County Council	At risk
IE_WE_G_0044	Drumcliff-Strandhill	Groundwater	Sligo County Council	Review
IE_WE_G_0048	Collooney	Groundwater	Sligo County Council	Review
IE_WE_G_0054	Dromahair	Groundwater	Leitrim County Council	Not at risk

Protected Areas intersecting River and Lake Waterbodies

The Protected Areas listed below intersect spatially with river and lake waterbodies in the subcatchment ...

Code	Name	Type	Waterbody Name	Association Type
IE0000622	Ballysadare Bay SAC	SAC	KNOCKNAHUR_010	Overlapping / partly within Protected Area
IE0000627	Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	SAC	KNAPPAGH (Sligo)_010	Overlapping / partly within Protected Area
IE0004035	Cummeen Strand SPA	SPA	KNAPPAGH (Sligo)_010	Overlapping / partly within Protected Area

Pressures

Below is a list of all significant pressures identified in the subcatchment.

Code	Name	WFD Risk	Pressure Category	Pressure Sub Category
IE_WE_460_0300	Ballysadare Estuary	At risk	Urban Waste Water	Agglomeration PE of 2,001 to 10,000
IE_WE_460_0300	Ballysadare Estuary	At risk	Agriculture	Agriculture
IE_WE_G_0042	Carrowmore East	At risk	Forestry	Forestry
IE_WE_35K420630	KNAPPAGH (Sligo)_010	Review	Urban Run-off	Diffuse Sources Run-Off
IE_WE_470_0100	Garavoge Estuary	Review	Anthropogenic Pressures	Unknown
IE_WE_G_0040	Carrowmore West	Review	Anthropogenic Pressures	Unknown
IE_WE_G_0044	Drumcliff-Strandhill	Review	Anthropogenic Pressures	Unknown
IE_WE_G_0048	Collooney	Review	Anthropogenic Pressures	Unknown

Further Characterisation Actions

The following further characterisation actions have been identified. These are necessary to help understand more fully issues in the subcatchment and their likely cause.

Code	Name	Action	Responsible Organisation
IE_WE_35K420630	KNAPPAGH (Sligo)_010	IA3 Determination of Water Quality (unassigned waterbody)	Sligo County Council
IE_WE_35K420630	KNAPPAGH (Sligo)_010	IA6 Multiple Sources in Large Urban Area	Sligo County Council
IE_WE_35K430740	KNOCKNAHUR_010	IA3 Determination of Water Quality (unassigned waterbody)	Sligo County Council

GW 2013-2018

▾ Overall Groundwater Status	Good	
▾ Quantitative Groundwater Status	Good	
Saline (or Other) Intrusions Test	Good	
Impact of Groundwater on Surface Water Ecological/Quantitative Status Test	Good	
Groundwater Dependent Ecosystems (GWDTE) - Quantitative Assessment Test	Good	
Water Balance Test	Good	
▾ Chemical Groundwater Status	Good	
Saline (or Other) Intrusions Test	Good	
Impact of Groundwater on Surface Water Ecological/Chemical Status Test	Good	
Groundwater Dependent Ecosystems (GWDTE) - Chemical Assessment Test	Good	
Drinking Water Protected Area Test	Good	
General Chemical Assessment Test	Good	

SW 2013-2018

▼ Ecological Status or Potential	Moderate	
▼ Biological Status or Potential	Moderate	
Phytoplankton Status or Potential	Moderate	
▼ Other Aquatic Flora Status or Potential	Good	
Angiosperm Status or Potential	Good	
Invertebrate Status or Potential	Good	
Hydromorphological Conditions	Moderate	
▼ Supporting Chemistry Conditions	High	
▼ General Conditions	High	
▼ Oxygenation Conditions	High	
Dissolved Oxygen (% Sat)	High	
Other determinand for oxygenation conditions	High	
▼ Nutrient Conditions	High	
Other determinand for nutrient conditions	High	
▼ Phosphorous Conditions	High	
Orthophosphate	High	

Appendix 5 Prioritisation of water bodies with Natura 2000 site qualifying interests

SAC Name	Relevant Qualifying interests	Target status	Water body type	Water bodies	Status (risk)	Prioritise?	Code	Survey data?
Boleybrack Mountain SAC 002032	Potential 3160	High/Good?	Lake	Lackagh	Unassigned (NAR)	No	IE_WE_35_96	Yes
			Lake	Kip	Unassigned (NAR)	No	IE_WE_35_98	Yes
Ballysadare Bay SAC 000622	2190	Good GW level	Groundwater	Drumcliff-Strandhill	Good (R)	No	IE_WE_G_0044	Yes
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627	7220	Good GW level	Groundwater	Rosses Point	Good (NAR)	No	IE_WE_G_0053	Yes
Lough Gill SAC 001976	3150	Good	Lake	Gill SO	Poor (AT RISK)	Yes	IE_WE_35_158	No
	1106	Good	Lake	Gill SO	Poor (AT RISK)	Yes	IE_WE_35_158	No
			River	Bonnet_010	Good (NAR)	No	IE_WE_35B060050	No
			River	Bonnet_020	Good (AT RISK - HES obj)	No	IE_WE_35B060100	No
			River	Bonnet_030	Good (NAR)	No	IE_WE_35B060200	No
			River	Bonnet_040	Good (NAR)	No	IE_WE_35B060400	No
			River	Bonnet_050	Moderate (R)	Yes	IE_WE_35B0604630	No
	1092	At least Moderate	River	Bonnet_010	Good (NAR)	No	IE_WE_35B060050	No
			River	Bonnet_020	Good (AT RISK - HES obj)	No	IE_WE_35B060100	No
			River	Bonnet_030	Good (NAR)	No	IE_WE_35B060200	No
			River	Bonnet_040	Good (NAR)	No	IE_WE_35B060400	No
			River	Bonnet_050	Moderate (R)	No	IE_WE_35B0604630	No
			River	Shanvaus_010	Good (AT RISK - HES obj)	No	IE_WE_35S011100	No
			River	Killanummery_020	High (NAR - HES obj)	No	IE_WE_35K030900	No
			River	Garavogue_010	Poor (AT RISK)	Yes	IE_WE_35G010200	No
			River	Owenmore (Manorhamilton_010)	Good (AT RISK)	No	IE_WE_35O080220	No
			River	Owenmore (Manorhamilton_020)	Good (NAR)	No	IE_WE_35O080400	No

Appendix 7 Local Catchment Assessment Categories

Category	Assessment & Measures Evaluation Details
IA1	Further information provision (e.g. from IFI, LAs, EPA)
IA2	Point source desk-based assessment
IA3	Assessment of unassigned status water bodies, requiring field visit(s)
IA4	Regulated point sources, requiring field visit/s
IA5	Stream (catchment) walk to evaluate multiple sources in a defined (1 km) river stretch (used as the basis for estimating resource requirements)
IA6	Stream (catchment) walk in urban areas
IA7	Stream (catchment) walk along >1 km river stretches
IA8	Stream (catchment) walk along high ecological status (HES) objective rivers
IA9	Lakes assessment, requiring field visits
IA10	Groundwater assessments, requiring field visits

APPENDIX H

Site Name: Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

SITE SYNOPSIS Version date: 11/02/2016

Site Code: 000627

This large coastal site extends from Cullamore in the north-west to Killaspug in the south-west, and from Sligo town in the south-east to Drumcliff village in the north-east. It encompasses two large, shallow bays, Drumcliff Bay and Sligo Harbour, and both Ardboline and Horse Island. Sand dunes and sand hills at Rosses Point, Killaspug, Yellow Strand and Coney Island are included, as are grasslands at Ballintemple and Ballygilgan (Lissadell), along with a variety of other habitats such as woodland, saltmarsh, sandy beaches, boulder beaches, shingle, fen, freshwater marshes, rocky sea cliffs and lakes. The site is largely underlain by Carboniferous limestone, but acidic rocks are also found on the Rosses Point peninsula. At Serpent Rock in the north-western section of the site the most complete section of the north-western Carboniferous strata is exposed. Here are found an excellent series of fossilised corals which, in some strata, stand out from the rock matrix. 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):

[1130] Estuaries

[1140] Tidal Mudflats and Sandflats

[2110] Embryonic Shifting Dunes

[2120] Marram Dunes (White Dunes)

[2130] Fixed Dunes (Grey Dunes)*

[5130] Juniper Scrub

[6210] Orchid-rich Calcareous Grassland*

[7220] Petrifying Springs*

[1014] Narrow-mouthed Whorl Snail (*Vertigo angustior*)

[1095] Sea Lamprey (*Petromyzon marinus*)

[1099] River Lamprey (*Lampetra fluviatilis*)

[1365] Common (Harbour) Seal (*Phoca vitulina*)

The dominant habitats on the site are estuaries and intertidal sand and mud flats. Sligo Harbour receives the waters of the Garavogue River, which flows from Lough Gill, while Drumcliff Bay receives the Drumcliff River which flows from Glencar Lough. At low tide extensive areas of intertidal flats are exposed in both of these sheltered estuarine bays. The intertidal flats support a diverse macrofauna, with invertebrate species such as lugworm (*Arenicola marina*), common cockle (*Cerastoderma edul*e), sand mason worm (*Lanice conchilega*), Baltic tellin (*Macoma balthica*), spire shell (*Hydrobia ulvae*) and common mussel (*Mytilus edulis*) being frequent. Of particular note is the presence of the eelgrasses *Zostera noltii* and *Z. angustifolia* beds in both bays. Areas of saltmarsh fringe both bays in places. Sand dune habitats are rare and threatened in Europe and three types are found in this site - embryonic dunes, Marram (*Ammophila arenaria*) dunes and fixed dunes. Embryonic dunes, with characteristic species including Sand Couch (*Elymus farctus*), occur at the southern end of the sand spit at Rosses Point. Shifting Marram dunes are found in a number of locations, including Rosses Point, Strandhill, Coney Island and Yellow Strand. In the latter three areas, the areas of shifting dunes are linked at least to some extend to recent disturbance (e.g. erosion, storm breaches, etc.). Fixed dune grassland is found behind Yellow Strand, and the main species are Sand Sedge (*Carex arenaria*) and Smooth Meadow-grass (*Poa pratensis*), with associated species including Lady's Bedstraw (*Galium verum*), Mouse-ear Hawkweed

(*Hieracium pilosella*), Common Milkwort (*Polygala vulgaris*), Common Dog-violet (*Viola riviniana*), Mountain Everlasting (*Antennaria dioica*), Common Spotted-orchid (*Dactylorhiza fuchsii*), Early Marsh-orchid (*D. incarnata*), Frog Orchid (*Coeloglossum viride*) and Autumn Lady's-tresses (*Spiranthes spiralis*). Some areas of fixed dune at the site are suffering from under-grazing (e.g. north of Strandhill), and have a rank vegetation dominated by Marram, with species such as Red Fescue (*Festuca rubra*), Creeping Willow (*Salix repens*), Daisy (*Bellis perennis*) and Wild Thyme (*Thymus praecox*) also occurring. A relatively species-poor example of the habitat is found at Rosses Point, but typical species like Marram, Red Fescue, Lady's Bedstraw, Harebell (*Campanula rotundifolia*), Kidney Vetch (*Anthyllis vulneraria*) and Common Mouse-ear (*Cerastium fontanum*) do occur here. An area with Juniper (*Juniperus communis*) scrub is found on a gravel hill with species-rich fixed dune vegetation. Other species present in this area include Marram, Autumn Gentian (*Gentianella amarella*), Red Fescue, Lady's Bedstraw, Common Bird's-foot-trefoil, Harebell, Yellow-wort (*Blackstonia perfoliata*), Thyme-leaved Sandwort (*Arenaria serpyllifolia*), Common Whitlowgrass (*Erophila verna*), Hoary Whitlowgrass (*Draba incana*), Devil's-bit Scabious (*Succisa pratensis*) and Early Hair-grass (*Aira praecox*). An area of approximately 3.7 hectares of Orchid-rich Calcareous Grassland, a habitat listed with priority status on Annex I of the E.U. Habitats Directive, is reported to occur near Rosses Point, according to the Irish Semi-natural Grasslands Survey, 2010. Wetlands on the site include Doonweelin Lake, a freshwater lake on the Rosses Point peninsula, which supports interesting vegetation communities that reflect the juxtaposition of the underlying acidic and basic rocks. Ardtermon Fen, a small, floristically-rich area of freshwater marsh, swamp, wet grassland and fen is situated at the back of the Yellow Strand sand hills. The site includes small areas of Hazel (*Corylus avellana*) and Ash (*Fraxinus excelsior*) woodland on limestone (e.g. Cummeen Wood), and several other stands of mixed woodland and wet willow (*Salix* spp.) woodland (as at Ardtermon Fen). Cliff-top grassland is common in the north-western part of the site. This is typically dominated by Red Fescue and White Clover (*Trifolium repens*), with associated species including Daisy, Common Bird's-foot-trefoil (*Lotus corniculatus*), plantains (*Plantago coronopus, P. lanceolata* and *P. maritima*), Bulbous Buttercup (*Ranunculus bulbosus*), Common Scurvygrass (*Cochlearia officinalis*), Field Wood-rush (*Luzula campestris*) and Spring Sedge (*Carex caryophyllea*). The site has a good example of petrifying springs with tufa formations, with several species of bryophyte typical of the *Cratoneurion*. The springs occur along seepage zones in clay sea cliffs on the northern side of Sligo Harbour. The site has a very rich and diverse flora, on account of the wide variety of habitats found, and the presence of both basic and acidic substrates. Several rare, Red Data Book species have been recorded from the site, including Rough Poppy (*Papaver hybridum*) which is also listed under the Flora (Protection) Order, 2015, Hoary Whitlowgrass and Yellow Saxifrage (*Saxifraga aizoides*). Both Drumcliff Bay and Cummeen Strand are important for the large numbers of waterfowl which use them in autumn/winter, including Ringed Plover, Redshank, Lapwing, Knot, Bar-tailed Godwit, Oystercatcher, Curlew, Golden Plover, Dunlin, Turnstone, Brent Goose, Grey Heron, Teal, Wigeon, Mallard, Shelduck and Red-breasted Merganser. The fields at Lissadell and Ballintemple support one of the largest populations of Barnacle Goose in the country (*c.* 2,000 in winters of 1995/96 and 1996/97). Both Drumcliff Bay and Cummeen Strand have been designated as Special Protection Areas under the E.U. Birds Directive. The important feeding site for Barnacle Goose at Lissadell is a Statutory Nature Reserve. The islands in the north-western section of the site hold important seabird colonies. A Cormorant colony of national importance occurs on Ardboline and Horse Islands, with a total of 261 pairs in 1998. Herring Gull and Great Black-backed Gull also breed on both islands. Common Tern formerly bred on both islands. The islands are also used by Barnacle

Goose from the adjacent mainland, which roost or seek refuge here. The low sea cliffs on the adjacent mainland at Ballyconnell and Roskeeragh Points also support small numbers of seabirds, and both Black Guillemot and Fulmar nest there. Choughs feed in the sandy/grassy areas of the site and one pair is known to nest. Several of the bird species that use the site are listed on Annex I of the E.U. Birds Directive, i.e. Barnacle Goose, Chough, Golden Plover and Bar-tailed Godwit. At least five species listed on Annex II of the E.U. Habitats Directive are found within this site. Drumcliff Bay is important for the presence of a breeding population of Common Seal. Ardboline and Horse Islands on the western side of the site are also important as haul-out areas for this species. A minimum population of 12–15 individuals was estimated from counts made in various month in 2007 and 2008. Lamprey and River Lamprey have been recorded in the Garavogue River, and River Lamprey are also known from further upstream in the tributaries of Lough Gill. The Marsh Fritillary butterfly is found at Rosses Point, while the rare snail *Vertigo angustior* has recently been recorded from sand dunes at Killaspugbrone. Cummeen Strand/Drumcliff Bay (Sligo Bay) is an important site of high conservation significance, which includes a wide variety of habitat types, including several listed on Annex I of the E.U. Habitats Directive, several species listed on Annex II of this Directive, large and important populations of waterfowl and seabirds, and several rare plant species.

SITE NAME: CUMMEEN STRAND SPA

SITE SYNOPSIS Version Date: 7/7/14

SITE CODE: 004035

Cummeen Strand is a large shallow bay stretching from Sligo Town westwards to Coney Island. It is one of three estuarine bays within Sligo Bay and is situated between Drumcliff Bay to the north and Ballysadare Bay to the south. The Garavogue River flows into the bay and forms a permanent channel. At low tide, extensive sand and mud flats are exposed. These support a diverse macro-invertebrate fauna which provides the main food supply for the wintering waterfowl. Invertebrate species such as Lugworm (*Arenicola marina*), Ragworm (*Hediste diversicolor*), Cockles (*Cerastoderma edul*e), Sand Mason (*Lanice conchilega*), Baltic Tellin (*Macoma balthica*), Spire Shell (*Hydrobia ulvae*) and Mussels (*Mytilus edulis*) are frequent. Of particular note is the presence of eelgrass (*Zostera noltii* and *Z. angustifolia*) beds, which provide a valuable food stock for herbivorous wildfowl. The estuarine and intertidal flat habitats are of conservation significance and are listed on Annex I of the E.U. Habitats Directive. Areas of salt marsh fringe the bay in places and provide roosting sites for birds during the high tide periods. Sand dunes occur at Killaspug Point and Coney Island, with a shingle spit at Standalone Point near Sligo Town. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Oystercatcher and Redshank. 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. Cummeen Strand supports important concentrations of wintering waterfowl, including an internationally important Light-bellied Brent Goose flock (223) and nationally important populations of Oystercatcher (680) and Redshank (408). Other species occurring include Shelduck (86), Wigeon (149), Teal (54), Mallard (145), Red-breasted Merganser (15), Golden Plover (428), Lapwing (695), Knot (165), Sanderling (14), Dunlin (539), Bar-tailed Godwit (85), Curlew (430), Greenshank (13) and Turnstone (62) - all figures are mean peak counts for 4

of the 5 winters between 1995/96 and 1999/2000. Whooper Swan (7) also uses the site, though not regularly. Cummeen Strand SPA is of high ornithological importance with one species, Light-bellied Brent Goose, occurring in numbers of international importance. In addition, the site supports nationally important populations of a further two species. The regular presence of Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive. The site is also important as a component of the much larger Sligo Bay complex. Cummeen Strand is a Ramsar Convention site.

4.2.2 Site Name Lough Gill SAC

SITE SYNOPSIS Version date: 19/02/2016

Site Code: 001976

This site includes Lough Gill, Doon Lough to the north-east, the Bonet River (as far as, but not including, Glenade Lough), and a stretch of the Owenmore River near Manorhamilton in Co. Leitrim. Lough Gill itself, 2 km east of Sligo town, lies at a geological junction of ancient metamorphic rocks which produce acid groundwater, and limestone which dissolves in the groundwater. 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):

[3150] Natural Eutrophic Lakes

[6210] Orchid-rich Calcareous Grassland*

[91A0] Old Oak Woodlands

[91E0] Alluvial Forests*

[1092] White-clawed Crayfish (*Austropotamobius pallipes*)

[1095] Sea Lamprey (*Petromyzon marinus*)

[1096] Brook Lamprey (*Lampetra planeri*)

[1099] River Lamprey (*Lampetra fluviatilis*)

[1106] Atlantic Salmon (*Salmo salar*)

[1355] Otter (*Lutra lutra*)

Lough Gill is a large lake, being 8 km long, and has steep limestone shores and underwater cliffs. It is over 20 m deep in places. The lake appears to be naturally eutrophic. The aquatic macrophyte flora is very limited, probably due to the rapid increase in depth around most of the margin. Species such as pondweeds (*Potamogeton* spp.) are present, as well as Shoreweed (*Littorella uniflora*). Where the lake shore has a shallow gradient, some swamp vegetation occurs, mainly dominated by Common Reed (*Phragmites australis*), with Common Club-rush (*Scirpus lacustris*) and sedges (*Carex* spp.).

The Old Oak Woodlands within this site are dominated by oak (*Quercus* spp.), Rowan (*Sorbus aucuparia*) and willows (*Salix* spp.). A number of interesting tree species occur. Strawberry Tree (*Arbutus unedo*) is found in its most northerly site in the world. Yew (*Taxus baccata*) occurs in abundance. Bird Cherry (*Prunus padus*), a Red Data Book species, is also found, as is the nationally scarce Rock Whitebeam (*Sorbus rupicola*). Some areas of conifer plantation occur in association with these woodlands. There is a fringe of deciduous woodland along most of the length of the Garvoge River. In parts it is dense and impenetrable, with a very wet marshy underlayer. Some areas are dominated by Rusty Willow (*Salix cinerea* subsp. *oleifolia*), with Alder (*Alnus glutinosa*) also occurring commonly. Other tree species present include Goat Willow (*Salix caprea*), Hazel (*Corylus avellana*), Rhododendron (*Rhododendron ponticum*) and Cherry Laurel (*Prunus laurocerasus*). Both of the latter species are invasive aliens. In the understorey, species such as Guelder-rose (*Viburnum opulus*), Gipsywort (*Lycopus europaeus*) and Skullcap (*Scutellaria galericulata*) are found. Reedswamp is also common along the river. Another area of alluvial wet woodland is found at the mouth of the Bonet River. Here there is dense willow (*Salix* sp.) scrub, along with Reed Canary-grass (*Phalaris arundinacea*), and also areas where Alder and Goat Willow are dominant. Areas of unimproved wet and dry grassland also occur within the site, the former particularly by the lake and the latter well developed in the north-east of the site and in the vicinity of O'Rourke's Table. Orchid-rich Calcareous Grassland, a priority habitat listed on Annex I of the E.U. Habitats Directive, has been reported from Clogher Beg, according to the Irish Semi-natural Grasslands Survey, 2010. Heath-covered hillsides above the woods are dominated by Heather (*Calluna vulgaris*). The site also supports several rare plant species, including Yellow Bird's-nest (*Monotropa hypopitys*), the lady's-mantle species *Alchemilla glaucescens*, Ivy Broomrape (*Orobanche hederae*), Black Bryony (*Tamus communis*), Intermediate Wintergreen (*Pyrola media*) and Bird's-nest Orchid (*Neottia nidus-avis*). There is also an unconfirmed record for Melancholy Thistle (*Cirsium helenioides*) from the eastern side of the site. Both the woods and the mountains are used by a large herd of Fallow Deer. The site is of considerable importance for the presence of four Red Data

Book fish species that are listed on Annex II of the E.U. Habitats Directive - Brook Lamprey (*Lampetra planeri*), River Lamprey (*Lampetra fluviatilis*), Sea Lamprey (*Petromyzon marinus*) and Atlantic Salmon (*Salmo salar*). The Lough Gill system gets a very early run of spring salmon, while the Bonet holds stocks of salmon from spring right through to the end of the season. White-clawed Crayfish (*Austropotamobius pallipes*), Otter and Pine Marten are well established on this site, the first two are both Annex II species. The woodlands have a fauna which includes several rare snail species. Lough Gill supports low numbers of wintering waterfowl, mostly Mallard (<150), Tufted Duck (20-30) and Goldeneye (<20). A small colony of Common Tern breed on the islands (20 pairs in 1993), while Kingfisher are found on the lake and rivers. Both of these species are listed on Annex I of the E.U. Birds Directive. A colony of Black-headed Gulls (63 pairs in 1992) occurs with the terns. The woods support a good diversity of bird species including Jay, Woodcock and Blackcap. The site is of importance for four habitats listed on Annex I of the E.U. Habitats Directive, including two with priority status. It is also noted for the high number of rare or scarce animal and plant species.

Conservation Objectives: 23/03/2021

4.2.3 Site Name: Drumcliff Bay

SITE SYNOPSIS Version date: 25/03/14

Site Code: 004013

Drumcliff Bay, Co. Sligo is the most northerly of Sligo Bay's three estuarine inlets. The bay comprises an inner area of sheltered estuarine habitat and an outer area of shallow seawater. It extends 9 km east to west from Drumcliff village to Raghly Point. Drumcliff Bay is the estuary of the Drumcliff River, a substantial river flowing from Glencar Lough to the east. The inner part of Drumcliff Bay is sheltered by a sandy/grassy peninsula extending north from Rosses Point. The northern part of the bay is fringed by fine sandy beaches - Ballygilgan Strand, Lissadell Strand and Ardtermon Strand. Salt marsh occurs in the most sheltered areas and at low tide, extensive inter-tidal flats are exposed. A bed of Dwarf Eelgrass (Zostera noltii) occurs near the south-eastern corner of the bay. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Sanderling and Bar-tailed Godwit. 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. Drumcliff Bay SPA is of importance as it supports nationally important populations of two species of wintering waterfowl: Sanderling (237) and Bar-tailed Godwit (336) – all figures are four year mean peaks for four of the five winters between 1995/96 and 1999/2000. Other species that occur regularly include Whooper Swan (45), Light-bellied Brent Goose (74), Shelduck (75), Wigeon (138), Teal (57), Long-tailed Duck (14), Redbreasted Merganser (20), Great Northern Diver (13), Oystercatcher (356), Ringed Plover (139), Lapwing (155), Knot (107), Dunlin (559), Curlew (177) and Redshank (138). Drumcliff Bay SPA is of national importance for its winter populations of Sanderling and Bar-tailed Godwit, and the site supports a good diversity of other waterfowl species. Of note is that three of the species which occur regularly (Whooper Swan, Great Northern Diver and Bar-tailed Godwit) are listed on Annex I of the E.U. Birds Directive. Part of Drumcliff Bay SPA is a Wildfowl Sanctuary

Conservation Objectives: 04/09/2013

4.2.4 Site Name: KNOCKNAREA MOUNTAIN & GLEN pNHA
SITE SYNOPSIS Version date: N/A
SITE CODE 001670

No site synopsis or conservation measures available.
The status of the pNHA's has not being altered by the NPWS update on the 17/09/10. As a result of this the pNHA's does not have a statutory designation. Protection of such areas is restricted to (1) REPS plans which require conservation of pNHA's and operate for a period of five years, (2) Forest service requirements for NPWS approval prior to payment of afforestation grants and (3) recognition of the ecological value of pNHA's by planning and licensing authorities.

Conservation Objectives: None available

4.2.5 Site Name: Ballysadare Bay SPA / Ballysadare Bay SAC
SITE SYNOPSIS Version date: **4.09.2013**
Site Code: 004129 / 000622

Ballysadare Bay extends for about 10 km westwards from the town of Ballysadare, Co. Sligo, and is the most southerly of three inlets of the larger Sligo Bay. The estuarine channel of the Ballysadare River winds its way through the bay, finally reaching the open sea near the spit at Strandhill dunes. The bay is underlain by sedimentary rocks of limestones, sandstones and shales, which are exposed as low cliffs and small sections of bedrock shore at several locations. Knocknarea Mountain overlooks the site. 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):
[1130] Estuaries
[1140] Tidal Mudflats and Sandflats
[2110] Embryonic Shifting Dunes
[2120] Marram Dunes (White Dunes)
[2130] Fixed Dunes (Grey Dunes)*
[2190] Humid Dune Slacks
[1014] Narrow-mouthed Whorl Snail (*Vertigo angustior*)
[1365] Common (Harbour) Seal (*Phoca vitulina*)

Ballysadare Bay contains extensive intertidal sand and mudflats, approximately 1,500 ha in extent overall. The mud provides an abundance of food for wildfowl, in the form of colonising plants such as Eelgrass (*Zostera marina*) and Tasselweed (*Ruppia maritima*), as well as numerous species of invertebrates on which both wildfowl and waders feed. Well-developed salt marshes occur at several locations around the bay. Typical species of these areas are Sea Rush (*Juncus maritimus*), Saltmarsh Rush (*Juncus gerardi*), Creeping Bent (*Agrostis stolonifera*) and Parsley Water-dropwort (*Oenanthe lachenalii*). In hollows and ditches, Sea Arrowgrass (*Triglochin maritima*), Sea Club-rush

(*Scirpus maritimus*), Sea Milkwort (*Glaux maritima*), Thrift (*Armeria maritima*), Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*) and Red Fescue (*Festuca rubra*) occur. Particularly interesting species found on the salt marshes are Flowering Rush (*Butomus umbellatus*), Slender Spike-rush (*Eleocharis uniglumis*) and Hard Grass (*Parapholis strigosa*). There is a large sand dune system at Strandhill which has been relatively undisturbed by grazers. The dune system is highly dynamic, with the tip of the peninsula actively growing and displaying a good, though limited, example of embryonic shifting dunes. The characteristic species found in this habitat type include Sand Couch (*Elymus farctus*), Spear-leaved Orache (*Atriplex prostrata*) and Sea Rocket (*Cakile maritima*). Shifting marram dunes are fairly extensive in the area also, occurring along the entire seaward side of the spit, and they are especially active towards the tip. While Marram (*Ammophila arenaria*) is the dominant species, Colt's-foot (*Tussilago farfara*), Red Goosefoot (*Chenopodium rubrum*) and Cat's-ear (*Hypochoeris radicata*) can also be found. The seaward dunes reach considerable heights (up to 20 m). They are very steep on the seaward edge, but to the east of this there is an undulating expanse of dune hills. The largest proportion of the dune system is made up of fixed dunes, a priority habitat listed on Annex I of the E.U. Habitats Directive. Once one moves landward, in from the Marram dunes, there is a low-growing, closed sward which is particularly species-rich, with Field Wood-rush (*Luzula campestris*), Kidney Vetch (*Anthyllis vulneraria*), Bee Orchid (*Ophrys apifera*), Oxeye Daisy (*Leucanthemum vulgare*), Common Centuary (*Centaurium erythraea*), Wild Thyme (*Thymus praecox*), Harebell (*Campanula rotundifolia*), Burnet Rose (*Rosa pimpinellifolia*), Carline Thistle (*Carlina vulgaris*) and Fairy Flax (*Linum catharticum*). The fixed dune areas are also rich in bryophytes and lichens. Moss species include *Tortula ruraliformis, Homalothecium lutescens, Ditrichum flexicaule* and *Hypnum cupressiforme,* while lichens (*Peltigera* spp. and *Cladonia* spp.) are also present. Some humid dune slacks occur amongst the fixed dunes. Characteristic species include Creeping Willow (*Salix repens*), Carnation Sedge (*Carex panicea*), Jointed Rush (*Juncus articulatus*) and the relatively uncommon Marsh Helleborine (*Epipactis palustris*). A range of habitats fringe the bay, adding diversity to the site as a whole. Some of these areas have particular features of interest, e.g. the old oyster farm at Tanrego is important for waterfowl, while the uncommon plant species Ivy Broomrape (*Orobanche hederae*) occurs in scrubland adjacent to the bay. Two animals listed on Annex II of the E.U. Habitats Directive occur within the site: The Bay supports a colony of Common Seal (maximum count of 257 in the all-Ireland survey of 2003), and the rare snail, *Vertigo angustior*, occurs in dune slacks and hollows in the dunes at Strandhill.

Ballysadare Bay is important for a range of waterfowl species in autumn and winter and is part of the larger Sligo Bay complex. Brent Goose occur in internationally important numbers, while a further seven species have populations of national importance. These are as follows, with numbers referring to the average peaks over winters 1994/95 - 1997/98: Brent Goose (259), Red-breasted Merganser (48), Oystercatcher (796), Grey Plover (231), Dunlin (1129), Bar-tailed Godwit (431), Redshank (481) and Greenshank (24). The presence of Bar-tailed Godwit, and also smaller numbers of Golden Plover (66), is of particular note as these species are listed on Annex I of the E.U. Birds Directive.

The bay is little-used for fishing or boating, but marsh shooting is common in the upper reaches. Aquaculture is little-developed in this bay compared to nearby Sligo and Drumcliff Bays. Dune systems are sensitive to developments which alter their structure. Grazing is also a critical factor; the correct level of grazing maintains an open, species-rich sward, but the presence of too many grazers causes damage to the vegetation and may exacerbate dune erosion. Agricultural improvement, and particularly the application of fertilisers, threatens dune vegetation, leading to the

eventual loss of species diversity. Ballysadare Bay is of high ecological value for its range of good quality coastal habitats. Actively developing dune systems are rare on the west coast and the sand dune system at Strandhill is of particular interest as a large and intact example of a habitat type which is under general threat from development. The rarity of intact dune systems is recognised in the listing of fixed dunes as a priority habitat on Annex I of the E.U. Habitats Directive. The salt marshes at Ballysadare Bay are relatively good examples for the west coast, and that at Abbeytown is unusual as it is forming on quarry waste. The presence of two Annex II species within the site adds further importance. Furthermore, the bay supports nationally important numbers of waterfowl.

Conservation Objectives: 20/11/2013

SITE SYNOPSIS Version date 08/02/2010:
Site Name: Ballysadare Bay SPA
Site Code: 004129

Ballysadare Bay extends for approximately 10 km westwards from the town of Ballysadare, County Sligo. It is the most southerly of three inlets that form the eastern part of the larger Sligo Bay complex. The estuarine channel of the Ballysadare River winds its way through the bay, finally reaching the open sea near the Strandhill Dunes sand spit. The bay is underlain by sedimentary rocks of limestones, sandstones and shales which are exposed as low cliffs and small sections of bedrock shore at several locations. The bay contains extensive intertidal sand and mudflats. The flats support good populations of macro-invertebrates which are important food items for wintering waterfowl. Common species present include the polychaete worms *Hediste diversicolor*, *Arenicola marina*, *Lanice conchilega* and *Nepthys hombergii*, and the bivalves *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. Also present on the intertidal flats are the vascular plants Eelgrass (*Zostera marina*) and Beaked Tasselweed (*Ruppia maritima*), which provide food for herbivorous wildfowl. Well-developed salt marshes, which provide roosting sites for birds at high tide, occur at several locations around the bay. The sandy beaches around the Strandhill peninsula are used by roosting birds. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Grey Plover, Dunlin, Bar-tailed Godwit and Redshank. 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. Ballysadare Bay is important for a range of waterfowl species in autumn and winter. The population of Light-bellied Brent Goose (188) is of international importance (all figures are mean peak counts for four winters in the period 1995/96 to 1999/2000). The populations of four other species are of national importance, i.e. Grey Plover (70), Dunlin (1,420), Bar-tailed Godwit (251) and Redshank (435). A range of other species occurs, including Whooper Swan (15), Shelduck (55), Wigeon (617), Teal (179), Mallard (304), Goldeneye (17), Red-breasted Merganser (26), Cormorant (43), Oystercatcher (518), Ringed Plover (96), Golden Plover (301), Lapwing (467), Curlew (508), Greenshank (22), Turnstone (40), Black-headed Gull (261) and Common Gull (203). Ballysadare Bay SPA is of high ornithological importance - it supports a Light-bellied Brent Goose population of international importance as well as nationally important populations of four other wintering waterfowl species. The presence of Bar-tailed Godwit, Golden Plover

and Whooper Swan is of particular note as these species are listed on Annex I of the E.U. Birds Directive. The site forms an important component of the larger Sligo Bay complex.

Conservation Objectives: 25/10/2013

4.2.6 Site Name: SLIGO/LEITRIM UPLANDS SPA

SITE SYNOPSIS Version date: 30/05/15

Site Code: 004187

The Sligo/Leitrim Uplands SPA is located north-east of the town of Sligo in the mountain ranges of Ben Bulben, Arroo and Cope's Mountain/Crockauns. The site straddles the Co. Sligo/Co. Leitrim border. The site includes six separate lengths of cliffs in these ranges, including those of King's Mountain, Benbulbin, Benwiskin, Gleniff, Truskmore, Tievebaun, Glenade, Glencar, Arroo Mountain and Cope's Mountain/Crockauns. The upper boundary of the site is taken to be 50 m from the cliff top except in the King's Mountain area, above Glencar Lough, where an expanse of suitable foraging habitat c. 200 m from the cliff top is included. These uplands are formed of Carboniferous limestone, capped in places by shales. They stand on a high plateau, 300-450 m above the surrounding countryside, and the edges form lofty cliffs from 15 to 300 m in height. Areas of scree occur below the cliffs on slopes of 40-50°. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Chough and Peregrine. Inland cliffs and scree slopes are the predominant habitats of the site. Other habitats present on the site include heath, blanket bog, grassland, scrub, woodland and streams. The cliffs hold an internationally important population of breeding Chough (14 breeding pairs recorded from the site in the 1992 survey and 15 in the 2002/03 survey). Chough forage mostly in unimproved, closely grazed grassland and flocks of up to 29 birds have been seen. The land on the plateau is, for the most part, vegetated by heath and blanket bog which is largely unsuitable habitat for Chough. The suitable grassland occurs mainly on the steep slopes below the cliffs. The extensive uplands on the plateau provide excellent habitat for Peregrine; the cliffs are ideal nesting sites and four pairs were recorded here in 2002. Small numbers of Red Grouse are also known to occur within the site. The Sligo/Leitrim Uplands SPA is of considerable ornithological significance, being a site of international importance for Chough and of national importance for Peregrine; both species are listed on Annex I of the E.U. Birds Directive.

Conservation Objectives: 23/03/21

4.2.7 Site Name: Unshin River

SITE SYNOPSIS Version date: 11/02/2016

Site Code: 001898

The Unshin River runs from Lough Arrow north to Ballysadare Bay, Co. Sligo. The river is largely undrained and unaltered along much of its course. The marginal vegetation associated with the river is also included in the site, along with other semi-natural habitats adjacent to the river (included in order to enhance its protection). Many of these habitat types are interesting and of conservation value in their own right. Other watercourses included within the site are the Owenboy/ Owenbeg and a number of smaller tributaries. The Unshin River flows across a number of geological boundaries between sandstone, shales and limestone. This results in unusual physico-chemical qualities which in turn are reflected in the rich and varied plant and animal populations.

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. [3260] Floating River Vegetation

[6210] Orchid-rich Calcareous Grassland*

[6410] Molinia Meadows

[91E0] Alluvial Forests*

[1106] Atlantic Salmon (Salmo salar)

[1355] Otter (Lutra lutra)

Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

The Unshin River supports an excellent example of floating river vegetation. The diversity of aquatic macrophytes is exceptional, and to a certain extent the unusual combinations and richness of species can be accounted for by the good quality water being discharged from Lough Arrow upstream. The lake also imparts a stabilising influence on the flow regime and provides a source of lacustrine species – for example, Long-stalked Pondweed (Potamogeton praelongus). Plant species present which indicate base-rich conditions include Lesser Water-parsnip (Berula erecta), Blunt-fruited Water-starwort (Callitriche obtusangula), Fan-leaved Water-crowfoot (Ranunculus circinatus) and the internationally rare River Water-dropwort (Oenanthe fluviatilis). Species such as Lesser Marshwort (Apium inundatum), normally associated with more acidic peat pools, also occur. Fen and floating mire communities are represented by Bogbean (Menyanthes trifoliata), Cowbane (Cicuta virosa), Yellow Loosestrife (Lysimachia vulgaris) and Water Avens (Geum rivale). A rare and unusual alga, Nostoc parmelioides, is also present. There are a number of areas of woodland, many of which flood, included within the site. These wet alluvial woodlands are found on water-logged soils and species such as Alder (Alnus glutinosa), Ash (Fraxinus excelsior), willows (Salix spp.), Pedunculate Oak (Quercus robur) and birch (Betula spp.) are common. Occasionally, Lime (Tilia sp.) and Horse-chestnut (Aesculus hippocastanum) are found also. The ground flora is diverse in places, and species such as Meadowsweet (Filipendula ulmaria), Wild Angelica (Angelica sylvestris), Lesser Celandine (Ranunculus ficaria), Wood Anemone (Anemone nemorosa), Yellow Iris (Iris pseudacorus), Bracken (Pteridium aquilinum), Reed Canary-grass (Phalaris arundinacea), Soft Rush (Juncus effusus), Common Valerian (Valeriana officinalis), Bramble (Rubus fruticosus agg.), Enchanter's-nightshade (Circaea lutetiana), Purple Loosestrife (Lythrum salicaria), Golden Saxifrage (Chrysosplenium oppositifolium), Greater Tussock-sedge (Carex paniculata), Remote Sedge (Carex remota), Bottle Sedge (C. rostrata), Common Nettle (Urtica dioica), Hart's-tongue (Phyllitis scolopendrium), Broad Buckler-fern (Dryopteris dilatata) and Lady-fern (Athyrium filix-femina) are all found. A number of non-native shrub species, some of which are invasive, are found: Snowberry (Symphoricarpos albus), Rhododendron (Rhododendron ponticum) and Cherry Laurel (Prunus laurocerasus). The non-native herbs Japanese Knotweed (Reynoutria japonica) and Giant Hogweed (Heracleum mantegazzianum) have also been recorded. Areas of grassland,

ascribable to the E.U. Habitats Directive Annex I types: Orchidrich Calcareous Grassland and Molinia Meadows, have been reported at Cloonmacduff, according to the Irish Semi-natural Grasslands Survey, 2010. There are also extensive wetlands within this site, and one area contains the Red Data Book plant Swamp Meadow-grass (Poa palustris). The Unshin and its tributaries form a very important system for Atlantic Salmon, a species that is listed on Annex II of the E.U. Habitats Directive. The Owenboy/ Owenbeg river is the principle spawning and nursery tributary for the system's salmon fishery. The Unshin and its tributaries is the most important salmon producing river in Co. Sligo. The system also supports a good population of Trout. The Annex II species Otter has been recorded in and near this site. Two notable bird species which occur along the river are Whooper Swan, which feeds in the wet grasslands that flank the river, and Kingfisher. Both are listed on Annex I of the E.U. Birds Directive. The trophic status of the river increases downstream indicating that some enrichment is taking place. However, the quality of the Unshin River and particularly its aquatic macrophyte communities, make it rare in both an Irish and European context, and it is considered one of the most pristine rivers in the country.

Conservation Objectives: 23/03/2021

4.2.8 SITE NAME: UNION WOOD

SITE SYNOPSIS Version Date: 10/09/2013

SITE CODE: 000638

Union Wood is located on the eastern bank of the Ballysadare River between Ballysadare and Collooney. The site contains an old Oak woodland, a habitat listedon Annex I of the EU Habitats Directive. It is a typical western Oak wood (Blechno-Quercetum) and one of the best remaining in the region. Part of the site consists of fairly pure, open Sessile Oak (Quercus petraea) dominated woodland, mixed with Downy Birch (Betula pubescens), Holly (Ilex aquifolium) and Rowan (Sorbus aucuparia). Hazel (Corylus avellana), Hawthorn (Crataegus monogyna) and Blackthorn (Prunus spinosa) also occur.

The soils of the area are acidic and the ground flora is typical of an acidic wood; Greater Wood-rush (Luzula sylvatica) is abundant, but Bilberry (Vaccinium myrtillus), Wood Sorrel (Oxalis acetosella), Bluebell (Hyacinthoides non-scripta), Hard Fern (Blechnum spicant) and Broad Buckler-fern (Dryopteris dilatata) are present too. Epiphytes are well developed with Polypody (Polypodium vulgare agg.) and numerous lichens occurring.

The presence of an area of heath at Union Rock adds diversity to the site. This hilltop is dominated by Heather (Calluna vulgaris) and has a well developed moss cover (Sphagnum spp. and Hypnum cupressiforme). The conservation significance of the site is reduced by the inter- and under-planting with stands of commercial conifers. Naturalised alien species, such as Beech (Fagus sylvatica) and Sycamore (Acer pseudoplatanus) also occur in places. Of further concern is the presence of Rhododendron (Rhododendron ponticum), which will continue to spread if not controlled.

The wood supports a diverse fauna, including Pine Marten (Martes martes) and Badger (Meles meles), two Red Data Book species, Fox (Vulpes vulpes) and Red Squirrel (Sciurus vulgaris). Reported poor regeneration within the woodland may be due to grazing by a herd of Fallow Deer (Dama dama) which frequent the site. Raven, Kestrel and Sparrowhawk also occur. Two rare flies (Order Diptera) have also been recorded from this area: Chrysogaster virescens and Xylophagus ater. Despite damage from introduced exotic species, Union Wood is an important Oak woodland and one of the largest remaining Oak woodlands in the region.

4.2.9 Site Name: COLGAGH LOUGH pNHA

SITE SYNOPSIS Version date: N/A

Site Code: 001658

No site synopsis or conservation measures available.

The status of the pNHA's has not being altered by the NPWS update on the 17/09/10. As a result of this the pNHA's does not have a statutory designation. Protection of such areas is restricted to (1) REPS plans which require conservation of pNHA's and operate for a period of five years, (2) Forest service requirements for NPWS approval prior to payment of afforestation grants and (3) recognition of the ecological value of pNHA's by planning and licensing authorities

Conservation Objectives: None Available

4.2.10 Site Name: CROCKAUNS/KEELOGYBOY BOGS NHA

SITE SYNOPSIS Version date: 20/01/04

SITE CODE: 002435

Crockauns/Keelogyboy Bogs NHA is an extensive, primarily upland site incorporating large areas of blanket bog, heath, upland grassland and associated habitats. It is located 7 km north-east of Sligo town. The site extends over 6 km east to west and encompasses Cope's, Crockauns and Keelogyboy Mountains and also parts of Hangman's Hill. The range in elevation within the site is between 65 m and 463 m. Bedrock geology is primarily limestone including fossiliferous reef and siliceous limestone. The site consists of a series of relatively flat-topped mountains supporting upland blanket bog, heath, exposed rock and upland grassland. The site margins feature steep to vertical exposed cliffs and limestone scree. A variety of habitats occur on more gentle slopes including lowland blanket bog, wet heath, wet grassland, woodland and scrub. Upland blanket bog largely occurs within a mosaic of heath and upland grassland habitats and is the dominant habitat on broad plateaux, on saddle areas and in small basins located between steep slopes. The most extensive areas occur between Cope's Mountain and Crockauns Mountain with smaller areas in the interior of Keelogyboy. Many areas of blanket bog occur at stream rises. Lowland blanket bog occurs in a large watershed between Crockauns and Keelogyboy and generally supports wetter and slightly deeper, peat than the upland areas.

In upland areas the blanket bog vegetation is dominated by Ling Heather (Calluna vulgaris), cottongrasses (Eriophorum spp.), Deergrass (Scirpus caespitosus), Purple Moor-grass (Molinia caerulea) and Bog Asphodel (Narthecium ossifragum), with frequent hummocks of moss Racomitrium lanuginosum and abundant lichens (Cladonia spp.). Small to medium-sized pools and associated flushes occur locally in mountain saddle areas. Bog-pools contain bog mosses (Sphagnum auriculatum, S. cuspidatum, S. recurvum) and Common Cottongrass (Eriophorum angustifolium). Quaking lawns of bog moss and Round-leaved Sundew (Drosera rotundifolia) occur locally. Surrounding areas also feature damp, but drying out, interconnecting pools and wet flats. Swallowholes are frequent. Erosion features of deep peat such as peat haggs and bare peat gullies are common in summit areas.Areas of heath habitat are characterized by tall Ling Heather, Bilberry

(Vaccinium myrtillus), Common Cottongrass, some Purple Moor-grass, Green-ribbed sedge (Carex binervis) and Wavy Hair-grass (Deschampsia flexuosa). Heath Rush (Juncus squarrosus) and occasional Crowberry (Empetrum nigrum) also occur. The site also contains a wide range of other habitats, including good examples of limestone pavement, calcareous scree, upland grassland on mineral and peaty soils, rivers and streams and small areas of semi-natural woodland. The steep cliffs and limestone scree support pockets of alpine vegetation with species of interest including the rare Yellow Saxifrage (Saxifraga aizoides) and the scarce Mossy Saxifrage (S. hyponides) as well as a diverse moss and liverwort flora. On the north-west side of the site, at the base of cliffs and scree slopes, small areas of broadleaved woodland occur supporting Hazel (Corylus avellana), Ash (Fraxinus excelsior), Hawthorn (Crataegus monogyna), Rowan (Sorbus aucuparia) as well as the scarce species Irish Whitebeam (Sorbus hibernica). This area also supports a diverse community of mosses.Scarce species such as Blue Moor-grass (Sesleria albicans) and Grass-of-Parnassus (Parnassia palustris) can be found in the patches of species-rich, upland dry grassland and wet grassland within the site. There are also areas of well-revegetated, cutover bog, on peat of up to 2 m deep, on the lower slopes of Keelogyboy. The site supports several Irish Red Data book species including Chough, Hen Harrier, Peregrine Falcon and Red Grouse. Landuse within the site is predominantly sheep grazing. Most areas have been somewhat modified by grazing, with localised areas degraded by overgrazing, particularly on Keelogyboy and the western side of Cope's Mountain. However, recent destocking is reported to have taken place on some parts of the site and habitat recovery is possible if de-stocking continues. Development of wind farms, drainage and further afforestation are also potential threats to the site. Large areas of forestry have been developed on the northern side of Crockauns and on the western and southern sides of Keelogyboy, adjacent to the site. Recent drainage has occurred within one of the most intact areas of blanket bog habitat within the site. Quarrying is also a potential threat, particularly in relation to potential expansion of the existing quarries on north side of Cope's and Crockauns Mountains. Crockauns/Keelogyboy Bogs NHA is a site of considerable conservation significance. It contains extensive areas of blanket bog, heath, upland grassland and associated habitats. Blanket bog habitat is a globally scarce resource. It is largely confined to coastal regions at temperate latitudes with cool, wet, oceanic climates. North-west Europe contains some of the best-developed areas of blanket bog in the world. The most extensive areas are found in Ireland and Britain. Upland blanket bogs, due to their exposure to severe climatic conditions at high elevations, are particularly vulnerable to erosion by human activities and extensive areas are currently undergoing active erosion due mainly to overgrazing. The current area of intact upland blanket bog in Ireland represents only a fraction of the original resource, due to the combined impacts of afforestation and overgrazing, and intact examples are therefore extremely valuable for nature conservation. Their long-term survival requires sensitive management.

Conservation Objectives: None Available

4.2.11 Site Name: Ben Bulben, Gleniff and Glenade Complex SAC

SITE SYNOPSIS Version date: 22/10/2020

SITE CODE: 000623

This large SAC site is located in the uplands around Ben Bulben, King's Mountain, Benwiskin, Truskmore and Tievebaun (or Eagle's Rock), straddling the Sligo/Leitrim county boundary. These uplands are formed of Carboniferous limestone, capped in places by shales. They stand in a high plateau, 300-450 m above the surrounding countryside, and the edges form lofty cliffs ranging from 15 to 300 m in height. Below these cliffs, block scree usually occurs on slopes of 40-50 degrees. The mesa type of landform (i.e. flat-topped hill) found at this site,

which has arisen from the long exposure of the upland areas to erosion, is of great interest geomorphologically. So too are the upper Viséan reefs exposed on the cliffs and on some of the summits. In addition, this region is also the type locality for the Ben Bulben shale, the Glencar limestone and the Dartry limestone. This site is important botanically mainly because of the profusion of alpine plants which occur on the cliffs throughout the area, and particularly the cliffs of the Gleniff valley. The site is one of the best in the country for alpines, in terms of speciesrichness, abundance and indeed, some of the alpine plants found here occur nowhere else in Ireland. The numerous waterfalls and Glencar Lake are also of great botanical interest.

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):

[3260] Floating River Vegetation

[4010] Wet Heath

[4030] Dry Heath

[4060] Alpine and Subalpine Heaths

[5130] Juniper Scrub

[6210] Orchid-rich Calcareous Grassland*

[6230] Species-rich Nardus Grassland*

[6430] Hydrophilous Tall Herb Communities

[7220] Petrifying Springs* [7130] Blanket Bogs (Active)*

[7140] Transition Mires

[7230] Alkaline Fens

[8110] Siliceous Scree

[8120] Calcareous Scree

[8210] Calcareous Rocky Slopes

[1013] Geyer's Whorl Snail (Vertigo geyeri)

[1355] Otter (Lutra lutra)

Throughout the site, on scree slopes and on cliffs, there are a large number of calcareous springs and seepage areas. Many of these have tufa deposits associated with them. Species occurring in these wet conditions include Common Bent (Agrostis stolonifera), Golden-saxifrage (Chrysosplenium oppositifolium), Pale Butterwort (Pinguicula lusitanica), Bog Pimpernel (Anagallis tenella), Blue Moor-grass (Sesleria albicans), sedges (including Carex panicea) and an abundance of bryophytes. The Red Data Book species Yellow Saxifrage (Saxifraga aizoides) and Mossy Saxifrage (S. hypnoides) are scattered throughout this community. In places on the limestone cliffs, tufa builds up on rocky ledges and provides very wet habitat for rare and interesting vegetation communities. Noteworthy here too are the bryophyte communities, which include a number of very rare species (e.g. Didymodon maximus at its only known locality in Europe). Transition Mires, Alkaline Fens and Hydrophilous Tall Herb Communities, all Annex I habitats listed under the E.U. Habitats Directive, are associated with these wetland areas. Drier areas on the calcareous and siliceous screes, cliffs and rocky slopes, support somewhat different vegetation. Common here are Lesser Meadow-rue (Thalictrum minus), Welsh Poppy (Meconopsis cambrica), Roseroot (Rhodiola rosea), Harebell (Campanula rotundifolia) and Viviparous Fescue (Festuca vivipara). Scattered throughout this vegetation are Alpine Meadow-rue (Thalictrum alpinum), Hoary Rock-cress (Arabis hirsuta), Mountain Sorrel (Oxyria digyna), Mountain Avens (Dryas

octopetala) and the Red Data Book species, Purple Saxifrage (Saxifraga oppositifolia) and Alpine Meadow-grass (Poa alpina). Ferns are particularly abundant in the rocky crevices, including Bristle Bladder-fern (Cystopteris fragilis), Green Spleenwort (Asplenium viride), Wilson's Filmy-fern (Hymenophyllum wilsonii) and the Red Data Book species, Holly Fern (Polystichum lonchitis). Trees and shrubs are scattered along the cliff ledges, including Yew (Taxus baccata), Juniper (Juniperus communis) and the Red Data Book species, Tea-leaved Willow (Salix phylicifolia). Some areas of Juniper scrub exist. Where the cliffs are interrupted by more gently sloping ground, grassy vegetation usually predominates, but where the underlying rock outcrops, the Red data Book species, Moss Campion (Silene acaulis) is found. The proximity of the site to the sea is evident in the occurrence of several maritime species, e.g. Sea Campion (Silene vulgaris subsp. maritima), Sea Plantain (Plantago maritima) and Common Scurvygrass (Cochlearia officinalis). Small areas of grasslands ascribable to the E.U. Habitats Directive Annex I priority types: Species-rich Nardus Grassland and Orchid-rich Calcareous Grassland have been reported to occur from the Leitrim part of the site, according to the Irish Semi-natural Grasslands Survey, 2009. Version date: 22.10.2020 3 of 3 000623_rev20.docx The summit of the plateau is peat-covered, with areas of blanket bog and wet and dry heath, dominated by Heather (Calluna vulgaris) and Bell Heather (Erica cinerea), with Lesser Twayblade (Listera cordata) commonly occurring underneath Heather bushes. On the highest parts of the site, the heath becomes more alpine in character, and includes species such as Crowberry (Empetrum nigrum), Cowberry (Vaccinium vitis-idaea), Fir Clubmoss (Huperzia selago), Alpine Sedge (Carex bigelowii) and the moss Racomitrium lanuginosum. Many fast flowing upland streams rise on the summit of the plateau and flow down its sides. Some of these streams carry base-rich water and support a species-rich bryophyte flora, often associated with tufa deposits. A number of rare bryophytes have been recorded, including Orthothecium rufescens, Daltonia splachnoides, Fissidens pusillus and Ulota calvescens, among others. The streams on the site show a good range of riverine structures, with pools, riffles, cascades, waterfalls, tufa deposits, petrifying springs and swallow holes. There are also some streams which have intermittent flow and which are typical of high-level karst streams, very few of which occur in the country. Six rare flowering plant species which are legally protected under the Flora (Protection) Order, 2015, have been recorded from this remarkable site: Fringed Sandwort (Arenaria ciliata), Northern Rock-cress (Cardaminopsis petraea), Alpine Bistort (Polygonum viviparum), Small-white Orchid (Pseudorchis albida), Chickweed Willowherb (Epilobium alsinifolium) and Alpine Saxifrage (Saxifraga nivalis). The latter two species have their only known Irish stations at this site. The rare whorl snail, Vertigo geyeri, has recently been discovered at the site. Five populations occur at three locations, all in calcareous flushes on sloping ground. These are the first records for Co. Leitrim for this rare mollusc which is listed on Annex II of the E.U. Habitats Directive. Otter, a species which is also listed on Annex II of the E.U. Habitats Directive, is known to occur within the site. The extensive uplands in the site provide excellent habitat for Peregrine, a species listed on Annex I of the E.U. Birds Directive. Four breeding pairs were recorded here in recent years. The uplands are used primarily for grazing. On some parts of the plateau, peat deposits are eroding. Upland habitats are generally threatened by afforestation. The cliffs and steep scree slopes are not significantly threatened. This plateau area is recognised as, botanically, one of the richest in Ireland. It provides the best example in the country of alpine and arctic-alpine vegetation and includes two vascular species which are not known to occur elsewhere in Ireland, as well as a host of rare mosses and liverworts. The site contains a diverse range of good quality upland habitats. The petrifying springs with tufa deposits are of particular interest,

and are good examples of a habitat which is considered to be threatened in Europe and given priority status on Annex I of the E.U. Habitats Directive.

Conservation Objectives: 23/03/2021

4.2.12 Site Name: SLIEVEWARD BOG NHA
SITE SYNOPSIS Version date: 14/01/2004
Site Code: 001902

Slieveward Bog NHA contains a range of habitats including upland blanket bog, heaths, deciduous woodland and calcareous fen. It is located 1.5 km south-west of Ballysadare, Co. Sligo and is situated within the townlands of Corhawnagh, Cooney, Largan and Lugnamackan. It is one of the most easterly outliers of the Ox Mountain range. Its geological location partially accounts for the interesting nature of the area, as it is sited where the acid metamorphic rocks of the Ox Mountains meet calcareous limestones of the lowlands. A road marks the western boundary to the site while the base of the hills form the remaining boundaries. The altitude range is between 30 m and 199 m. The site contains a considerable range of habitats ranging from calcareous fens, springs and scrub woodland to more acid blanket bog, wet heath, dry heath and small streams or flushed areas. Drainage northwards from the summits and slopes of Slieveward and Crocknanoo meet calcareous springs at the base resulting in an interesting mix of fens and flushes. These are rich in Sedge (Carex) species, especially Bottle Sedge (Carex rostrata), Glaucous Sedge (C. flacca), Carnation Sedge (C. panicea) and Common Sedge (C. nigra). Two uncommon sedges also occur, Slender-tufted Sedge (Carex acuta) and Long-stalked Yellow-sedge (C. lepidocarpa). Other frequently occurring species include Cuckoo Flower (Cardamine pratensis), Meadowsweet (Filipendula ulmaria), Water Mint (Mentha aquatica) and Lesser Spearwort (Ranunculus flammula). An uncommon plant, Variegated Horsetail (Equisetum variegatum) is exceptionally abundant in one of the fens. Small reedbeds occur in places, with Great Fen-sedge (Cladium mariscus), Common Reed (Phragmites australis) and Bogbean (Menyanthes trifoliata). Deciduous woodland which consists mainly of of Hazel (Corylus avellana), Downy Birch (Betula pubescens) and Holly (Ilex aquifolium) with occasional open stands of Oak, covers the slopes above the fens. Under the trees, Pignut (Conopodium majus), Wood Anemone (Anemone nemorosa), Bilberry (Vaccinium myrtillus) and Great Wood-rush (Luzula sylvatica) are common. On the upper slopes and plateau areas an interesting mosaic of upland blanket bog, wet heath, dry heath and flushed areas occurs. On flat plateau areas blanket bog has accumulated with characteristic species occurring such as Deergrass (Scirpus caespitosus), Cross-leaved Heath (Erica tetralix), Ling Heather (Calluna vulgaris), Common Cottongrass (Eriophorum angustifolium), Purple Moor-grass (Molinia caerulea), Bog Asphodel (Narthecium ossifragum), Carnation Sedge and Tormentil (Potentilla erecta). While open bog pools are not common, frequent in-filling, wet hollows containing Round-leaved Sundew (Drosera rotundifolia) and bog mosses such as Sphagnum cuspidatum, S. auriculatum and S. papillosum occur. Around the edges of these pools, hummocks of the bog moss Sphagnum capillifolium are frequent. Where peat is more shallow wet heath is common with species such as Ling Heather, Bell Heather (Erica cinerea) and Cross-leaved Heath. Also present are Hard Fern (Blechnum spicant), Tormentil, Devil's-bit Scabious (Succisa pratensis), Green-ribbed sedge (Carex binervis), Lousewort (Pedicularis

sylvatica), Slender St. John's-wort (Hypericum pulchrum) and the moss Breutelia chrysocoma. A good cover of bog mosses also occurs with hummocks of Sphagnum capillifolium, S. papillosum and S. subnitens. Wet flushed areas and small streams are common across the slopes. Species characteristic of these areas include Purple Moor-grass (Molinia caerulea), Bog Myrtle (Myrica gale), Meadow Thistle (Cirsium dissectum), Meadowsweet and Many-stalked Spike-rush (Eleocharis multicaulis). Other rushes such as Sharpflowered Rush (Juncus acutiflorus), Compact Rush (J. conglomeratus) and Jointed Rush (J. articulatus) are common. Frequently occurring sedges include Common Sedge, Bladder-sedge (Carex vesicaria), Star Sedge (Carex echinata), Yellow-sedge (Carex flava), Bottle Sedge, Carnation Sedge and Black Bog-rush (Schoenus nigricans). At least two types of orchids occur, Heath Spotted-orchid (Dactylorhiza maculata) and Common Twayblade (Listera ovata). Also occasionally present are Sneezewort (Achillea ptarmica), Marsh Willowherb (Epilobium palustre), Meadow Buttercup (Ranunculus acris), Lesser Stitchwort (Stellaria graminea), Common Butterwort (Pinguicula vulgaris) and small stands of Eared Willow (Salix aurita). On drier slopes, dry heath vegetation occurs with characteristic species such as Bell Heather, short Ling Heather, Bilberry, Great Wood-rush, Common Bird's-foot-trefoil (Lotus corniculatus), Meadow Vetchling (Lathyrus pratensis), Bracken (Pteridium aquilinum) and a species of Violet (Viola sp.). Other species occurring on drier outcrops are Primrose (Primula vulgaris), Harebell (Campanula rotundifolia), Wild Thyme (Thymus praecox), Bitter-vetch (Lathyrus montanus), Wood-sorrel (Oxalis acetosella), Heath Bedstraw (Galium saxatile) and a species of Lady's-mantle (Alchemilla sp.). Grass species include Yorkshire-fog (Holcus lanatus), False Oatgrass (Arrhenatherum elatius), Quaking Grass (Briza media), Tufted Hair-grass (Deschampsia caespitosa) and Created Dog's-tail (Cynosurus cristatus). Land use over the whole site is light, with minimal grazing by feral goats being the only potentially disturbing activity observed. In the past, drainage schemes were proposed for the flat ground at the northern and eastern ends of the site but these did not proceed. Slieveward Bog NHA is of considerable conservation significance as it contains a diverse and species-rich range of habitats including blanket bog, wet and dry heath, deciduous woodland and calcareous fen as well as an exceptional range and rarity of the species. Blanket bog habitat is a globally scarce resource. It is largely confined to coastal regions at temperate latitudes with cool, wet, oceanic climates. North-west Europe contains some of the best-developed areas of blanket bog in the world. The most extensive areas are found in Ireland and Britain. Upland blanket bogs, due to their exposure to severe climatic conditions at high elevations, are particularly vulnerable to erosion by human activities and extensive areas are currently undergoing active erosion due mainly to overgrazing. The current area of intact upland blanket bog in Ireland represents only a fraction of the original resource, due to the combined impacts of afforestation and overgrazing, and intact examples are therefore extremely valuable for nature conservation. Their long-term survival requires sensitive management

Conservation Objectives: None Available

4.2.13 Site Name: BALLINTEMPLE AND BALLYGILGAN SPA
SITE SYNOPSIS Version date: 25/03/2014
Site Code: 004234

Ballintemple and Ballygilgan SPA comprises two separate areas of fields supporting agriculturally-improved grassland, situated on the north side of Drumcliff Bay, Co. Sligo. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Barnacle Goose. The fields at Ballintemple and Ballygilgan support an internationally important population of Barnacle Goose (1,838 – 4 year survey mean for the period 1993- 2003). The population of Barnacle Goose at the site has increased in recent years (3,930 in 2008 and c. 5,000 in 2011) and is now the most important site in the country for this species. The geese feed for much of the winter on fields at Ballintemple and Ballygilgan, which are their core feeding sites, and roost on the nearby island of Inishmurray. Ballintemple and Ballygilgan SPA is of ornithological importance for the internationally important population of Barnacle Goose that it supports – this species is listed on Annex I of the E.U. Birds Directive. Parts of the Ballintemple and Ballygilgan SPA are designated as a Statutory Nature Reserve and parts are designated as a Wildfowl Sanctuary.

Conservation Objectives: 23/03/2021

The conservation objectives, supporting documentation and the Natura 2000 data for each site can also be accessed on the NPWS web site which are publically available.