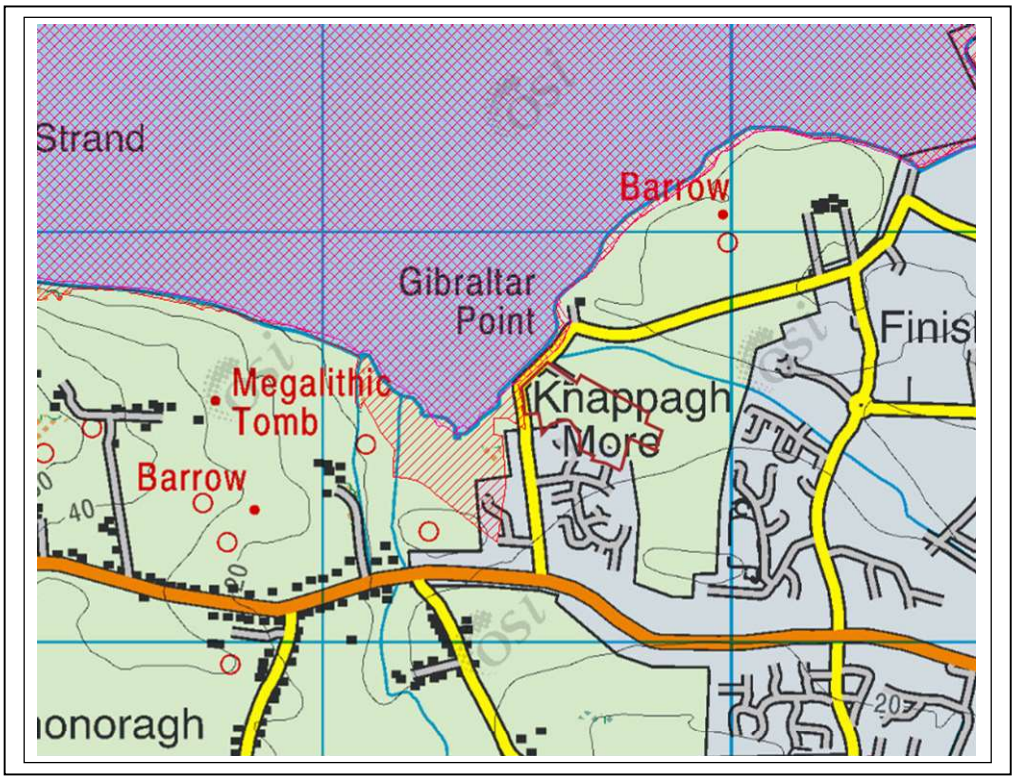
NATURA IMPACT STATEMENT (NIS)

An Ecological Impact Assessment to Support
The Appropriate Assessment Process
Regarding a Proposed Planning Application
For A Residential Housing Estate
AT
KNAPPAGH MORE, SECOND SEA ROAD, SLIGO



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ACKNOWLEDGEMENTS

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

1 INTRODUCTION

1.1 THE REQUIREMENT FOR AN ASSESSMENT UNDER ARTICLE 6

The requirement for appropriate assessment is set out in the ED 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, shali be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives'

1.2 THE AIM OF THIS REPORT

This 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 it provides an ecological impact assessment (EclA) for the proposed development of mixed-use retirement village at Knappagh More, Lower Sea Road, Sligo, Co. Sligo.

The DOE in a communication entitled "Appropriate Assessment of plans and projects in Ireland, Guidance for planning authorities" have stated that "There are no prescribed methods for undertaking appropriate assessment, or form or content for reporting and although there are some worked examples of formats that can be used however these are not suitable where multiple sites have to be considered and particularly where a number of Natura sites within the 15Km radius of the proposed plan or project may be eliminated at a screening stage.

The NIS should provide sufficient data and information to the Local 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, indigenous species and specifically on the habitats for which the Natura 2000 conservation sites were designated. The Natura 2000 sites on which the NIS is based are as follows.

NHA's (pNHA's) do not have a statuatory designation and as such protection of such areas is restricted to (1) AEOS, GLAS and environmental agricultural schemes and plans which require conservation of NHA'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 NHA's by planning and licensing authorities. By performing the ecological impact assessment in a transparent logical sequence then, in relation to the habitats and species of the Natura sites, together with their conservation objectives, the 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 ED Habitats Directive. In addition the report should impart sufficient data to enable the Competent Authority to complete the Appropriate Assessment process if deemed necessary. No screening of the proposed project was carried out as it was determined that due to the location of the site within a Natura site that an NIS would be required due to the land take which was established through contact with Sligo County Council.

Notes on the Author

The NIS has been undertaken by Paul Neary B.Sc. (Env. Sc.) M.Sc (eco tox), whom has previously carried out Ecological surveys and damage assessments on the Kerry Mountains, Ox Mountains, Shores of Lough Conn and Lough Cullin under the auspices of NPWS, he has also been involved in formulating management plans for National Parks and lectured in ecology. A number of his Appropriate Assessment reports have bee successfully defended by An Bord Pleanala in High Court actions taken by objectors who wished to have the Boards decisions overturned. He has also submitted a number of remedial NIS's directly to An Bord Pleanala under section 261A of the Planning and Development Act, the findings of which have been ratified by the Bord.

1.3 CONSULTATION

1.3.1 Government Departments

NPWS would be contacted by Sligo County Council during the normal course of the planning process and therefore, to avoid duplication, consultation with NPWS will be via that mechanism. A pre planning consultation with Sligo County Council directed that the proposed project be subject to an NIS due to its proximity to natura sites there by negating the requirement for a Screening report.

2 THE APPROPRIATE ASSESSMENT PROCESS

2.1 INTRODUCTION

There is a requirement, under Article 6(3) of the ED Habitats Directive (Directive 92/43/EEC), to carry out an Appropriate Assessment. The first step of the Appropriate Assessment process is to establish whether, in relation to a particular plan or project, Appropriate Assessment is required. Article 6(3) states:

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

A number of guidance documents on the appropriate assessment process were consulted during the preparation of this NIS. These are:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (NPWS 2009, Revised February 2010);
- 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); and
- Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000).
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (2007);
- 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)*

- EU Managing Natura 2000 sites and the provisions of Article 6 of the 'Habitats' Directive *(2018).*

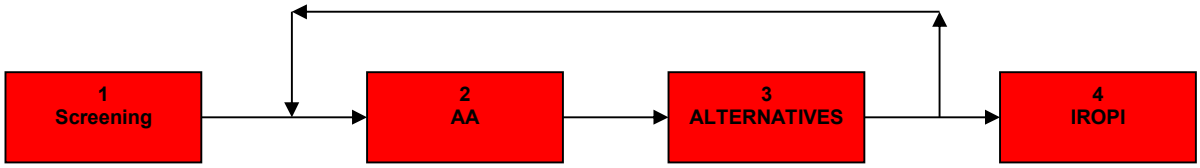
Where it cannot be deduced or proven with certainty that the development will not have a significant effect on the Natura 2000 sites then it is necessary and appropriate to carry out an appropriate assessment on the ramifications of the development on the sites with respect to their conservation objectives.The 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 - i.e. a statement of the likely and possible impacts of the plan or project on a Natura 2000 site (abbreviated in the following guidance to "NIS") 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 Natura Impact Assessment as opposed to a Screening Document.

2.2 STAGES

The European Commission's guidance promotes a fours stage process, as set out in Box 1 below, to complete the Appropriate Assessment, 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 NIS includes the ecological impact assessment and testing required under the provisions of Article 6(3) by means of the first stage of Appropriate Assessment, 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".

The NIS also provides the information required for the Competent Authority to complete the Appropriate Assessment (Stage 2) if required.

[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)*

3 THE ECOLOGICAL IMPACT ASSESSMENT (EcIA)

3.1 INTRODUCTION

The methodology employed with respect to the Ecological Impact Assessment for this 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' (2002), the Institute of Ecology and Environmental Management's Guidelines for Ecological Impact Assessment (IEEM, 2006) and with reference to the National Roads Authority Guidelines (NRA) for ecological impact assessment (Revision *2,* 2009). The ecological assessment of the proposed development site is contained in the Appendix with this section primarily concerned with directing the reader to the relevant sections.

NHA's and pNHA's are included in the NIS where they are stand alone sites and where there is dual designation i.e. both an SPA / SAC and an NHA then the natura site designation is considered in preference to the NHA pNHA 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 at a future date which has implications for the section of the NIS which considers planned or contemplated nature conservation and / or Biodiversity targets. It is the considered opinion that the omission of the NHA's from the NIS 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 NIS generated. The proposed project is not necessary to the management of the site. The ecological characteristics of the Natura 2000 sites are described in Section 4 of this document which includes, where relevant, the conservation objectives for that site, followed by Assessment of Likely Effects, potential Mitigation and Residual impacts in Sections 5, 6 and 7 respectively. Conclusions are set out in section 8.
A summary description of the Project is provided in section 3.1.1. overleaf.

3.1.1 Description of the Project

The completed development will comprise of the following development over 2 phases:

Phase 1 of Residential Development consists of 98 No. residential units made up of

9 No. – Type A– 4 Bed Semi Detached/Detached Houses
4 No. – Type A1 – 5 Bed Semi Detached Houses
59 No. – Type B/B1 – 3 Bed Semi Detached/Terraced Houses
3 No. – Type C – 2 Bed Apartments
14 No. – Type D – 1 Bed Semi Detached/Terraced Bungalow Houses
6 No. – Type E – 2 Bed Semi Detached Bungalow Houses
3 No. – First Floor Apartments within the Creche Building

a) Proposed Creche with associated landscaping and surface car parking,
b) On site waste water pumping station
c) All landscaping, boundary treatments, entrance improvements, all associated site works and service connections.

Phase 2 of Residential Development consists of 31 No. residential units made up of

2 No. – Type A– 4 Bed Semi Detached/Detached Houses
1 No. – Type A1 – 5 Bed Semi Detached Houses
10 No. – Type B – 3 Bed Semi Detached Houses
6 No. – Type C – 2 Bed Apartments
1 No. – Type D – 1 Bed Semi Detached/Terraced Bungalow Houses
1 No. – Type E – 2 Bed Semi Detached Bungalow Houses
10 No. – Type F/F1 – 4 Bed Detached Houses

(a) All landscaping, boundary treatments, entrance improvements, all associated site works and service connections.

The site layout has been sensitively designed such that the associated green areas are located between the proposed structures and the Sea Road with the Natura sites on the opposite side of the Sea Road. This dictates that the proposed dwellings back onto the green area with the associated street lighting requirements shielded from the bay area by the proposed dwellings and green area.
The site is fully serviced with the finished project to connect to all the existing ESB, Sewer, water mains, storm water and telecommunication infrastructure. It is proposed to formulate a commensurate CEMP to be agreed with Sligo County Council prior to commencement of the development with the CEMP to address all the construction related and ancillary activities for example construction traffic management, construction car parking, delivery of raw materials, storage of raw materials, storage of aggregates, excavated soil / sub soil management, segregation and storage of waste construction materials, permitted disposal of wastes, construction workers

sanitary facilities, storage of hydrocarbons, refuelling areas, protection of surface water features (silt traps / fences), pouring of concrete etc. A copy of the preliminary proposed CEPM is included with the application and should be referenced in conjunction with this document. The CEPM Measures will also cater for the protection of surface water features with respect to surface water run off during construction, suspended solids, aggregate storage and silting management, hydrocarbon management, protection of surface water features and spill protection / management. Where aggregate for the purposes of fill is required it is to be sourced in a quarry that is registered under section 261/261A of the 2000 planning and development act or have a grant of planning under that act. The quarry / s that are used for the supply of aggregate shall be free from invasive botanical species.

Construction and demolition waste shall not be used on site. No maintenance of heavy plant would occur on site with all preventative maintenance carried out prior to entry to the site. Excavated soil / sub soil material would not be stockpiled on site provided and would be either temporarily reseeded with grass or mechanically sealed during the stockpiling process or removed off site for appropriate disposal in a licensed facility. All empty packaging would be stored in appropriate containers for disposal as required. Batch concrete trucks are prohibited from the washing out of the drum on site – which is now industry standard. The restricted species as listed in appendix of this report would not be utilised or introduced for the purposes of landscaping or any other purposes.

Watertight containers would be provided for the storage of empty chemical containers which shall be removed off site and disposed of appropriately as required.

No in stream works are associated with the development. The duration of the construction phase of the project is anticipated to take circa 2 - 3 years from breaking ground to completion. This will require cut and fill for the foundations (raft with no strip or piling proposed) and will require removal of soil / sub soil off site for appropriate disposal where it cannot be reworked within the development site boundary. The proposed site management, excavation, construction and insitu casting are all to be carried out in accordance with the Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters" produced by Inland Fisheries Ireland. Storm water from the proposed development may be discharged to the existing surface water features through petrol interceptors. Post completion there will be a requirement for LED street lighting.

3.1.2 Description of the Proposed Development Site and 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 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 (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. 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 contiguous 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 a mosaic of GS4, GA1, BL3, ED3 and WS1 with the dominant habitats being ED3 and WS1. 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 indicating that no natural habitats remain (see aerial photograph in Appendix C). 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 RTN and general continuous anthropogenic activity from the existing 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. 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 fl;ow paths present. On the mmain 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. 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, 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).

4 NATURA 2000 SITES

The Natura 2000 sites within 15Km of the proposed development are listed below (see appendix B map 2):

(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 001670

(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

(13) Ballintemple & Ballygilgan SPA 004234

4.1 DESIGNATED SITES IN THE VICINITY OF THE PROJECT

There are a number of designated sites within 15km of the proposed development (see Map 1 in appendix) and these Natura sites are listed in Table T1 below.

Table T1: Natura sites within 15km of the proposed development

Designation	Site Name	Site Code	Distance from the proposed development	Direction to Natura Site
SPA	Cummeen Strand / Drumcliff Bay	004035	9.6M	NW
SAC	Cummeen Strand / Drumcliff Bay	00627	0M	W
SAC	Lough Gill	001976	2.382Km	E
SPA	Drumcliff Bay	004031	4.035Km	N
pNHA	Knocknarea Mountain and Glen	001670	3.694Km	SW
SPA / SAC	Ballysadare Bay	004129 / 000622	5.506Km	SW
SPA	Sligo / Leitrim Uplands	004187	6.899Km	NE
SAC	Unshin River	001898	6.827Km	S
SAC	Union Wood	000638	7.352Km	SSE
pNHA	Colgagh Lough	001658	6.829Km	E
NHA	Crockanus / Keelogyboy Bog	002435	6.899Km	NE
SAC	Benbulben, Gleniff and Glenade Complex	000623	7.550Km	NE
NHA	Slieveward Bog	001902	8.106Km	S
SPA	Ballintemple & Ballygilgan	004234	10.584Km	NW

4.2 CHARACTERISTICS OF THE DESIGNATED SITES

The subsequent sections 4.2.1 to 4.2.13 outline the Site Synopsis and the features of interest as prescribed by the NPWS for each site individually. The detailed conservation objectives are included for the most relevant Natura sites. The site synopsis for each site has being generated by the NPWS, whom are the state body with the statutory responsibility for all Natura sites (SPA/SAC) and NHA's, and given their significance are presented in this report in an un-condensed format; free from editing, abbreviation, interpretation or summation. This ensures that there are no erroneous omissions from the 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 on its own merit. The NHA's do not have a statutory designation. Protection of such areas is restricted to (1) REPS / AEOS/ GLAS plans which require conservation of NHA'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 NHA's by planning and licensing authorities.

Only the conservation objectives for the most relevant sites are included in the following section. The conservation objectives and supporting documents for all Natura 2000 sites are publically available from NPWS on their web site if required.

4.2.1 Site Name: DUAL DESIGNATION: Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC / Cummeen Strand SPA

SITE CODES: 000627 / 004035

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.

Other Site Characteristics

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC site code 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 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 Brown?s 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.

Cummeen Strand SPA site code 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 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/Drumcliff Bay (Sligo Bay) SAC

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.

Cummeen Strand SPA

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.

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

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

Conservation Objectives

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC site code 000627

Conservation Objectives: Version 1: 18th Sept 2013

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favorable 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 favorable conservation condition for a particular habitat or species at that site.

Favorable conservation status of a habitat is achieved when:

• its natural range, and area it covers within that range, are stable or increasing, and

• the specific structure and functions which are necessary or its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and

• the conservation status of its typical species is favorable.

The favorable conservation status of a species is achieved when:

• population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and

• the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and

• there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

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 favorable conservation condition will contribute to the overall maintenance of favorable 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.

Notes/Guidelines:

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627

** indicates a priority habitat under the Habitats Directive*

1014 Marsh Snail *Vertigo angustior*

1095 Sea Lamprey *Petromyzon marinus*

1099 River Lamprey *Lampetra fluviatilis*

1130 Estuaries

1140 Mudflats and sandflats not covered by seawater at low tide

1365 Harbour seal *Phoca vitulina*

2110 Embryonic shifting dunes

2120 Shifting dunes along the shoreline with *Ammoplila arenaria* (white dunes)

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

5130 *Junipericus Communis* formations on heaths or calcareous grasslands

7220 Petrifying springs with tufa formation (Cratoneurion)

Cummeen Strand SPA site code 004035

Conservation Objectives: Version 1: 10th Sept 2013

The overall aim of the Habitats Directive is to maintain or restore the favorable 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.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favorable 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 favorable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favorable conservation condition will contribute to the overall maintenance of favorable conservation status of those habitats

and species at a national level.A site-specific conservation objective aims to define favorable conservation condition for a particular habitat or species at that site.

Favorable conservation status of a habitat is achieved when:

• its natural range, and area it covers within that range, are stable or increasing, and

• the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and

• the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

• population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and

• the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and

• there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

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.

Qualifying Interests

004035 Cummeen Strand SPA

A046	Brent Goose	*Branta bernicla hrota*
A130	Oystercatcher	*Haematopus ostralegus*
A162	Redshank	*Tringa totanus*
A999	Wetlands	

The Detailed Conservation Objectives and Supporting Documents are available for reference on the NPWS Web 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.

Conservation Objectives: 11/01/2021

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 be accessed on the NPWS web site which are publically available.

4.3 Screening of the Identified Natura Sites: At this juncture it is prudent to screen each SAC, SPA and NHA within the 15Km assessment zone to eliminate those on which the proposed development will not have significant or insignificant, direct or indirect effect impact, while identifying those sites on which the proposed development may have a direct or indirect effect, significant or insignificant impact. The matrix (T1-T2) out lines this process in a concise and succinct manner. This process considers the size, scale, nature and location of the development in relation to the location, conservation objectives and species of the various Natura sites.

T1: (1) Cummeen Strand SPA 004035 / Cummeen Strand Drumcliff Bay SAC 00627

Potential Impact	Direct Effect	Indirect Effect
Loss of Habitat	No land take from the SAC / SAP with no undesignated annexed habitat types present.	No annexed habitats listed in features on interest on the development site or contiguous to site. No potential for site to revert to an annexed habitat type
Habitat Fragmentation	No – none of the SAC habitats present on the proposed development site as they are predominantly marine or contiguous to the marine environment (dunes, mud flats, etc.)	No indirect fragmentation as a terrestrial site development site
Disturbance	No direct disturbance impacts as no activity within the boundary of the SAC / SPA	Potential disturbance during the heavier elements of the construction phase.
I impacts on migration	No impediment to migration	No indirect impact on migration.
Impact on Annexed Species	None – predominantly marine or located in the tidal, inter tidal, supra tidal zones.	None – predominantly marine or located in the tidal, inter tidal, supra tidal zones or zones adjacent to such habitat
Reduction in annexed species density	None – No suitable on-site habitat for annexed species in a semi urban environment on a site that was previously reclaimed	None – Avian ver wintering with no breeding on site- other species with specific habitat requirements no on site
Water quality (surface or ground water)	No – discharge to surface water or ground water – connection to public sewer.	No – no discharge to surface water or ground water
Water resource	No – no abstraction from surface water or ground water	No – no abstraction from surface water or ground water
Light	No absorbed into background	Potential depending on type used - mitigate
Noise	No – absorbed into background with no impact on species – urban setting	No – absorbed into background – urban setting / timing of heavier elements
Vibration	No absorbed into background – separation distance to relevant habitat	No absorbed into background
Compaction	No entry to Natura area	None – no entry to SAC / SAP area
Traffic	No - absorbed into background	No - absorbed into background timing of heavier elements to be considered
Synergistic effects	No	No
Introduction of xenobiotics to aquatic environment	No	No
Construction	No absorbed into background – timing for heavier elements	No absorbed into background post construction
Habitation	None absorbed into background	None absorbed into background
Air quality	No absorbed into background	No absorbed into background
Climatic	No	No
Interference with the key relationships that define the structure of the site	No	No
Interference with the key relationships that define the function of the site	No	No

(2) **T2:** (2) Lough Gill SAC 001976 (3) Drumcliff Bay SPA 004031 (4) Knocknarea Mountain and Glen pNHA 001670 (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 (13) Ballintemple & Callygilgan SPA 004234

Potential Impact	Direct Effect	Indirect Effect
Loss of Habitat	None as not located within the boundary of these Natura Sites	None as not located within or adjacent too these Natura Site
Habitat Fragmentation	None as not located within the boundary of these Natura Sites with large separation distance	None as not located within or adjacent to these Natura Sites– separation distance a major factor
Disturbance	None – due separation distance to the Natura sites	None as not located within or adjacent to these Natura Site – intervening lands consisting of urban center
Impacts on migration	None given the limited scale of the operation and the separation distance involved.	None – separation distance
Impact on Annexed Species	None given the limited scale of the project in a semi urban setting and the separation distance involved.	None– separation distance and separation by urban environment.
Reduction in annexed species density	No land take from these Natura sites or removal / deposition of material within its boundary.	None– separation distance
Water quality (surface or ground water)	No direct links to these Natura sites with project to connect to UWWTS	No direct discharges to surface water
Water resource	No abstraction of water from ground water or surface water.	No discharges to groundwater or surface water associated with these sites.
Light	None given separation distance to the natura sites	None as no increase in light in these natura sites due to separation distance and absorbed into background
Noise	In verse square law and separation distance dictates that no noise impact on the Natura sites – separation distance	In verse square law and separation distance dictates that no noise impact on these Natura sites – absorbed into background
Vibration	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 therefore vibration from construction and subsequent use would be undetectable in these Natura sites	None
Compaction	None due to separation distance	None due to separation distance –
Traffic	None due to separation distance	None due to separation distance –
Synergistic effects	None	None
Introduction of xenobiotics to aquatic environment	None	None
Habitation	None given the separation distance these natura sites	None given the separation distance involved .
Air quality	None given the separation distance	None given the separation distance and limited scale of the operation.
Climatic	None given the limited scale of the operation and the separation distance involved.	None given the limited scale of the operation and the separation distance involved.
Interference with the key relationships that define the structure of the site	None given the separation distance – separation distance	None given the separation distance– separation distance
Interference with the key relationships that define the function of the site	None given the separation distance – separation distance	None given the separation distance– separation distance

4.3.1 Analysis of Screening Report

The screening analysis indicates that only the Cummeen Strand SAP and Cummen Strand / Drumcliff Bay SPA may be indirectly impacted by the proposed development There is no land take from these Natura sites and it will not directly or indirectly impact on any annexed habitat or species of the SPA/ SAC with only indirect impacts to be considered. A grant of planning permission would not cause or result in any material being removed from or deposited within the boundary of any Natura site nor would a grant of planning permission require or cause any construction related activities to enter or traverse any Natura Site.
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.

The separation distance between the proposed development site and all the other Natura sites considered within the 15Km radius dictates that they can be effectively screened out due to the lack of direct and indirect links. The proposed development would not have any significant or insignificant, direct or indirect impacts on them nor would it contravene their Conservation objectives due to the separation distance with a major urban centre segregating them from the proposed development site.

4.3.2 Rationale for Site Designation

Site designation tends to be a function of habitat and / or species present. For the purpose of clarity, the following tables have been created to indicate the eco-logic for designating the Cummeen Strand SAC / SPA.

Table: T3 Features of Interest Associated with the SAC

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B		Cepphus grylle			10	10	i						X	
P		Draba incana									X			
M		Lepus timidus hibernicus									X			
M		Lepus timidus hibernicus											X	
M		Lepus timidus hibernicus										X		
M		Meles meles											X	
M		Meles meles									X			
P		Orobanche hedera									X			
A		Rana temporaria									X			
A		Rana temporaria											X	
B		Somateria mollissma			2	2	p						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A052	Anas crecca			w	250	250	i		G	C	B	C	C
B	A050	Anas penelope			w	750	750	i		G	C	A	C	C
B	A053	Anas platyrhynchos			w	200	200	i		G	C	B	C	C
B	A046	Branta bernicla			w	395	395	i		G	C	A	C	A
B	A045	Branta leucopsis			w	2000	2000	i		G	A	A	C	A
B	A149	Calidris alpina			w	1405	1405	i		G	C	A	C	B
B	A137	Charadrius hiaticula			w	118	118	i		G	C	A	C	B
B	A009	Fulmarus glacialis			r	30	30	p		G	C	C	C	C
B	A130	Haematopus ostralegus			w	906	906	i		G	C	A	C	B
F	1099	Lampetra fluviatilis			r				P	DD	C	C	C	C
B	A157	Limosa lapponica			w	327	327	i		G	C	A	C	B
B	A070	Mergus merganser			w	48	48	i		G	C	A	C	B
B	A160	Numenius arquata			w	750	750	i		G	C	B	C	C
F	1095	Petromyzon marinus			r				P	DD	C	C	C	C
B	A017	Phalacrocorax carbo			r	261	261	p		G	B	A	C	A
M	1365	Phoca vitulina			p	12	15	i		G	B	A	C	A
B	A140	Pluvialis apricaria			w	419	419	i		G	C	B	C	C
B	A141	Pluvialis squatarola			w	77	77	i		G	C	A	C	B
		Pyrrhocorax												

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

B	A346	pyrrhocorax			p	1	1	p		G	C	B	C	C
B	A048	Tadorna tadorna			w	120	120	i		G	C	A	C	B
B	A164	Tringa nebularia			w	18	18	i		G	B	A	C	B
B	A162	Tringa totanus			w	562	562	i		G	B	A	C	B
B	A142	Vanellus vanellus			w	1238	1238	i		G	C	B	C	C
I	1014	Vertigo angustior			p				P	DD	B	B	A	B

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

Table: T4 Avian Species Associated with the SPA

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A052	Anas crecca			w	70	70	i		G	C	B	C	C
B	A050	Anas penelope			w	178	178	i		G	C	B	C	C
B	A053	Anas platyrhynchos			w	170	170	i		G	C	B	C	C
B	A169	Arenaria interpres			w	80	80	i		G	C	B	C	C
B	A046	Branta bernicla			w	232	232	i		G	C	A	C	B
B	A144	Calidris alba			w	18	18	i		G	C	B	C	C
B	A149	Calidris alpina			w	601	601	i		G	C	B	C	C
B	A143	Calidris canutus			w	104	104	i		G	C	B	C	C
B	A137	Charadrius hiaticula			w	32	32	i		G	C	B	C	C
B	A182	Larus canus			w	43	43	i		G	C	B	C	C
B	A179	Larus ridibundus			w	353	353	i		G	C	B	C	C
B	A157	Limosa lapponica			w	57	57	i		G	C	B	C	C
B	A069	Mergus serrator			w	17	17	i		G	C	B	C	C
B	A160	Numenius arquata			w	546	546	i		G	C	A	C	B
B	A140	Pluvialis apricaria			w	567	567	i		G	C	B	C	C
B	A048	Tadorna tadorna			w	80	80	i		G	C	A	C	C
B	A164	Tringa nebularia			w	18	18	i		G	C	A	C	B
B	A162	Tringa totanus			w	501	501	i		G	C	A	C	B
B	A142	Vanellus vanellus			w	734	734	i		G	C	B	C	C

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B		Ardea cinerea			13	13	i							X

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

It is evident from the previous tables that the SPA and the SAC contain nationally important species which is considered significant and warrants conservation. The habitats of significance are Mudflats and sandflats not covered by seawater at low tide, Embryonic shifting dunes, Shifting dunes along the shoreline (white dunes), Fixed coastal dunes with herbaceous vegetation (grey dunes), *Juniperus communis* formations on heaths or calcareous grasslands and Petrifying springs with tufa formation (Cratoneurion)

4.4 Conservation Objectives

Cummeen Strand Drumcliff Bay SAC (08/09/13)

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

Cummeen Strand SPA (10/09/13)

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 were instructed in the targets or notes for a particular attribute.

5 ASSESSMENT OF LIKELY EFFECTS

5.1 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"*

5.2 POTENTIAL IMPACTS ON THE NATURA SITE - IMPACT PREDICTION

The nature of the proposed development on the site dictates that it lacks the potential to significantly negatively 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. The activities with the potential for negative impacts to the Natura site have been identified by NPWS and are listed in the tables below.

Cummeen Strand and Drumcliff Bay SAC Negative Impacts (October 2020)

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

Cummeen Strand SPA Negative Impacts

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

From those tables it can be seen that all the potential negative impacts to the SAC are deemed to be those related to activities carried out within the boundary of the SAC with no potential negative impacts identified from outside of the SAC boundary that would compromise the integrity of the SAC. With respect to the SPA only 4 potential negative impacts from activities outside of the boundary of the SAP have been identified by NPWS, E01, D01.02, E02 and A08. Of these only E01 is relevant to the proposed project with the other 3 not related to or relevant to the proposed project.

5.2.1 Potential impacts on the SAC Habitats

The proposed development will not directly impact on any qualifying habitat for the SAC or the SPA (wetlands) as there are none present on the development site or contiguous to it. Historical photographs indicate that the proposed development site was stripped or reclaimed post 2000.

There is no land take from either the SAC or SPA with no undesignated annexed habitats present consequently there would be no direct impact on the qualifying interests.

The following list of Conservation objectives are redacted 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 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.
(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 waterbirds that utilise it.

From this it can de determined that the proposed project does contravene any of the conservation objectives for the SAC or SPA as none of the habitats listed in the Conservation objectives or features of interest are present on or contiguous to the proposed development site.

No material would be deposited in or removed from either the SAC or SPA as a result of the proposed project nor it 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. No impact on qualifying or non-qualifying ED annexed habitats outside the immediate area of the development site, either during construction or subsequent habitation, is anticipated or expected.

5.2.1.1 Potential impacts on qualifying Avian species

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.

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 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 larges 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. 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 and lack of suitable habitat dictates that it is not used by any of these species for the reasons outlined below.

(i) The site was previously reclaimed with no natural habitat remaining
(ii) The on site scrub provides cover for ambush predators including the now ubiquitous mink, which has ben recorded as moving into urban areas, and foxes.
(iii) Traffic movement along the 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.

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 3 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 should also be considered.

5.2.1.2 Potential impacts on qualifying Mammalian species for the SAC

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. 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. 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 with strict controls on hydrocarbon management and protection of freshwater systems from suspended solids and cementitious material for example. The proposed development would not negatively impact on the conservation objectives for the Natura sites with respect to mammalian species.

5.2.1.3 Potential impacts on other Qualifying species of the SAC

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 i*n 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 suitable habitat on the proposed development site for the Narrow Mouthed Whorl Snail. 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 remains.

The only factors 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.

5.2.1.4 Potential impacts on qualifying Botanical species for the SAC

There will be no impact on any qualifying, or listed, species of plant. No annexed 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.

The features of interest list the species and associated habitat in which they are found however no such habitat exists on the proposed development site.

(1) 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.
(2) 7220 To maintain the favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC.

There would be no impact on the conservation objectives, listed above, for the Natura site.

5.2.1.5 Other factors that may impact on the SAC

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). 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, either during construction or subsequent habitation, outside of the development site area. Typical values in the vicinity of the development post construction would be in the order of 55 - 75 dB_{Laeq} with RTN from the sea road remaining the dominant noise source. Post construction the proposed development would be absorbed into the back ground.

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.

Outside of the development site area the Natura sites will not be affected by light, compaction, traffic, air quality or climatic factors given its scale and location either through construction or subsequent habitation. 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. 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 SO_2 (20µg/M^3 protection of vegetation) and NO + NO_2 (30 µg/M^3 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 the Sligo Town WWTP which has excess capacity to cater for the development.

5.3 Cumulative impacts

5.3.1 Introduction

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 section 5.2.1.3 above, impacts on the SAC / SPA from the proposed development are confined to indirect impacts. It is not anticipated that the proposed development will not impact on water quality when the mitigation measures, which are based on the precautionary principle, are implemented. 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.

5.3.2 Potential for Cumulative Impact

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 discharges to either surface water or ground water during construction or subsequent habitation. A CEMP has 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. 218689, 8916242, 0413238) 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 during the construction phase ensuring that there are no cumulative impacts from that phase.

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 both construction and subsequent habitation / use. The impact on water quality is considered to be neutral (see section 6) with the potential impact on annexed habitats and species also considered neutral.

6 EFFECTS ON OTHER PLANS OR PROJECTS

The following section examines a number of plans, targets, objectives, directives and international agreements. As several previous targets and plans with respect to biodiversity have not been achieved and these are included to give a historical context to give an overview of the progression of bio diversity conservation measures and their evolution. It is likely that a number of those deadline dates will be pushed back or extended with the wording reconstituted, the plans renamed, and new target dates assigned.

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 assessment 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 Rver 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. Ireland is required to produce a river basin management plan under the Water Framework Directive (WFD) which is the overarching legislation governing this approach. The Plan provides a more coordinated framework for improving the quality of waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland. The Water Framework Directive (WFD) sets out the environmental objectives which are required to be met through the process of river basin planning and implementation of those plans. Specific objectives are set out for surface water, groundwater and protected areas. The challenges that must be overcome in order to achieve those objectives are considered significant. A key purpose of the River Basin Management Plan (RBMP) is to set out priorities and to ensure that implementation is guided by those priorities, which detail the approach and infrastructural requirements. The key water quality data still originates in the first phase i.e. under the WFD data sets which have yet to be updated therefore the EPA Q values are more pertinent regarding empirical evidence when completing the

AA process. Currently the RBMP is essentially a green paper on water quality which will require considerable capital investment from central government if the objectives are to be achieved within the prescribed time scales however to date no such commitment has being made.

This second-cycle River Basin management Plan 2018 – 2021 aims to build on the positive aspects of the first cycle WFD, and to acknowledge and address those aspects which did not achieve the prescribed or anticipated objectives and targets. The risk assessment is based on the monitoring data including data on status, water quality trends and the scale of the challenges involved in meeting the environmental targets set by the WFD. Where the monitoring data indicated that there was a risk that the environmental objectives would not be achieved in respect of certain water bodies, an assessment was then carried out to identify the significant pressures impacting on that water status. The River Basin Management Plan (RBMP) sets out a range of actions aimed at moving towards the objectives of the EU Water Framework Directive (WFD). In terms of devising a strategy for implementation, it must be acknowledged that the planned actions are diverse, involve multiple stakeholders and will be implemented taking account of the available resources. Planned actions range from national measures implemented by national authorities (such as the Irish Water Capital Investment Plan and the Nitrates Action Programme) to sub-catchment management and water-body specific measures that need to be refined and implemented at a local level

This River Basin Management Plan (RBMP*)* sets out the measures aimed at protecting water bodies and addressing the pressures on those water bodies considered *"At Risk"* of not meeting the desired objectives of the Water Framework Directive (WFD). The approach adopted towards implementation centers on identifying and prioritising water bodies "for action" and ensuring effective delivery of environmental standards through a co-ordinated intervention at all levels. The River Basin Management Plan outlines the new approach that Ireland will take to protect our waters over the period to 2021. It builds on the experience from the first planning cycle in a number of areas:

(1) Stronger and more effective delivery structures have been put in place to build the foundations and momentum for long-term improvements to water quality

(2) A new governance structure, which brings the policy, technical and implementation actors together with public and representative organisations. This will ensure the effective and coordinated delivery of measures.

(3)The newly-established Local Authority Waters and Communities Office(link is external) will help people to get involved in improving water quality at a local level. An Fóram Uisce, also newly established, is a forum for stakeholders, community groups and sectoral representatives. It will analyse and raise awareness of water issues.An enhanced evidence base has been developed to guide national policies and the targeting of local measures. Technical assessments of 4,829 water bodies have been carried out, examining their status (quality) and whether they are 'at risk' of not meeting status objectives in the future. Using this information, the Plan sets out national policies and regional prioritised measures to ensure the specific targets are achieved.

Among the main actions that will be taken through the Plan are:

(1) Improved waste water treatment: €1.7 billion in investment by Irish Water in over 250 waste

water treatment projects between 2017 and 2021. This will help improve water quality and prevent deterioration of quality in targeted water bodies, including 'protected areas'.

(2) Conservation and leakage reduction: Irish Water will implement important measures to make water use more sustainable and efficient, reducing leakage in our water network from 45% of all water produced down to 37% by 2021, based on 2017 figures.

(3) Scientific assessments of water bodies and implementation of local measures by 43 new, specialist, local authority investigative assessment personnel: they will carry out scientific assessments of water bodies and lead on local implementation measures.

(4) A new collaborative Sustainability and Advisory Support Programme: this partnership between the State and the dairy industry, consisting of 30 Sustainability Advisers, will promote best farming practice in 190 areas chosen for action, for up to 5,000 farmers.

(5) Dairy Sustainability Initiative to help improve water quality: 18,000 dairy farmers to receive advice on sustainable farming practices in the 190 areas for action.

(6) The development of water and planning guidance for local authorities: this will help local authorities to consider the risks to water quality during planning and development decision-making.

(7) Extension of the Domestic Waste Water Treatment Systems grant scheme: the scheme will assist with the costs of septic tank remediation in High Status water areas.

(8) A Blue Dot Catchments Programme: the new programme will create a network of excellent river and lake areas. Agencies will work together to protect or restore excellent water quality in these water bodies.

(9) A new Community Water Development Fund: this will enable and support community water initiative

As the implementation of the RBMP, under the WFD, ramps up more resources are being allocated by the state for example in the 6th of November 2018 30 Agricultural Sustainability Advisors have being employed by the state to address the 50% of waters at risk of not meeting their ecological "Good" target by 2027 however this is not relevant to the proposed project.

The "Risk" to the both Ground Water and Surface Water are now assessed under the 3rd cycle and it is that Risk Assessment that was used in the generation of this report.

The EPA Q values are more pertinent regarding empirical evidence when completing the AA process which is ratified by the detailed conservation objectives which make specific reference to the Q values when considering potential impacts on species. Neither the surface water nor the ground water is not considered an "Area for Action" under the NRBMP with the ground water considered "Good" and "not at risk" and the surface water considered "High" and "not at Risk". The proposed development will install storm water soak pits and is to connect to the Sligo Town WWTP which has excess capacity to deal with the additional loading.

From the above it can be deduced that the proposed development will not contravene either the 2006 Nitrates Regulations or the River Basins Management Plan with respect to water quality.

The Birds and Habitats regulations (September 2011) dictate a number of invasive species, and native species which are subject to restrictions (see appendix F). Given that the Natura site to the West is predominantly aquatic it is necessary to prohibit the construction of any ponds on site to

ensure compliance with the regulation. Further to this none of the species that are listed in the appendix may be introduced for the purposes of recreation or landscaping.

The National Biodiversity action Plan 2017-2021 and Irelands obligations under the UN Convention on Biological Diversity were consulted in the preparation of this report. While the proposed development does not have a positive impact on the objectives as laid out in the fore mentioned documents neither does it contravene any of those objectives either directly or indirectly. Therefore with respect to planned or contemplated nature conservation plans, initiatives or policy the proposed development is considered neutral.

In an international context (UN convention) according to the Third Global Biodiversity Outlook, issued by the Convention on Biological Diversity in 2030, there are many indications that biodiversity continues to decline throughout the world. These include:

- Species that have been assessed for extinction risk are on average moving closer to extinction. Amphibians face the greatest risk and coral species are deteriorating most rapidly in status. It is estimated that nearly a quarter of the world's plant species are threatened with extinction.
- The abundance of vertebrate species, based on assessed populations, fell by nearly a third on average between 1970 and 2006, and continues to fall globally.
- Natural habitats in most parts of the world continue to decline in extent and integrity, although there has been significant progress in slowing the rate of loss for tropical forests and mangroves, in some regions. Freshwater wetlands,sea ice habitats, salt marshes, coral reefs, seagrass beds and shellfish reefs are all showing serious declines.
- Extensive fragmentation and degradation of forests, rivers and other ecosystems have also led to loss of biodiversity and ecosystem services.
- Crop and livestock genetic diversity continues to decline in agricultural systems.
- The five principal pressures directly driving biodiversity loss (habitat change, overexploitation, pollution, invasive alien species and climate change) are either constant or increasing in intensity.
- The ecological footprint of humanity exceeds the biological capacity of the Earth by a wider margin than at the beginning of the Millennium.

Ireland's new National Biodiversity Plan contributes to the major concerted international effort conducted by the United Nations Convention on Biological Diversity to halt biodiversity loss and maintain vital ecosystem services across the globe.

More specifically Irelands main obligations under the UN Convention on Biological Diversity are is committed to measures to conserve biodiversity under the following themes:

- Conservation of ecosystems, habitats and species in their natural surroundings, both inside and outside protected areas (in situ conservation)
- Conservation of the components of biological diversity outside their natural habitats (ex situ conservation)
- Impact assessment

- Identification and monitoring
- Sustainable use of ecosystems, species and other biological resources
- Adoption of incentive measures
- Research and training
- Public awareness and education
- Policies and mechanisms for equitable sharing of benefits of genetic resources
- Facilitating access and transfer of technology
- Exchange of information
- Technical and scientific cooperation
- Access to and safe use of biotechnology
- Provision of financial resources to achieve the Convention's objectives, both nationally and to developing countries
-

The 2021 Biodiversity Target

In 2002, the Parties to the Convention, including Ireland, committed themselves to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national levels as a contribution to poverty alleviation and to the benefit of all life on Earth. This target was subsequently endorsed by the World Summit on Sustainable Development and the United Nations General Assembly and was incorporated as a new target under the Millennium Development Goals.

In 2009, the European Environment Agency (EEA) produced the first indicator-based assessment of progress towards the European 2010 Biodiversity Target and concluded that the target would not be achieved. The main conclusions from this report were:

- Some progress has been made towards halting biodiversity loss in Europe. Overall, however, the status of most species and habitats still gives rise to concern. Some threats to biodiversity have decreased while others, such as alien invasive species, remain.

- Water quality has generally improved in fresh waters and is stable in the seas, but overexploitation of marine fisheries remains a threat to the marine ecosystem. Urban sprawl and abandonment of agricultural land are putting pressure on natural and semi-natural areas. The impact of climate change is becoming more apparent. For example, more species of birds are negatively impacted by climate change than are positively affected.

- The status of freshwater systems in general is improving and the marine environment is stable, while forest cover is still slightly increasing.

- The timber harvest from European forests generally is sustainable but a stronger biodiversity focus is needed. Agriculture still exerts a high pressure on the environment despite agricultural mitigation measures and increasing organic farming. In marine

systems many fishery resources are still not being used sustainably, with some 45 % of assessed European stocks falling outside safe biological limits.

- Europe is unable to meet its consumption demands sustainably from within its own borders: demand exceeds the total capacity for biological production and absorption of waste, and this gap between demand and biocapacity has been growing progressively since 1960. Furthermore, pressures that occur outside Europe but have an impact in Europe (e.g. on migratory bird species) also need to be addressed.

Ireland, as a member of the European Union, contributes to EU-wide efforts to conserve biodiversity in the continent. Since Ireland's policies and legislation relating to biodiversity are strongly influenced by the EU, the new National Biodiversity Plan has to address not just national but also wider European issues.

The National Biodiversity Plan is not a stand-alone document. There are important relationships between this Plan and other national and international strategies and plans, including:

- United Nations Convention on Biological Diversity, under the auspices of which this Plan has been prepared, and the EU Biodiversity Action Plan;
- European Sustainable Development Strategy and Ireland's National Sustainable Development Strategy;
- United Nations Framework Convention on Climate Change, the Kyoto Protocol and Ireland's National Climate Change Strategy;
- Ireland: National Development Plan 2018-2027;
- National policies and plans for spatial planning, agriculture, forestry, fisheries, extractive industries, transport, tourism and overseas development.
- European Biodiversity Strategy 2030

Government departments and State agencies representing all the relevant sectors were consulted on a series of draft action points in advance of the preparation of this Plan, in parallel with the public consultation process.
Emanating from the above the National Biodiversity Action Plan 2017 – 2021 has identified threats and trends to Irelands biodiversity. Ireland has a comparatively low diversity of flora and fauna compared with continental Europe because of its geographic isolation. Despite this, many of our habitats are internationally important due to their scarcity elsewhere in Europe and the unique species communities found within them.

The vastly improved collection of data on biodiversity in the last decade has allowed us to build up a more accurate picture of the major pressures and threats to Ireland's biodiversity. These are similar to those faced by many other European countries and comprise direct damage, over-grazing, unsustainable exploitation (such as over-fishing), pollution and invasion by alien species. Pressures from agriculture and commercial afforestation have reduced slightly in the last few years, and pressures from housing and infrastructural development have also declined since the economic recession began in 2008. Despite the overall improvement in water quality for the

period 2004-2006, deterioration in the highest water quality waters is the major threat to biodiversity in freshwater ecosystems. The over-fishing of marine fish species is a major cause for concern and is being addressed at both national and EU levels with the NRBMP not full in force and responsible for achieving Good status for all ground and surface water by 2027.

Most pertinent to this NIS are Objectives 4 and Objectives 5 of the National Biodiversity Plan and these objectives ore outlined below.

OBJECTIVE 4: TO EXPAND AND IMPROVE ON THE MANAGEMENT OF PROTECTED AREAS AND LEGALLY PROTECTED SPECIES

HEADLINE TARGET: Biodiversity loss of the most important habitats and species halted by 2015, these habitats and species showing substantial recovery by 2020. This tagget has in the main been missed and will now be extended due to the increasing impetus and public awareness of the importance of Bio diversity.

TARGET: Natura 2000 network established, safeguarded, designated by 2012 (2014 for marine SPAs) and under effective conservation management by 2015.

The EU have now stated that as of 2021 it is their intention to extended the Natura sites network with the aim of setting aside 30% of land areas for bio – diversity. These plans are in their infancy with the increased areas not yes designated however once established they will be given legal protection by means of directives at an EU level potentially in 2022.

Complete identification and notification of SACs and SPAs, their transmission to the European Commission and formal designation, in particular for marine coastal and offshore SACs by 2012 and SPAs by 2014.

Prepare and implement site specific conservation objectives, management advice and /or plans with particular reference to Natura 2000 sites, Nature Reserves and National Parks in consultation with affected landowners and the public by 2013

Provide and implement guidelines for Local Authorities and other planning bodies on the protection of species listed in Annex IV of the Habitats Directive

Work with the EU Commission to ensure that the Community funding instruments are used to ensure adequate financing for Natura 2000; identify national priorities for co-financing; develop national programmes for allocation of financing; disburse funds (national and Community) to beneficiaries; monitor cost effectiveness of actions financed (in terms of biodiversity outcomes); audit expenditure.

TARGET: Sufficiency, coherence, connectivity and resilience of the protected areas network substantially enhanced by 2015 and further enhanced by 2021. It is now proposed by the EU to increase the Natura new work designated areas and give them protection under Directives post 2021 with the 30% land area designated well before 2030.

By 2015, review previously proposed Natural Heritage Areas and designate as appropriate under the Wildlife (Amendment) Act, 2000. Elaborate and publish a framework for the selection and

designation of future Natural Heritage Areas, taking into account the views of interested parties.

By 2015 strengthen the coherence, connectivity and resilience (including resilience to climate change) of the protected areas network using, as appropriate, tools that may include fly ways, buffer zones, corridors and stepping stones (see also related actions in 3.5).

TARGET: No protected habitats or species in worsening conservation status by 2015; majority of habitats or species in, or moving towards, favourable conservation status by 2020

Cease turf cutting on raised bogs in line with Government decision of 2010.

By 2015 implement existing species action or management plans for species under threat and review and update as necessary; elaborate and implement additional species action or management plans for a wider range of species under threat; ensure monitoring of implementation and effectiveness of plans.

Continue to implement programme of measures to improve the status of habitats and species assessed as "bad" in the 2007 report under to the EU on the status of protected habitats and species, involving habitat action plans if necessary, and by 2015 have in place a full prioritised programme of work.

By 2012 identify and subsequently fill critical gaps in ex-situ conservation programmes for wild species, in line with best practice.

Ensure that agri-environmental schemes provide targeted and costed prescriptions that will ensure favourable conservation status in farmed designated sites.

OBJECTIVE 5: TO CONSERVE AND RESTORE BIODIVERSITY AND ECOSYSTEM SERVICES IN THE WIDER COUNTRYSIDE

HEADLINE TARGET: In the wider countryside biodiversity loss reduced by 2015 and showing substantial recovery by 2025.

TARGET: Optimise use of opportunities under agricultural, rural development and forest policy

Develop measures in the 2021-2025 National Rural Development Plan for the protection and enhancement of ecosystem services and biodiversity

Define criteria in order to identify High Nature Value areas, develop measures to address threats

Ensure effective implementation of cross-compliance, statutory management requirements and forest service guidelines/requirements to ensure conservation of biodiversity.

Conduct a systematic evaluation process for any agri-environmental schemes delivered, involving a robust monitoring programme.

Review the control of overgrazing and undergrazing using a) Commonage Framework Plans and b) other appropriate measures.

Continue to promote the native Woodland Scheme which features establishment and conservation

elements aimed at encouraging the development and conservation of native woodlands.

Consider alternative forestry management options which aim to deliver additional multiple forestry benefits.

Strengthen measures to ensure conservation, and availability for use, of genetic diversity of crop varieties, livestock breeds and races, and of commercial tree species in and promote in particular their in situ conservation.

All public bodies will endeavour to use native species, landraces and breeds and the public will beencouraged to do so.

Maintain the current NPWS farm plan scheme but explore options for migrating it to a higher tier in a DAFF agri-environmental scheme.

TARGET: Substantial progress made towards 'good ecological status' of freshwaters by 2027

TARGET: Principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2027

Ensure implementation of operational monitoring programmes, publication of River Basin Management Plans and establishment and implementation of River Basin District Programmes of Measures, in line with provisions of the Water Framework Directive.

Continue investment in Water Service Investment Programme.

Significantly reduce pollutant pressures on terrestrial and freshwater ecosystems through implementation of relevant EU Thematic Strategies and Directives (e.g. Water Framework Directive, Sustainable Use of Pesticides and Nitrates).

Biodiversity loss and optimise biodiversity gains, by 2021,

Ensure Flood risk management plans for each river basin optimise benefits for biodiversity through the maintenance and/or restoration of floodplains, the promotion of sustainable land use practices and the improvement of water retention as well as the controlled flooding of certain areas as far as possible.

Continue to ensure that all significant drainage, including both initial drainage and maintenance drainage, will require assessment of its implications for biodiversity and particularly for wetlands.

TARGET: Control of harmful invasive alien species and reduced risk of spread of new species

Prepare, by 2011, detailed species and pathway risk assessments and develop exclusion and contingency plans for priority pathways and high impact species that are likely to invade Ireland. Continue and enhance measures for eradication, where feasible, control and containment of invasive species.

TARGET: To ensure effective hedgerow and scrub management by 2015

Review options on regulation of hedgerow and/or scrub removal and produce guidelines on hedgerows/scrub biodiversity, which would, inter alia, encourage best practice for hedgerow/scrub management for wildlife throughout the country and ensure that appropriate

sanctions for unauthorised removal of hedgerows/scrub are applied.

TARGET: Rehabilitation or restoration of biodiversity elements
Identify areas of biodiversity value, or biodiversity hotspots, within Bord na Mona lands by 2015.
Develop habitat maps and rehabilitation plans for all Bord na Mona bog areas by 2015. By 2015 create a network of biodiversity areas within Bord na Mona sites.
Although the deadline was missed peat harvesting and peat based electricity generation had completely ceased as of 2020 with the restoration of those Bog (re wetting) initiated.
Continue the programme of re introduction of large raptors.

Minimise soil sealing, sustain soil organic matter and prevent soil erosion through timely implementation of key measures in the forthcoming Thematic Strategy for soil protection.

Continue to increase the native woodland cover by 30%.

Develop, adopt and implement restoration programmes for salmon, sea trout and eels.

TARGET: Improve legislation and enforcement by 2021

Prepare and enact a consolidated Wildlife Act by 2021

By 2013 introduce legislation to provide a legal basis for National Parks (and other heritage properties) and, if necessary, introduce a National Parks and Heritage Properties Bill.

Introduce legislation to substantially reduce the risk to wildlife caused by the use of poisons in the environment.

Introduce revised forest legislation which will support the conservation, protection and sustainable management of forest biological diversity.

Include in the Birds and Habitats Regulations measures to prevent the import, movement, sale, distribution or release of invasive alien species, while advising on species considered safe alternatives.

Enhance the role of An Garda Siochana and Customs in enforcing Wildlife legislation, through, among other actions, the provision of specific training and guidance.

Ensure adequate training in Wildlife Crime detection and enforcement is provided to all NPWS enforcement staff. NPWS enforcement staff will investigate along with An Garda Siochana and Revenue (Customs) officials (as appropriate) suspected and alleged wildlife crime affecting biodiversity.

EU Biodiversity Strategy for 2030

The European Commission has adopted the new EU Biodiversity Strategy for 2030 and an associated Action Plan (annex) - 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

Objectives

The biodiversity strategy aims to put Europe's biodiversity on the path to recovery by 2030 for the benefit of people, climate and the planet. In the post-COVID-19 context, the strategy aims to build our societies' resilience to future threats such as

- the impacts of climate change
- forest fires
- food insecurity
- disease outbreaks - including by protecting wildlife and fighting illegal wildlife trade

Actions

The strategy contains specific commitments and actions to be delivered by 2030.

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 enable the necessary transformative change

The strategy highlights unlocking funding for biodiversity, and setting in motion a new, strengthened governance framework to

- ensure better implementation and track progress
- improve knowledge, financing and investments
- better respecting nature in public and business decision-making

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 theEuropean Green Deal. In preparing the EU Biodiversity Strategy we drew on a vast amount of scientific evidence on biodiversity loss, especially the landmark 2019 IPBES report, and evidence is growing by the day. The 2020 'State of Nature in the EU' report found that 81% of EU protected habitats and 63% of EU protected species are in "poor" or "bad" conservation status. Overall, Europe's protected habitats and species continue to decline at an alarming rate because the multiple pressures they face are simply too great to enable their recovery. Without decisive action, this continued loss will have massive economic repercussions. The latest studies confirm that over half of global GDP is dependent on high-functioning biodiversity and ecosystem services and that globally, one fifth of countries are at risk of their ecosystems collapsing, compromising food security, clean water and air, and flood protection. This is why the EU Biodiversity Strategy is now a central element of both the EU Green Deal and the EU Recovery Plan. Its ambitious targets for nature protection and restoration should lead to a better balance between nature and economic activities, contributing to a transformational change that will filter through to all parts of society, ensuring the health and prosperity of people and nature. We can make this happen if we take a whole-society approach, with action from all stakeholders across all sectors and at all levels. We are working to bring everyone on board to deliver the Biodiversity Strategy – land owners and land users, such as farmers, foresters, fishers; businesses and consumers; civil society organisations, and citizens across the EU. To this end, one important part of the Strategy focuses on strengthening the EU's biodiversity governance framework to make it as transparent and participatory as possible. Enabling also needs funding: we are using all tools at our disposal to unlock, as a minimum, EUR 20 billion/year for biodiversity through various sources, including all EU funds, national and private funding, supported by tools such as the Taxonomy, improved biodiversity tracking for EU funding, Invest EU, and much more besides. With the Biodiversity Strategy, the EU is leading the way. But the biodiversity crisis is a global crisis. That is why we will negotiate an ambitious global framework to protect biodiversity across the globe at the next Conference of Parties of the UN Biodiversity Convention in China. Working together with the Member States and the EU External Action Service, we will use the full diplomatic weight of the EU to lead the way for global action. We owe it to nature, to people and to future generation

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 utilization 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.

In addition to the above the following Directives, policies, legislation and plans were also considered.

(i) Bathing Waters Directive
(ii) Birds Directive
(iii) Habitats Directive
(iv) Drinking Waters Directive
(v) Major Accidents and Emergencies Directive
(vi) Phosphate Regulations
(viii) Sewage Sludge Directive
(ix) Urban Waste Water Treatment Directive
(x) Plant Protection Products Directive
(xii) Nitrates Directive
(xiii) Integrated Pollution Prevention Control Directive
(xiv) Freshwater Pearl Mussel sub-basin plan
(xv) Species Actions Plans (NPWS)
(xvii) Conservation Objectives
(xviii) Shellfish Pollution Reduction Plan
(xxiv) Sligo County Council County Development Plan 2017 – 2023 and 2023 - 2029

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 spies of interest for both largely confined to the tidal, inter tidal, supra tidal, marine or dune systems for both.

7 MITIGATION MEASURES / COMPENSATION MEASURES

7.1 Introduction

The mitigation measures are segregated into (I) Construction and (ii) habitation / use. This is essential to facilitate the Local Authority in conditioning certain activities for each phase of the development should planning permission be granted. It should be noted that the conditioning of any of the mitigation measures puts those measures on a legally enforceable footing.

Construction

(1) 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.

(2) 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.

(3) 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.

(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 such as 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 when compared to other forms of lighting.

(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.

Occupation / Use

(1) Control of weeds within the recreational areas shall be performed manually. Where moss is to be controlled Sulphate of Iron only may be used (3 in 1 application such as weed, feed and moss killer is prohibited).

(2) None of the botanical species as listed in appendix F shall be used for the purposes of landscaping.

8. PLANNED OR CONTEMPLATED NATURE CONSERVATION

Cognisance has being taken of the All Ireland Species Action Plans and the available threat response plans for the relevant species in the report. The National Biodiversity Action Plan 2017-2021 and Irelands obligations under the UN Convention on Biological Diversity and European Biodiversity strategy 2030 were al considered in the preparation of this report. While the proposed development does not have a positive impact on the objectives as laid out in the fore mentioned documents neither does it contravene any of those objectives either directly or indirectly.

The proposed development does not have any implications for the phosphate regulations, nitrates directive, water frame work directive and the western basins management plan. In addition the proposed development does not have any implications for the birds and habitats regulations (September 2011) and does not contravene the conservation objectives for the Natura sites within the potential impact zone. No significant direct or indirect impacts on the features of interest for the the SAC and SPA are predicted or anticipated.

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9 CONCLUSIONS

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 species (see section 6) or habitats. There are no undesignated annexed habitat types present on the proposed development site. The proposed project would not increase or exacerbate the 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 does 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.

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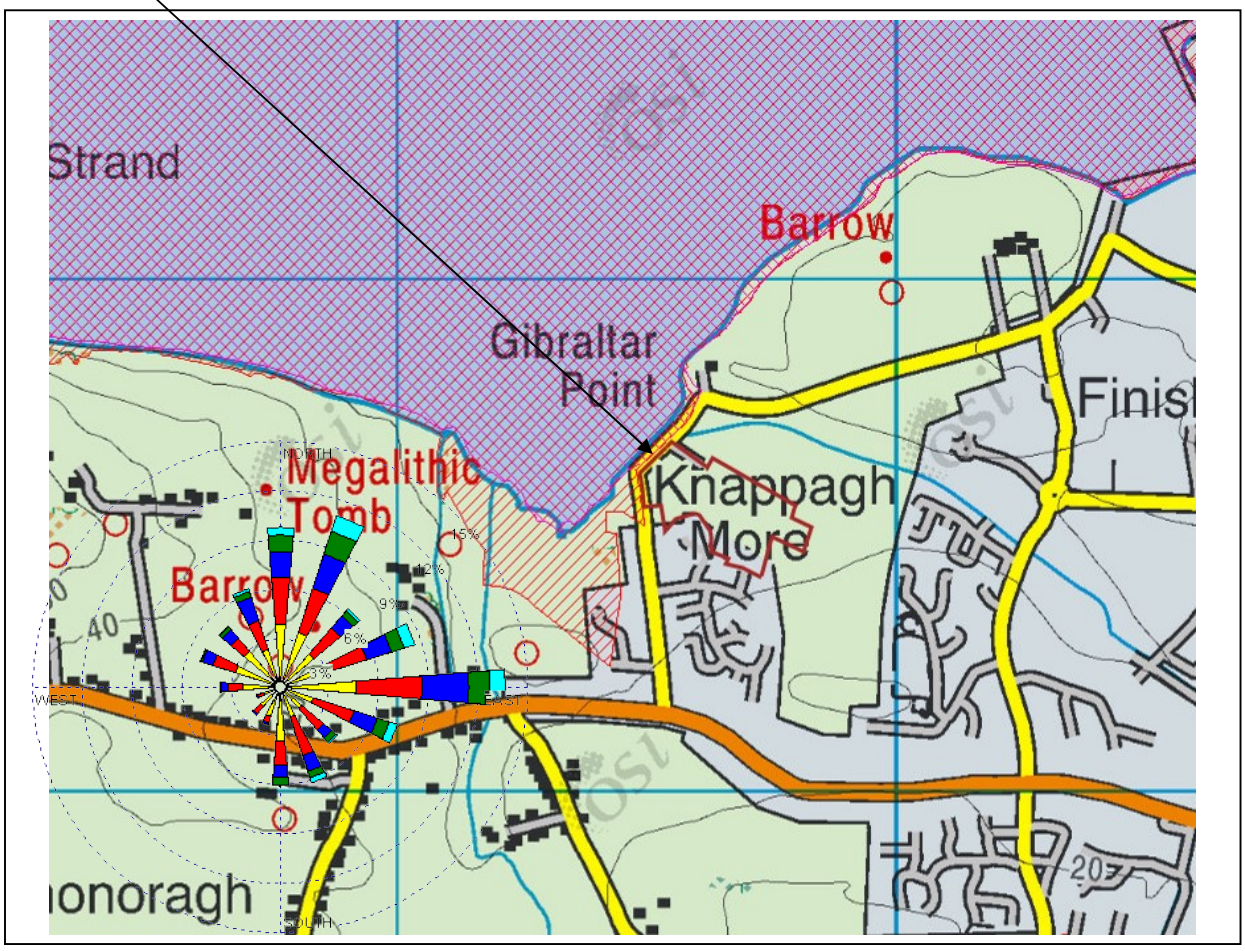
APPENDIX A

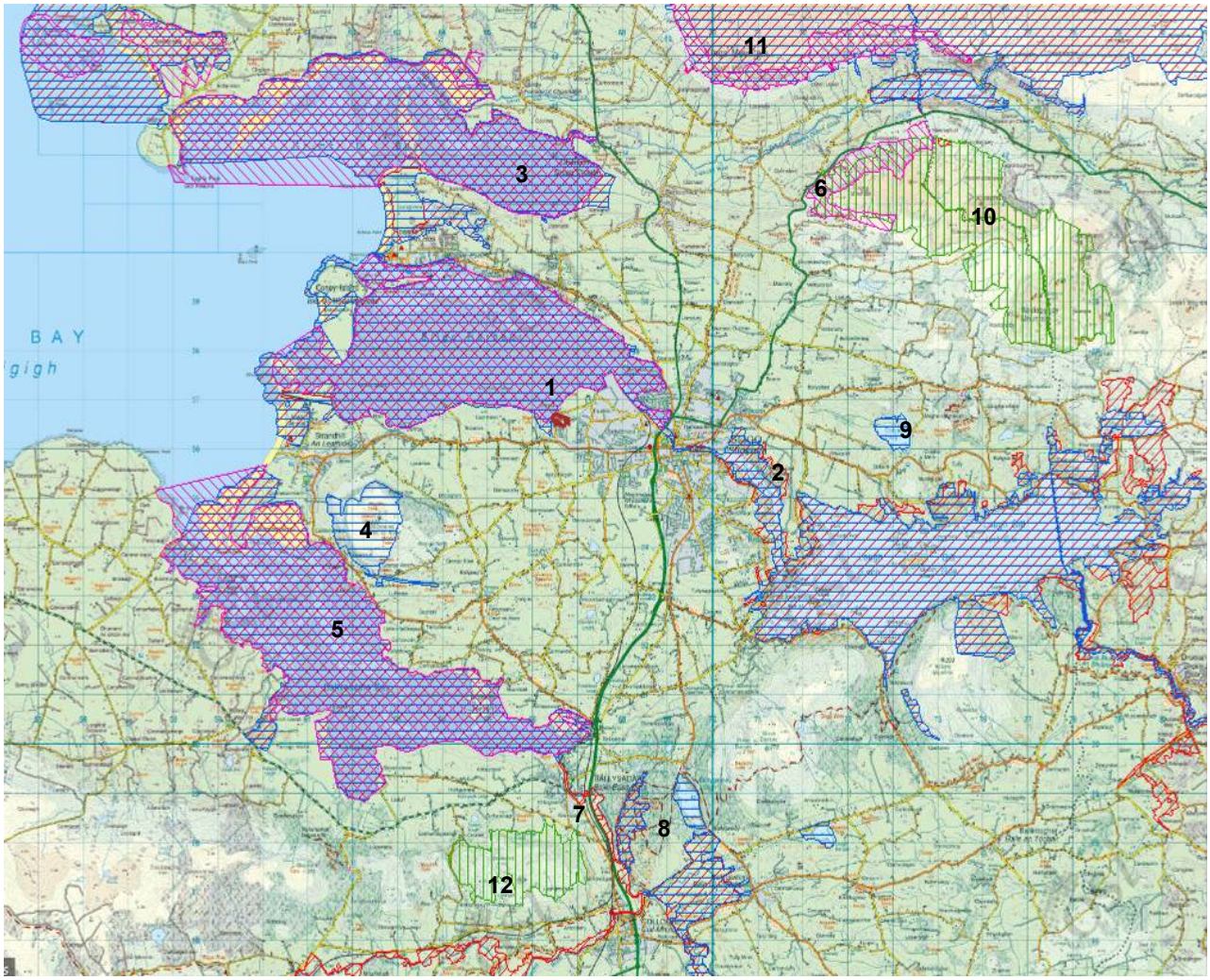
As part of the planning process Sligo County Council would consult with NPWS. To avoid duplication consultation with NPWS will be via that mechanism.

APPENDIX B

Site Location

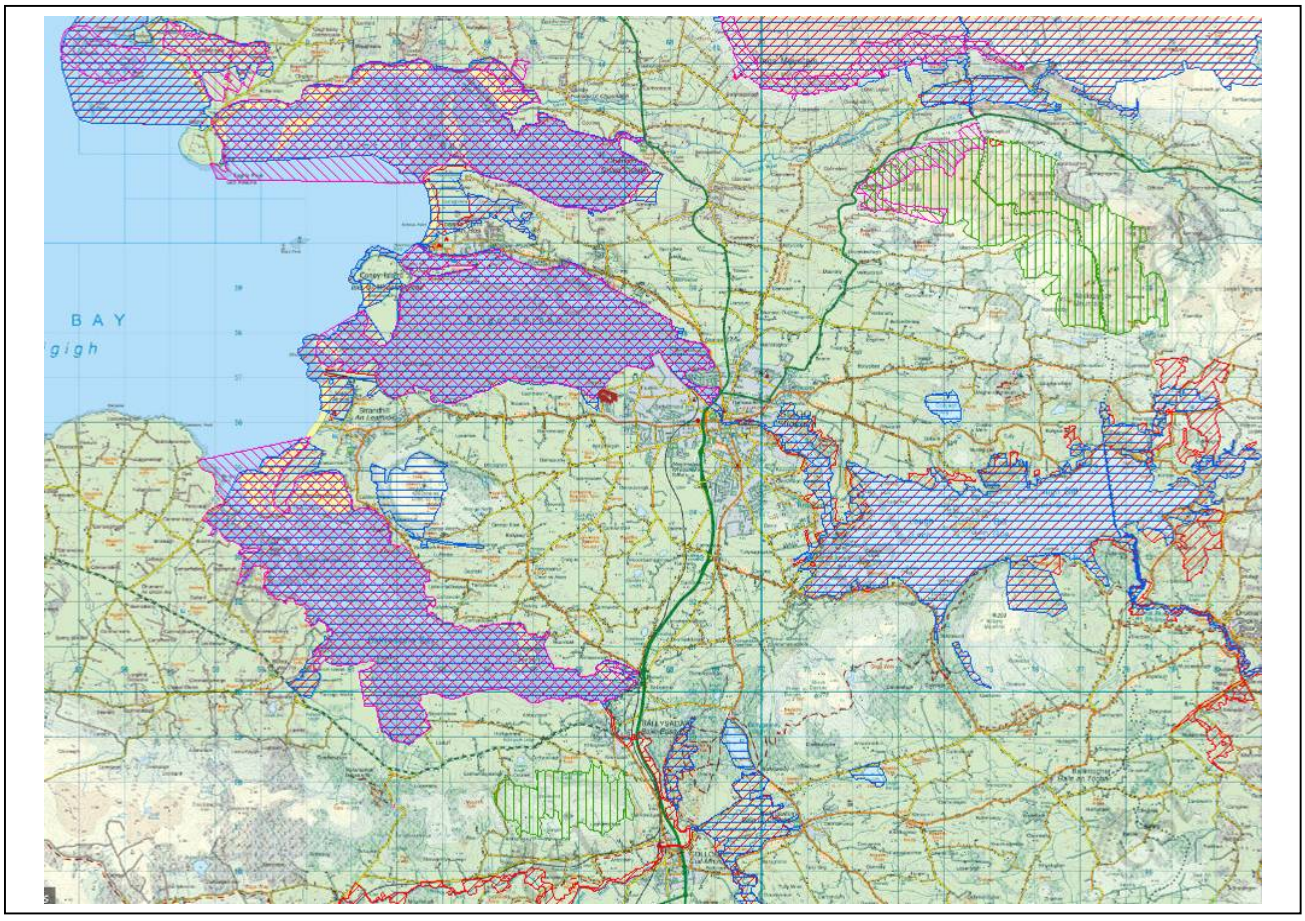


Map 1a: Designated Natura sites within 15Km



(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

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 semi urban site is located in the town land of Knappagh More with an address at Second Sea Road, Sligo, Co. Sligo. It is located North of Ailsbury Park housing estate, South of Gibraltar point and 2.273Km West of the Sligo Town N4 bridge across the Garavogue at grid reference 566575, 636585.

Phase 1 of Residential Development consists of 98 No. residential units made up of

9 No. – Type A– 4 Bed Semi Detached/Detached Houses
4 No. – Type A1 – 5 Bed Semi Detached Houses
59 No. – Type B/B1 – 3 Bed Semi Detached/Terraced Houses
3 No. – Type C – 2 Bed Apartments
14 No. – Type D – 1 Bed Semi Detached/Terraced Bungalow Houses
6 No. – Type E – 2 Bed Semi Detached Bungalow Houses
3 No. – First Floor Apartments within the Creche Building

d) Proposed Creche with associated landscaping and surface car parking,
e) On site waste water pumping station
f) All landscaping, boundary treatments, entrance improvements, all associated site works and service connections.

Phase 2 of Residential Development consists of 31 No. residential units made up of

2 No. – Type A– 4 Bed Semi Detached/Detached Houses
1 No. – Type A1 – 5 Bed Semi Detached Houses
10 No. – Type B – 3 Bed Semi Detached Houses
6 No. – Type C – 2 Bed Apartments
1 No. – Type D – 1 Bed Semi Detached/Terraced Bungalow Houses
1 No. – Type E – 2 Bed Semi Detached Bungalow Houses
10 No. – Type F/F1 – 4 Bed Detached Houses

(a) All landscaping, boundary treatments, entrance improvements, all associated site works and service connections.

The site layout has been sensitively designed such that the associated green areas are located between the proposed structures and the Sea Road with the Natura sites on the opposite side of the Sea Road. This dictates that the proposed dwellings back onto the green area with the associated street lighting requirements shielded from the bay area by the proposed dwellings and green area.

The site is fully serviced with the finished project to connect to all the existing ESB, Sewer, water mains, storm water and telecommunication infrastructure. It is proposed to formulate a commensurate CEMP to be agreed with Sligo County Council prior to commencement of the development with the CEMP to address all the construction related and ancillary activities for

example construction traffic management, construction car parking, delivery of raw materials, storage of raw materials, storage of aggregates, excavated soil / sub soil management, segregation and storage of waste construction materials, permitted disposal of wastes, construction workers sanitary facilities, storage of hydrocarbons, refuelling areas, protection of surface water features (silt traps / fences), pouring of concrete etc. A copy of the preliminary proposed CEPM is included with the application and should be referenced in conjunction with this document. The CEPM Measures will also cater for the protection of surface water features with respect to surface water run off during construction, suspended solids, aggregate storage and silting management, hydrocarbon management, protection of surface water features and spill protection / management. Where aggregate for the purposes of fill is required it is to be sourced in a quarry that is registered under section 261/261A of the 2000 planning and development act or have a grant of planning under that act. The quarry / s that are used for the supply of aggregate shall be free from invasive botanical species.

Construction and demolition waste shall not be used on site. No maintenance of heavy plant would occur on site with all preventative maintenance carried out prior to entry to the site. Excavated soil / sub soil material would not be stockpiled on site provided and would be either temporarily reseeded with grass or mechanically sealed during the stockpiling process or removed off site for appropriate disposal in a licensed facility. All empty packaging would be stored in appropriate containers for disposal as required. Batch concrete trucks are prohibited from the washing out of the drum on site – which is now industry standard. The restricted species as listed in appendix of this report would not be utilised or introduced for the purposes of landscaping or any other purposes.

Watertight containers would be provided for the storage of empty chemical containers which shall be removed off site and disposed of appropriately as required.

No in stream works are associated with the development. The duration of the construction phase of the project is anticipated to take circa 2 - 3 years from breaking ground to completion. This will require cut and fill for the foundations (raft with no strip or piling proposed) and will require removal of soil / sub soil off site for appropriate disposal where it cannot be reworked within the development site boundary. The proposed site management, excavation, construction and insitu casting are all to be carried out in accordance with the Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters" produced by Inland Fisheries Ireland. Storm water from the proposed development may be discharged to the existing surface water features through petrol interceptors. Post completion there will be a requirement for LED street lighting.

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 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

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 overleaf).

This has resulted in large sections on the site being classified as ED3 – bare soil >50% 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.

1.3.3 Fauna.

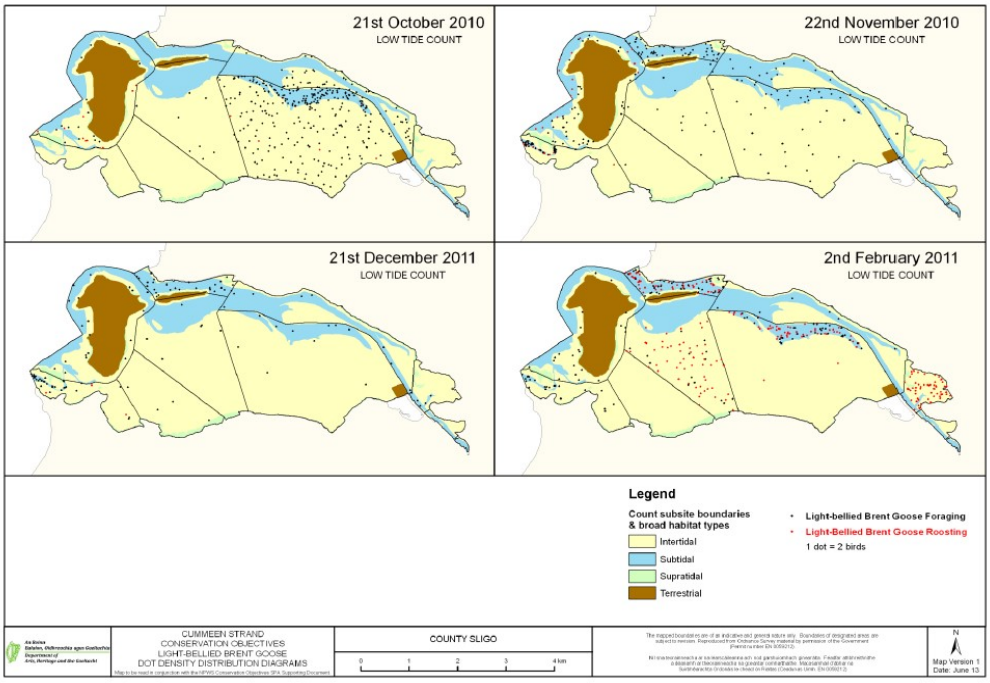
There was no direct or indirect evidence of any mammalian species for which the SAC was designated present in the location of the proposed development. This was not unanticipated given the continual anthropogenic activity in the area and the sites location within an urban environment.

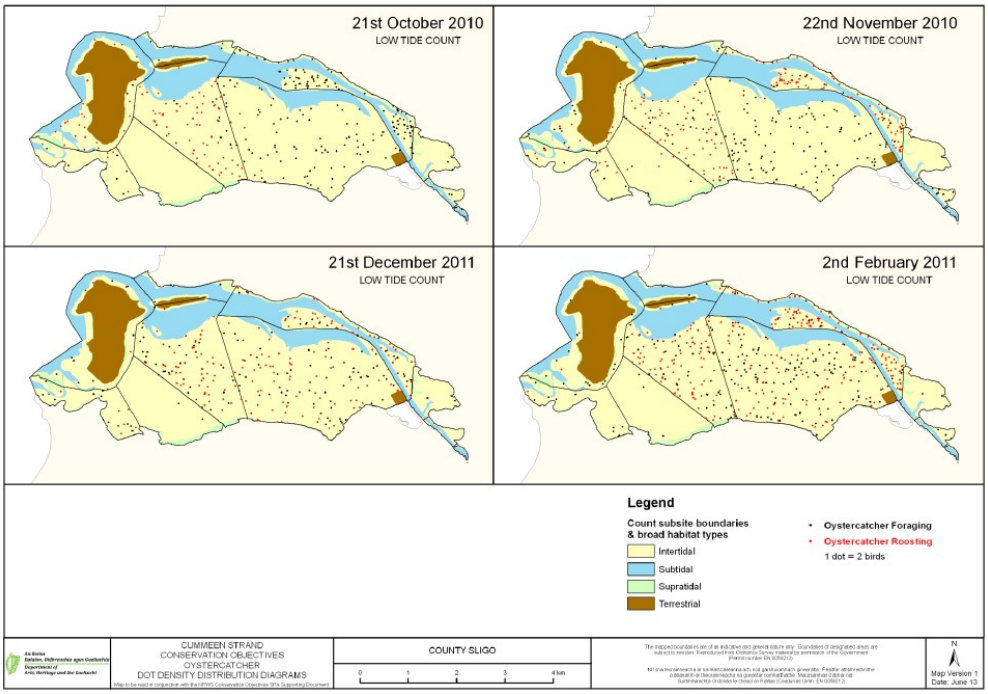
1.3.4 Avian species.

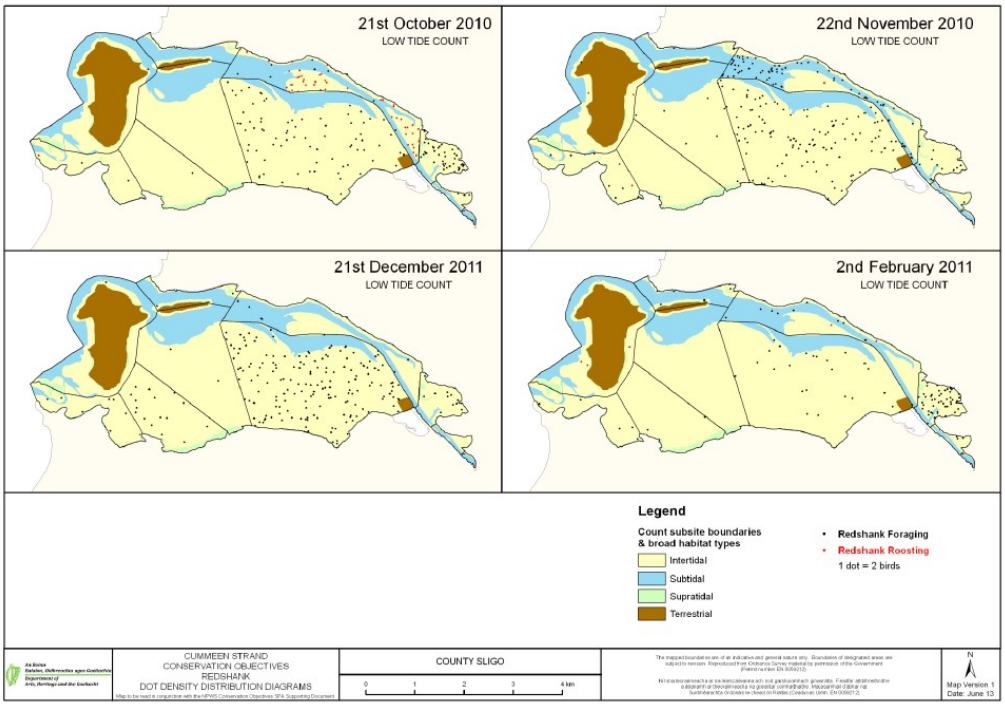
Although the normal ubiquitous avian species were observed no annexed avian species were recorded in the location of the proposed development nor would any be anticipated. The BL3 habitat combined with the presence of the adjacent housing estate with the potential for predation / disturbance from domesticated 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 are or would be proposed at this location nor would the existing disturbance activities be exacerbated or increased.
The last survey of the annexed avian species occurred between 2010 and 2011 and was performed by NPWS. 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
Light-bellied Brent Goose Foraging
Light-Bellied Brent Goose Roosting
1 dot = 2 birds
CUMMEEN STRAND
CONSERVATION OBJECTIVES
LIGHT-BELLIED BRENT GOOSE
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
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



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.

(x) The site was previously reclaimed with no natural habitat remaining

(xi) 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.

(xii) Traffic movement along the sea road.

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

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

(xv) Semi Urban setting of the proposed development site

(xvi) The impact of the wild mink population predating on ground nesting / roosting species.

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

(xviii) 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.

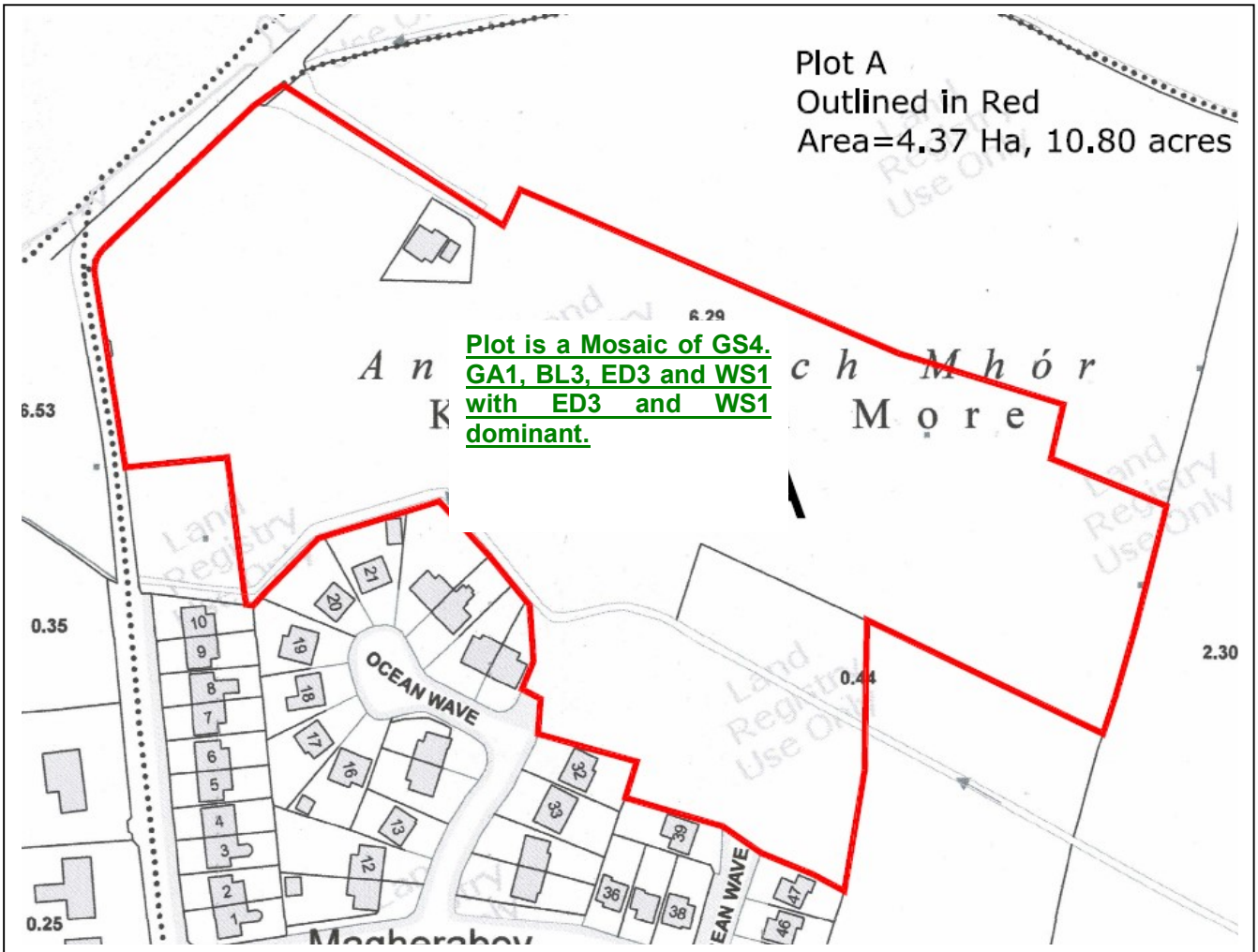
1.3.6 Entomology.

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



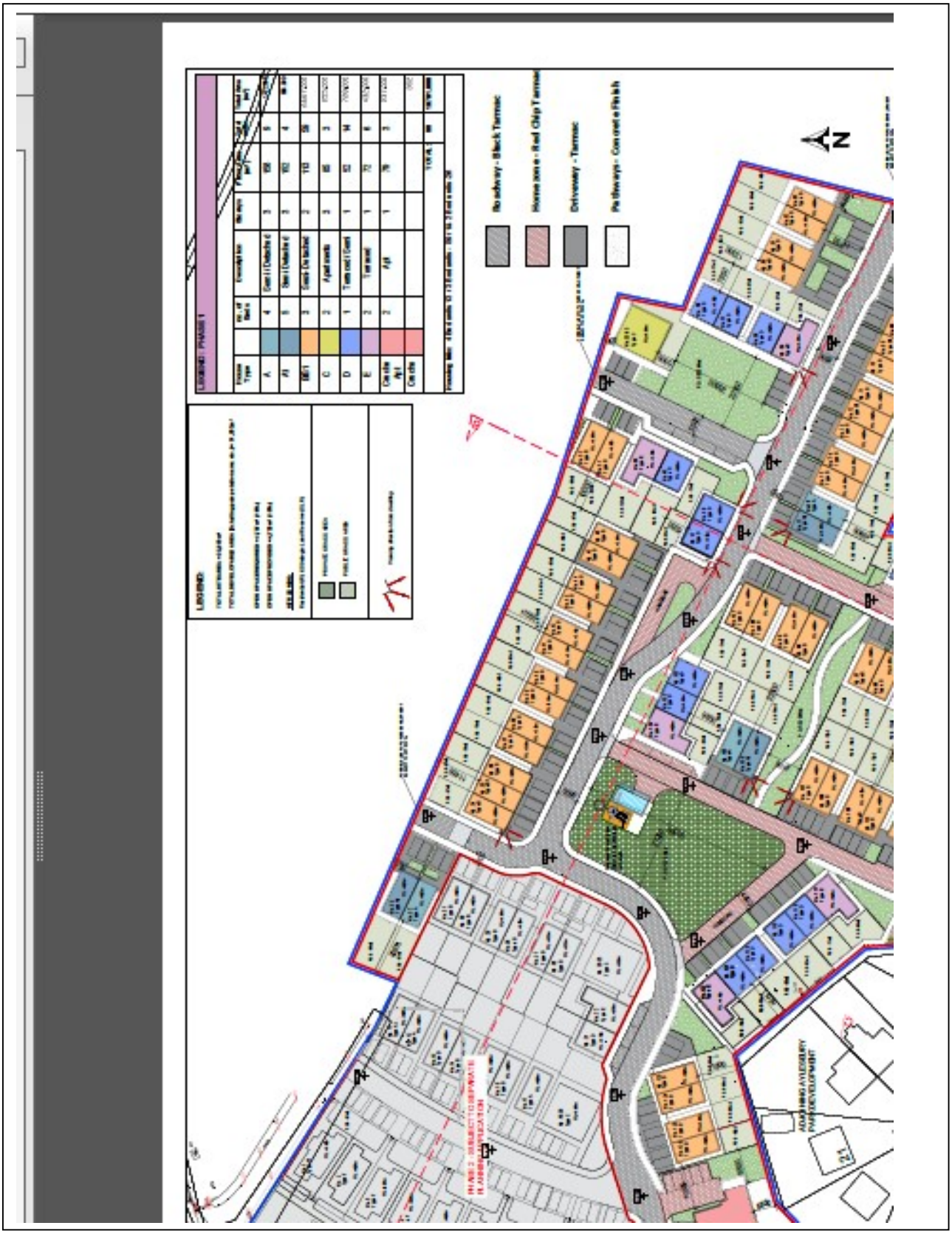
Ornamental / Non native shrubs (WS1)

Wet grassland (GS4)

Drainage ditches (FW4)

Hedgerows (WL1)

Buildings and Artificial surfaces (BL3)


Roadway - Black Tarmac
Homezone - Red Chip Tarmac
Driveway - Tarmac
Pathways - Concrete Finish
N

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 limpet *(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

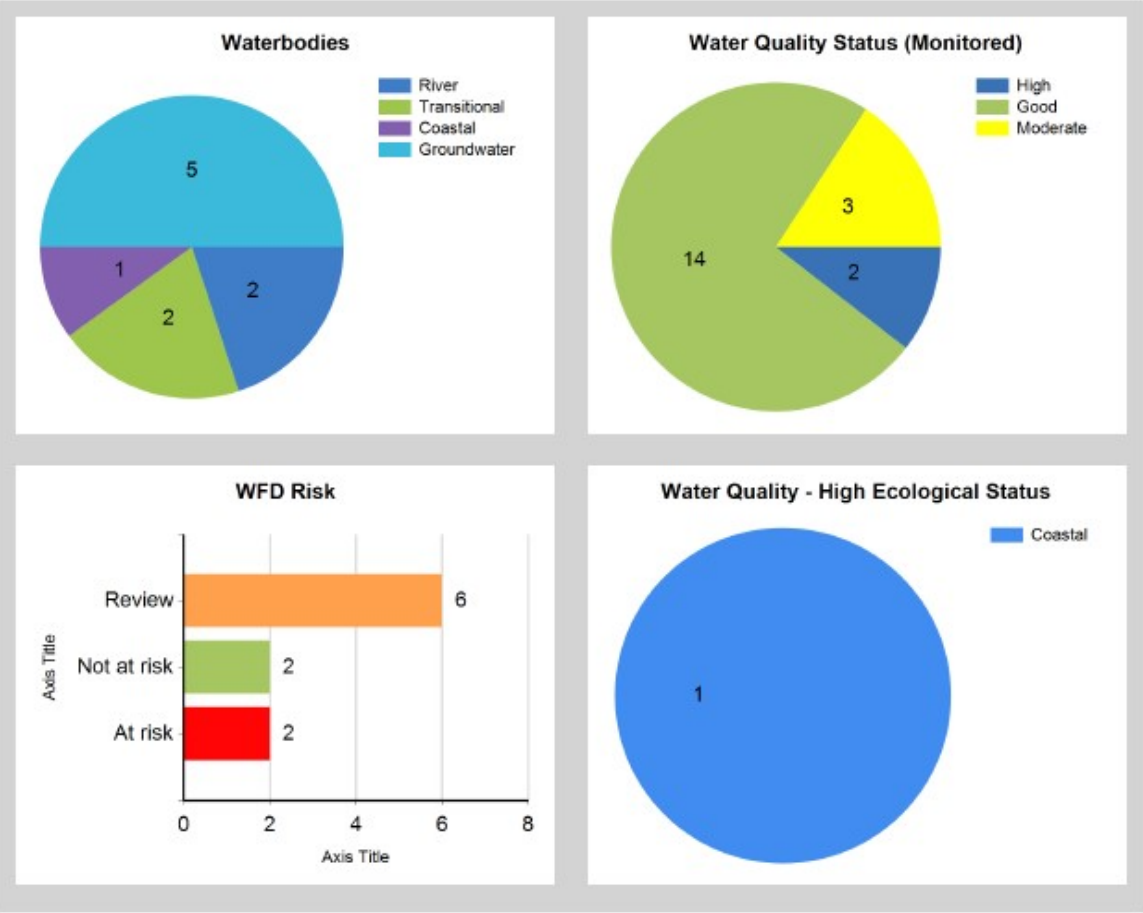
Subcatchment
CARROWGOBBADAGH_SC_010

Code 35_1

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.

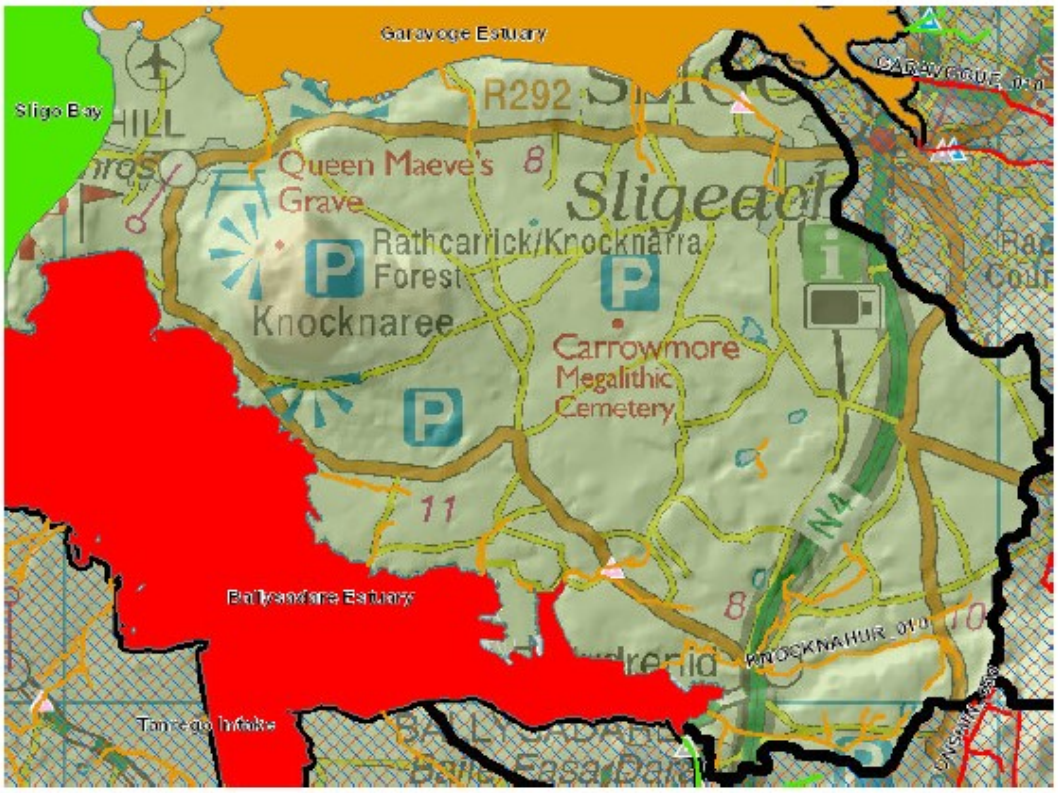


2

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

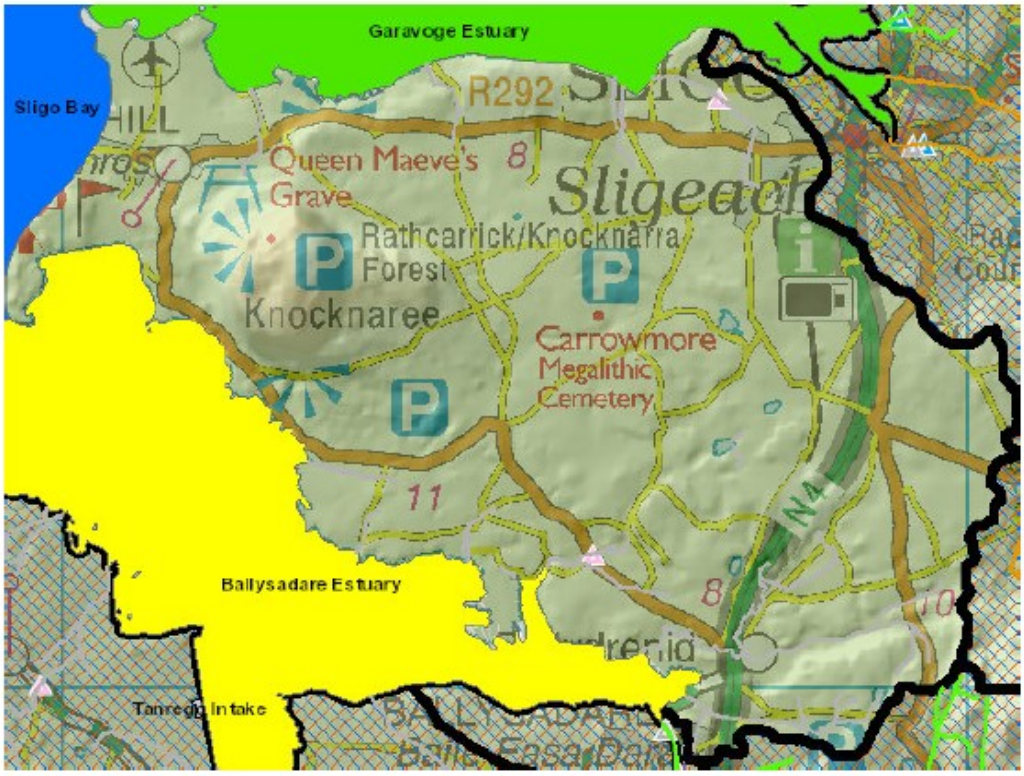


River And Lake Waterbodies: WFD Risk

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