27th January 2011.

Administration
Environmental Licensing Programme
Office of Climate, Licensing & Resource Use
Environmental Protection Agency
Headquarters
P.O. Box 3000 Johnstown Castle Estate
County Wexford

RE: WASTE WATER DISCHARGE LICENCE APPLICATION:
D0367-01 – DOOGORT

Dear Ms. Wylde

Further to your letter of 16th December 2009, I enclose the required responses to the queries raised in the correspondence.

For clarity, the responses have been made point by point with the answers to the queries raised indicated in blue.

This documentation includes:
- 1 no. signed copy & 1 no. copy in hardcopy format of the documentation
- 1 no. copies of all files in electronic searchable PDF format on CD-ROM

The content of the electronic files on the accompanying CD-ROM is a true copy of the original documentation.

Yours sincerely

Paddy Mahon
Director of Services

www.mayococo.ie

Mayo County Council
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MAYO COUNTY COUNCIL

DOOGORT

WASTE WATER DISCHARGE LICENCE

APPLICATION

Regulation 16 Compliance Requirements

Regulation 16 Compliance Responses January 2011
REGULATION 16 COMPLIANCE REQUIREMENTS

Question No. 1

The application states that the wastewater treatment plant at Doogort has a design capacity of 700 population equivalent. Clarify the current population equivalent being treated at the plant

Answer No. 1

The current population equivalent was calculated as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>140 houses @ 3 PE per house</td>
<td>420</td>
</tr>
<tr>
<td>This includes several estates of holiday homes</td>
<td></td>
</tr>
<tr>
<td>Assuming 80% occupancy rate this PE can be reduced to</td>
<td>330</td>
</tr>
<tr>
<td>2 Pubs</td>
<td>40</td>
</tr>
<tr>
<td>2 Caravan Parks estimated at</td>
<td>100</td>
</tr>
<tr>
<td>Assuming 50% occupancy rate this PE can be reduced to</td>
<td>50</td>
</tr>
</tbody>
</table>

Total: 420 PE

Even at full occupancy 560 PE would be the maximum that would be achieved which is well within the design capacity of 700 PE.

Question No. 2

Carry out an appropriate assessment of the implications of the discharge from the Doogort wastewater treatment plant for the designated site (CroaghaunSlievemore SAC, site code 001955) in view of the sites conservation objectives.

The Circular L8/08 "Water Services Investment and Rural Water Programmes - Protection of Natural Heritage and National Monuments" issued by the Department of the Environment, Heritage & Local Government should be referred to. In particular, the flow diagram in Appendix 1 should be completed and the results provided.

The Agency's Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 should be consulted when carrying out the appropriate assessment.

Answer No. 2

A Copy of the ‘Screening for Natura Impact Statement (Appropriate Assessment) of Doogort Wastewater Discharge Licence Application 2011’ can be found in Attachment F.1., submitted as part of this further information request. No Appropriate Assessment was required.
MAYO COUNTY COUNCIL

DOOGORT

WASTE WATER DISCHARGE LICENCE APPLICATION

Regulation 16 Compliance Requirements

ATTACHMENT F.1

Screening for Natura Impact Statement (Appropriate Assessment) of Doogort Wastewater Discharge Licence Application January 2011
SCREENING FOR NATURA IMPACT STATEMENT
(APPROPRIATE ASSESSMENT)
Of
DOOGORT WASTEWATER DISCHARGE LICENCE
APPLICATION
2011

In accordance with the Waste Water Discharge
And
Article 6(3) and 6 (4) of the
Habitats Directive 92/43/EEC
1. INTRODUCTION

Mayo County Council, Aras an Chontae, Castlebar, County Mayo made an application to the Environmental Protection Agency (EPA) for a Waste Water Discharge Licence, for the Doogort Wastewater Treatment Plant & Agglomeration, in compliance with the Waste Water Discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007), in June 2009.

Under Part II Schedule 6 (5) of the Wastewater Discharge (Authorisation) Regulations 2007, In considering an application, where it appears to the Agency (i.e. Environmental Protection Agency) that the discharge concerned, or the proposed discharge, as the case may be, is likely to have a significant effect on a European site, either alone or in combination with other operations or activities, the Agency shall cause an assessment to be made of the implications for the site in view of that site’s conservation objectives, and the Agency in deciding on the application shall have regard to the conclusions of the assessment.

The WWTP at Doogort has a population equivalent of 700 and was built in 1999. Treated effluent is discharged into Blacksod Bay through a sea outfall pipe. There are three Special Area of Conservations (SAC) within 3km of discharge points – Doogort Machair/Lough Doo SAC/pNHA (Site Code 001497), Croghaun/Slievemore SAC/pNHA (Site Code 001955) and Keel Machair/Menaun Cliffs SAC/pNHA (Site Code 001513) (see Figure 1.1 below). There are no Special Protection Area for Birds (SPAs) located within 3km of discharge points.

This report includes:

1. Screening of the proposed plan in order to determine whether an Appropriate Assessment is required.

2. If required, an Appropriate Assessment which evaluates the potential impacts of the Wastewater Treatment Plant discharges on the Natura 2000 site and identifies proposals so that adverse effects are avoided.

Purpose of Appropriate Assessment

Articles 6(3) and 6(4) of the Habitat Directive 92/43/EEC require an Appropriate Assessment of plans to prevent significant adverse effects on Natura 2000 sites.

Article 6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect there on 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.

Article 6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of the Nature 2000 site is protected. It shall inform the Commission of the compensatory measures adopted.
The purpose of this assessment is to address the potential impacts of discharges from the Doogort sewerage scheme and associated discharges on the conservation objectives of the Natura 2000 Sites – Doogort Machair/Lough Doo SAC/pNHA (Site Code 001497), Croaghaun/Slievemore cSAC (Site Code 001955) and Keel Machair/Menaun Cliffs SAC/pHNA (Site Code 001513) (see Figure 1.1 below).

The screening/appropriate assessment must determine whether the project is likely to have significant adverse effects on this site either along or in conjunction with other plans and projects in the area and whether these effects will adversely affect the integrity of the site in terms of its nature conservation objectives.

Figure 1.1 - Location Map – Doogort WWTP and associated discharges and adjacent Natura 2000 sites.
2. APPROPRIATE ASSESSMENT - THE PROCESS

According to European Commission Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EC (2001) and MN2000, the assessment requirements of Article 6 establish a stage-by-stage approach as follows:

Stage 1 - Screening for a likely significant effect: An initial assessment of the project or plans effect on a European site(s). If it cannot be concluded that there will be no significant effect upon a European site, an AA is required;

Stage 2 - Appropriate Assessment (Natura Impact Statement or NIS): The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects of plans, with respect to the site’s structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.

Stage 3 – Assessment of alternative solutions: The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site:

Stage 4 – Assessment where no alternative solutions exist and where adverse impacts remain: An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

Each stage determines whether a further stage in the process is required. If, for example, the conclusions at the end of Stage One are that there will be no significant impacts on the Natura 2000 site, there is no requirement to proceed further.

The following Assessment has been prepared in consultation with the following documents:


EC (2001) 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.

Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC.
3. STAGE 1 - SCREENING

Screening is the process of deciding whether or not an AA/NIS is required for the project or plan. Screening only requires sufficient information to determine if there is a likely significant effect on a Natura 2000 site and does not require the detailed information needed for the AA.

The following Stage 1 Screening was undertaken according to the Department of Environment, Heritage and Local Government Circular L8/08, Department of Environment, Heritage and Local Government Guidance for Planning Authorities (DoEHLG, 2010), and EC Methodological guidance on the provision of Article 6 (3) and (4) of the Habitats Directive 92/443/EEC. This Screening is used below to ascertain if an AA is required.

3.1 – Description of the Project

The Wastewater discharge application is for the licensing of 3 No. discharges from the existing sewerage scheme for Doogort agglomeration.

The Doogort Wastewater Treatment Plant (WWTP) was constructed in 1999. The WWTP is designed to treat sewage from a population equivalent of 700 P.E. The WWTP consists of a package plant comprising the following: primary settlement, rotating biological discs and sludge storage in primary settlement tank. The WWTP has 3 discharge points (see Figure 3.1 below). The primary discharge, SW1P, is the main outfall discharging into the Blacksod Bay. In addition, there is a secondary emergency overflow – SW2 associated with a pumping station. There is also one stormwater overflow incorporated into the inlet of the WWTP to avoid wash through the plant due to high tidal conditions at the main pumping station (SW3). Both SW2 and SW3 are located on Dugort Strand, a Blue Flag Beach.

The WWTP is designed to treat effluent to a standard of 25mg/l BOD, 125mg/l COD and 35mg/l Suspended Solids although sampling undertaken as part of the discharge license application gave maximum concentrations of 49mg/l suspended solids, 11.38mg/l Ammonia, 29mg/l BOD, 20.1mg/l TN, 2.37mg/l TP and 1.24mg/l Orthophosphate. The average volume currently discharged from the WWTP is estimated at 94.5m³/day (maximum of 283.5m³/day and dry weather flow of 0.00109375m³/s), equivalent to a maximum loading of 2.74kg BOD/day and 4.6kg/day Suspended Solids.
3.2 – Description of Natura 2000 Site

Name: Doogort Machair/Lough Doo SAC/ pNHA (Site Code 001497)

(See Appendix A for site synopses)

The Doogort Machair/Lough Doo SAC comprises an area of approximately 184.4ha consisting of predominantly machair, i.e. coastal grassland on sandy substrata. Two small lakes lie at the back of the machair. The site contains a rich moss and liverwort flora, and supports several species of breeding waders. The Site is designated for one Annex 1 habitat and one Annex II species as follows:

- Machair (Habitat Code 21a0) (approx 52% of the site) – Good representivity of this habitat type;
- Petalophyllum ralfsii (Species Code 1395) (approx. 61% of the site) – Good Representativity of population;

The Doogort Machair/Lough Doo SAC (Site Code 001497) is located approximately 2.6km from the primary discharge point and as habitats and species are freshwater / terrestrial in nature it is considered that the Doogort WWTP would not impact on this SAC as discharges are into the marine environment. This SAC is therefore, not considered further below.
Name: Croaghaun/Slievemore SAC/ pNHA (Site Code 001955)

(See Appendix A for site synopses)

The Croaghaun/Slievemore SAC comprises an area of approximately 184.4ha consisting of two mountains over 650m elevation and dominated by cliffs with alpine heath mosaics. The Site is designated for 7 Annex 1 habitats as follows:

- Alpine and Boreal heaths (Habitat Code 4060) (approx 9% of the site) – Excellent representivity of this habitat type;
- Vegetated sea cliffs of the Atlantic and Baltic coasts (Habitat Code 1230) (approx. 10% of the site) – Non-significant presence of this habitat type;
- Northern Atlantic wet heaths with Erica tetralix (Habitat Code 4010) (approx. 18% of the site) – Non-significant presence of this habitat type;
- Blanket bog - active (Habitat Code 7130) (approx. 12% of the site) – Non-significant presence of this habitat type;
- Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflora and/or of the Isoëto-Nanojuncetea (Habitat Code 3130) (approx. 1% of the site) – Non-significant presence of this habitat type;
- Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) (Habitat Code 3110) (approx. 2% of the site) – Non-significant presence of this habitat type;
- European dry heaths (Habitat Code 4030) (approx. 10% of the site) – Non-significant presence of this habitat type.

The Croaghaun/Slievemore SAC/pNHA (Site Code 001955) is located approximately 10m from both the primary and secondary discharges, although the SAC is entirely located on the landward side of the primary discharge which is to the marine environment. The actual WWTP and stormwater discharge, however are located within this SAC. However, there are only two water-dependent qualifying habitats in this SAC, neither located adjacent to or downstream of discharges from the Doogort WWTP. It is also considered that potential discharges from SW2 and SW3 are effectively zero. No qualifying habitats or species for this SAC were observed in the vicinity of any of the discharges during a site visit undertaken on the 20th January 2011. Thus it is considered that the WWTP discharges do not impact on this SAC and it is not considered further below.

Name: Keel Machair/Menaun Cliffs SAC/ pNHA (Site Code 001513)

(See Appendix A for site synopses)

The Keel Machair / Menaun Cliffs SAC comprises an area of approximately 1616ha consisting of low-lying flat coastal grassland or machair which is backed by Keel Lough. The site includes a number of coastal habitats at Keel. The Site is designated for three Annex 1 habitats and one Annex II species as follows:

- Perennial vegetation of stony banks (Habitat Code 1220) (approx 1% of the site) – Good
representivity of this habitat type;

- Machairs (Habitat Code 21a0) (approx. 6% of the site) – Significant Representativity of this habitat type;

- Alpine and Boreal heaths (Habitat Code 4060) (approx. 12% of the site) – Good Representativity of this habitat type.

The Keel Machair/Menaun (Site Code 001513) is located approximately 3km from the primary discharge point. This site is not located downstream of Doogort WWTP and associated discharges and is considered outside the zone of any potential impact. It is therefore, not considered further below.

3.3 – Other projects and plans to be considered ‘in combination’.

There were 42 planning applications submitted between 2005 and 2010 within the Agglomeration serviced by the Doogort sewerage scheme, 31 of which have been granted planning permission. None of these planning applications were for significant projects or plans that would have a direct impact on sites of nature conservation importance, or that would have an impact ‘in combination’ with the Doogort WWTP and associated discharges. Planning applications related to residential or ancillary works that would be accommodated within the sewerage schemes population equivalent.

There is no EPA Integrated Pollution Prevention and Control (IPPC) licensed facilities within the vicinity of Doogort that would be considered ‘in combination’.

There are no licenses issued by Mayo County Council under the Local Government (Water Pollution) Acts, 1977 and 1990 within the vicinity of Doogort, the nearest one located at Keel, more than 3km from Doogort.

There is no Local Area Plan for Doogort that would need to be considered ‘in combination’. In addition there are no policies within the Mayo County Development Plan 2008-2014, that would need to be considered ‘in combination’.

Conclusion: There are no projects or plans to be considered in ‘combination’ with the current discharge license application.

3.4 – Assessment Criteria

3.4.1 – Is the development in or on the boundary of the aforementioned nature conservation sites?

The Croaghaun/Slievemore SAC/pNHA (Site Code 001955) is located approximately 10m from the primary discharge (SW1P), although the SAC is entirely located on the landward side of the this discharge which is to the marine environment. The WWTP and stormwater discharge are located within this SAC. The secondary emergency overflow (SW2) is located upstream of the SAC although it is considered that the discharge from here is effectively zero and there was no evidence of impact or discharges from here, from observations on a site visit undertaken on 20th January 2011. In addition, there are only two water-dependent qualifying habitats in this SAC, neither located adjacent to or downstream of discharges from the Doogort WWTP. Thus it is considered that the WWTP discharges do not impact on this SAC.

**Flora Protection Order Species:**

On the basis of NPWS Records, there are 7 Flora Protection Order Species within the two adjacent 10km grid square (F70 and L71) – Slender Naiad (*Najas flexilis*), Petalwort (*Petalophyllum ralfsii*), Down-looking moss (*Catoscopium nigritum*), Blunt Bryum (*Bryum calophyllum*), Sea Pea (*Lathyrus japonicus*), Pennyroyal (*Mentha pulegium*) and Blunt-leaved Bog-moss (*Sphagnum palustre*). The closest of these records is a Blunt-leaved Bog-moss record located 1.4km from the primary discharge point and land-ward of the discharge. Therefore, none of these records are located within the vicinity of the WWTP or associated discharges from the WWTP and would not be impacted by the WWTP and associated discharges.

**Wildlife Acts Species:**

The only records of Wildlife Act species within 3km of discharges from Doogort WWTP are common frog and bottlenose dolphin (see Figure 3.2 below).

There have been a number of recorded sightings of various cetacean species within by the Irish Whale and Dolphin Group (IWDG) within Blacksod Bay, with the nearest sighting to Doogort of a bottlenose dolphin approximately 2.7km from the primary discharge point (See Figure 3.2 below). The bottlenose dolphin is classified by the NPWS to be of favourable conservation status (NPWS, unknown). Main pressures to the species are fishing, water pollution and noise nuisance although pollution concerns relate primarily to heavy metals and organochlorines (IWDG, unknown). It is considered that discharges from Doogort WWTP are imperceptible within the available dilution capacity and does not pose a risk to cetaceans in the wider study area.

Sightings of common frog were remote from the WWTP and associated discharges (circa 1.7km) and within freshwaters not downstream of any discharges.

A littoral site survey undertaken on the 20th January 2011 did not find any Wildlife Act Species within the vicinity of discharges (see Appendix C, Table C.1.). While some of the habitats present do fit within some of the Annex 1 habitats under the EU Habitats Directive, it is considered that these habitats are not at risk from WWTP discharges at Doogort (see Table C.1.).

There will be no direct impact on nationally protected species that come under the Wildlife Acts.
3.4.3 – Is the development a surface water discharge or abstraction in the surface water catchment or immediately downstream of a nature conservation site with water dependant qualifying habitats/species?

No, impacts will be on the marine environment.

3.4.4 – Is the development a groundwater discharge or abstraction in the ground water catchment or within 5km of a nature conservation site with water-dependant qualifying habitats/species?

No.

3.4.5 - Is the development in the surface water or groundwater catchment of salmonid waters?

No, Doogort WWTP discharges into the marine environment.
3.4.6 – Is the treatment plant in an active or former floodplain or flood zone of a river, lake etc.?

The OPW has not indicated that the area in the vicinity of Doogort WWTP is prone to flooding (www.floodmaps.ie). There are no recorded flood events within the vicinity of the site, nor is the area included on the OPW Drainage District and Benefiting Lands maps indicating areas of land subject to flooding or poor drainage.

Site suitability tests carried out by Mayo County Council, prior to the selection of a site for the construction of a wastewater treatment plant examines these aspects. A site is not considered suitable where the site is in an active or former floodplain or flood zone of a river.

3.4.7 – Is the development of a surface discharge or abstraction to or from marine waters and within 3km of a marine nature conservation site?

No, the only SAC within 3km is land-based and would not be impacted by the WWTP and associated discharges.

3.4.8 – Will the project in combination with other projects (existing and proposed) or changes to such projects affect the hydrology or water levels of sites of nature conservation interest or the habitats of protected species?

No.

3.4.9 - Conclusion:

It is considered that an Appropriate Assessment is not required. A summary flow chart of this screening is provided in Appendix D below.
4. FINDINGS OF SIGNIFICANT EFFECTS REPORT MATRIX

4.1 – Name of project or plan
Doogort Wastewater Treatment Plant Discharge License Application

4.2 - Name and location of Natura 2000 sites
- Doogort Machair/Lough Doo SAC/ pNHA (Site Code 001497)
- Croaghaun/Slievemore SAC/ pNHA (Site Code 001955)
- Keel Machair/Menaun Cliffs SAC/ pNHA (Site Code 001513)

4.3 - Description of the project or plan
As 3.1 above.

4.4 - Is the project or plan directly connected with or necessary to the management of the site (provide details)?
No.

4.5 - Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)?
No.

5. – THE ASSESSMENT OF SIGNIFICANCE OF EFFECTS

5.1 - Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.

L8/08 states that if the screening process under section 3 above is to “Assess Impacts” then the project must be referred to the DEHLG Development Applications Unit (DAU). As no appropriate assessment is required for Doogort WWTP, this report will not be issued to the NPWS.

There is no SAC with marine habitats or species within 3km of the WWTP and associated discharges thus there will be no impacts on an SAC or SPA.

5.2 - Explain why these effects are not considered significant.

There are no marine based SACs or SPAs within 3km of the WWTP and associated discharges and thus no qualifying species or habitats to be impacted.

5.3 - List of Agencies Consulted: Provide contact name and telephone or e-mail address:

1. Naomi Kingston/ Rebecca Jeffrey, National Parks and Wildlife Service, e-mail: Naomi.Kingston@environ.ie, natureconservation@environ.ie
2. Ramona Car, Data Analyst, Marine Institute, e-mail: ramona.carr@marine.ie
5.4 - Response to Consultation

Received existing marine data for the study area from the Marine Institute (the only available data was for shellfish).

The NPWS sent on any available data for the study area from their archives.

DATA COLLECTED TO CARRY OUT THE ASSESSMENT SCREENING

Who carried out the Appropriate Assessment Screening?

Louise Wedley (Collier) (qualified freshwater and marine ecologist), Mayo County Council

Sources of data

Any available data was assessed from the following websites, WFD Ireland, Western RBD, National Biodiversity Data Centre, Department of Environment Heritage and Local Government, and National Parks and Wildlife.

See References/Sources of report.

Level of Assessment

Desk top study, site walkover survey by marine/freshwater ecologist (Louise Wedley).

Where can the full results of the Assessment / Screening be accessed and viewed?

No Appropriate Assessment required (see Appendix D). This screening document can also be viewed at Water Services Capital Works Section, Mayo County Council.
REFERENCES


EC (2001) 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.


 Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC.


APPENDIX A – SITE SYNOPSES FOR SACS

SITE NAME: DOOGORT MACHAIR/LOUGH DOO (SITE CODE: 001497)

This is a small coastal site lying in the north-east corner of Achill Island, adjacent to the village of Valley and approximately 3km east of Doogort.

Most of the site consists of machair, i.e. a coastal grassland on a sandy substrate, which fronts onto the shoreline. The machair occurs on two plains separated by an escarpment. Firstly, there is a low wet hummocky plain near the sea and secondly a higher, drier, flat plain further inland, which terminates in bog. The sward is generally close-cropped and includes species such as Common Bird’s-foot Trefoil (Lotus corniculatus), Lady’s Bedstraw (Galium verum) and small Sedges (Carex panicea, C. nigra) as well as Sand Sedge (Carex arenaria). There is frequently a carpet of mosses and liverworts covering the sand surface, and a number of rare and scarce species occur, including Campylopus subulatus, Amblyodon dealbatus, Haplomitrium hookeri, Mastigophora woodsii.

Two small lakes lie at the back of the machair. Lough Doo is bordered at its western end by a freshwater marsh with Fool's Water-cress (Apium nodiflorum) and Lesser Spearwort (Ranunculus flammula). Lough Nambrack, to the south, is partially fringed by Common Reed (Phragmites australis) with occasional Branched Bur-reed (Sparganium erectum) and Bulrush (Typha latifolia). At its western end is a small, species-rich marsh with Water Mint (Mentha aquatica), Marsh Marigold (Caltha palustris) and Marsh Cinquefoil (Potentilla palustris). Around these lakes, as on the machair, there is a good moss and liverwort flora which includes some scarce and rare species, i.e. Catoscopium nigritum and Fossombronia incurva. The liverwort Leiocolea gillmannii has been recently recorded here - this is the only Irish station for this species.

Along the seaward fringe of the site are a range of shoreline habitats including sandy beach, shingle beach, boulder beach and exposed bedrock. Fucoids and green algae colonise the lower shore. In places, the shore is backed by low sea-cliffs (approximately 3m high), which are formed of soft deposits, of clay and occasionally peat.

Among the rich moss and liverwort flora at this site, Petalwort (Petalophyllum ralfsii) has been recorded. This rare species is listed on Annex II of the European Habitats Directive.

The site supports several species of breeding waders, with Lapwing (7 pairs), Dunlin (2 pairs) and Ringed Plover (1 pair) recorded in 1996. The occurrence of Dunlin is of particular note as it is a rare Irish breeding bird and is listed as a Red Data Book species. Unfortunately numbers have declined since 1985 when 10 pairs were recorded at the site.

The machair at Doogort is a largely unenclosed commonage used for grazing sheep and cattle. The correct level of grazing, evenly spread over the site, is a critical factor in maintaining species diversity and habitat quality of machair. A major threat to machair is agricultural improvement. Application of fertilisers can result in the loss of semi-natural vegetation and a reduction in species-richness. Run-off of fertiliser can also cause pollution of associated freshwater systems.

This scenic coastal site contains a good diversity of habitats in a small area. The machair here is a good example of a habitat type which is increasingly rare and receives priority status under Annex I of the European Habitats Directive. An outstanding feature of this site is its moss and liverwort flora, which includes a number of rarities, including an Annex II species. Achill Island is
one of the foremost areas in Ireland, and is of international importance, for its mosses and liverworts. A number of oceanic species occur here which are rare in a European context.

5.2.1997

SITE NAME: CROAGHAUN / SLIEVEMORE (SITE CODE: 001955)

This site is located on the north-western side of Achill Island, in north-west Mayo. The underlying geology is pre-Cambrian schists and gneisses at Slievemore and quartzite at Croaghaun. The site consists mainly of two mountains, Croaghaun and Slievemore, both over 650m O.D. It is dominated by cliffs which can exceed 300m, with scree mantling the slopes above the vertical cliffs. From the high cliffs around Croaghaun towards the northern cliff edge is a group of five cirques perched at various levels above the sea. In these corries some very old and degraded moraines are found.

This site contains interesting alpine heath, a habitat listed on Annex I of the EU Habitats Directive. The alpine heath is found at higher altitudes in a mosaic with scree and exposed rock, patches of blanket bog and corrie lakes. The montane heath is of particular importance for its communities of oceanic bryophytes, some of which constitute what is known as The North Atlantic Hepatic Mat community, which descends on Achill to its lowest altitude. As well as the typical species for this community, a number of rarities are found including Adelanthus lindenber gaussianus, Bazzania pearsonii, Mastigophora woodsii, Dicranodontium unciatum, Hymenophyllum wilsonii, H. tunbrigense and Scapania nimbosa. In flushed areas, the rare moss Sphagnum warnstorfii occurs. An interesting array of vascular plants are also found on the summits, including St. Patrick’s-cabbage (Saxifraga spathularis), Starry Saxifrage (S. stellaris), Dwarf Willow (Salix herbacea), Bearberry (Arctostaphylos uva-ursi), Lesser Twayblade (Listera cordata) and Stiff Sedge (Carex bigelowii). A species of Eyebright (Euphrasia frigida) is specific to Croaghaun while the scarp below Slievemore supports another scarce species, Mountain Sorrel (Oxyria digyna).

On the rocky habitats of the scree slopes, gullies and cliffs around the corrie lakes of Loughs Bunnafreva and Nakeeroge, other notable bryophytes are found including Plagiothecium cavifolium, Cyclodictyon laetevirens, Andeaea rothii, Geocalyx graveolens, Anthelia juratzkana, Radula carringtonii, Marsupella sprucei and M. sphacelata. The rare moss Rhynchostegium lusitanicum has been recorded from the fast flowing streams near Keem.

Other habitats at the site include both wet and dry heaths, upland rivers, sea cliffs, islets and small areas of boulder and sandy beaches and some machair.

The vegetation of the sea cliffs at Achill Head consists of well-developed examples of Plantain sward (Plantago association) which extends up to 150m up the cliffs. In some areas there is a dense smooth mat of Sea Plantain (P. maritima) and Buck’s-horn Plantain (P. coronopus), dotted with Thrift (Armeria, maritima), Sea-spurrey (Spergularia rupicola), Sea Pearlwort (Sagina maritima), Procumbent Pearlwort (S. procumbens), Sea Mouse-ear (Cerastium tetrandrum), Allseed (Radiola linoides) and the grasses Festuca ovina, Aira praecox and Agrostis capillaris. The low sea cliffs in the north are hung with Roseroot (Rhodiola rosea).

There are five corrie lakes within the site. At Bunnafreva Lough East, Quillwort (Isoetes lacustris) has been recorded, with an abundance of Water Dropwort (Lobelia dortmanni)
Irish Heath (Erica erigena) has its most westerly station on the shores of Lough Nakeeroge. The plant was recorded here between 1982 and 1984. About 40 bushes were seen in a small bay on the northern lakeshore and ten plants were seen growing along a little stream that flows into the lake from the west. In Europe this plant is confined to counties Galway and Mayo in Ireland and is also found in Spain, Portugal and western France.

Chough, a typical and localised species of the western seaboard, breeds at this site with up to four pairs recorded during a survey in 1992. Chough is a Birds Directive Annex I species.

The main landuse at the site is grazing, which occurs at high densities in places, especially on the lower slopes where the vegetation is eroded down to mineral soil. Peat cutting is carried out in some areas. Other landuses are amenity management involving track development and provision of car parks, and quarrying immediately adjacent to the boundary at the south centre of the site.

This site is of ecological interest for its excellent quality heath, supporting a range of rare species of vascular plant and bryophyte. The presence of a number of other typical coastal and upland habitats adds habitat diversity to this scenic site.

**SITE NAME: KEEL MACHAIR / MENAUN CLIFFS (SITE CODE: 001513)**

This site is located along the southern coast of Achill Island, and extends between the villages of Keel and Dooega. The northern part of the site consists of a low-lying, flat coastal grassland, or machair, which is backed by Keel Lough. Southeast of the machair, the ground rises steeply to 466m, and the shoreline changes from a flat, sandy beach to impressive sea-cliffs. The site also extends inland, past Menaun Heights (403m).

A range of coastal habitats occur at Keel. Tramore, an impressive, sandy beach, backs onto a shingle bar, behind which is a narrow band of sand dunes colonised by Marram (Ammophila arenaria). Behind the dunes is machair, or unenclosed coastal grassland, which lies on a sandy substrate and is generally flat, but with a very gently undulating series of hummocks and low-lying damp areas. The sward is close-cropped and contains Red Fescue (Festuca rubra), Daisy (Bellis perennis), Ribwort Plantain (Plantago lanceolata), Buck’s-horn Plantain (Plantago coronopus), Common Bird’s-foot Trefoil (Lotus corniculatus), Lady’s Bedstraw (Galium verum) and Common Mouse-ear (Cerastium fontanum).

Damp hollows in the dunes and machair support low-growing mats of mosses and liverworts, from which a number of rare and scarce species have been recorded, including Bryum calophyllum (this moss has its only recent Irish record here), B. marratii, Catostopium nigritum, Tortella inclinata (known only from West Mayo and County Down), Fossombronia fimbriata (a liverwort known only from West Mayo and County Sligo), F. pusilla (known only from West Cork and West Mayo) and F. incurva.

Petalwort (Petalophyllum ralfsii), a liverwort species listed on Annex II of the European Habitats Directive, occurs in damp hollows associated with the dunes and machair at Keel.

Within the site, shingle beach is best developed along middle and south-eastern parts of Trawmore strand, where it fronts the main area of machair. The shingle bank can be quite tall, reaching a height of between 4-5 m in places. Vegetation along the shingle bank is typically sparse, being restricted to a handful of hardy, salt-tolerant plant species such as Buck’s-horn...
Plantain (Plantago coronopus), Sand Couch (Elymus farctus), Ribwort Plantain (Plantago lanceolata), Sea-holly (Eryngium maritimum) and Curled Dock (Rumex crispus). The species-poor nature of the associated vegetation is due primarily to the exposed and highly mobile nature of the habitat.

The slopes of Menaun are covered by thin peat, eroded in places down to mineral soil and rock. Extensive areas of heath and some blanket bog occur here. The area around the summit of Menaun (i.e. above 350 m) supports heath vegetation corresponding to alpine and subalpine heath. This is dominated by Ling (Calluna vulgaris), Bell Heather (Erica cinerea) and the moss Racomitrium lanuginosum. Species particularly characteristic of alpine heath include Bearberry (Arctostaphylos uva-ursi), Crowberry (Empetrum nigrum), Juniper (Juniperus communis subsp. nana), Bilberry (Vaccinium myrtillus), Dwarf Willow (Salix herbacea) and Fir Clubmoss (Huperzia selago). The alpine heath merges with extensive areas of dry gheathy dominated by Ling at lower altitudes. Part of the heath vegetation on Menaun is unusual for its community of mosses and liverworts, known as The Northern Atlantic Hepatic Mat community, which contains a number of species with oceanic/montane affinities. On Achill, this community descends to its lowest altitudinal level in Ireland.

On the sea-cliffs around Menaun, the damp rocks also support rich communities of mosses and liverworts, including Cyclodictyon laetevirens and Philonotis rigida. Two protected plant species, Sea Pea (Lathyrus japonicus) and Penny royal (Mentha pulegium) have been recorded within the site.

Behind the machair lies Keel Lough, which provides habitat for some wintering waterfowl, notably Whooper Swan, a species listed on Annex I of the EU Birds Directive. Numbers up to 70, occasionally more, occur mainly in autumn and early winter. Another Annex I species, Chough, breeds on the cliffs and uses the low-lying machair areas for feeding; in 1992 six pairs were recorded within the site. A pair of Peregrine frequents the site and probably breeds within it. The sandy machair plain provides good habitat for breeding Ringed Plover, while an area of wet marsh at Sruhillbeg Lough attracts breeding Lapwing. Seabirds, mostly Fulmars, breed on the cliffs.

The site is extensively used for grazing cattle and sheep. The level of grazing and evenness of grazing pressure are critical factors in maintaining the character and species-richness of machair. Heath and blanket bog are also directly affected by high grazing pressure. The scenic qualities of this site, its proximity to Keel and ease of access make it attractive for amenity use. Uncontrolled access and development can damage coastal habitats.

This site has a good diversity of coastal and montane habitats including a small, though significant example of alpine heath. The machair is a good example of a habitat which is increasingly rare in Europe, and which receives priority status on Annex I of the European Habitats Directive. A remarkable feature of the site is its rich moss and liverwort flora, which is of international significance and includes an Annex II species. The ornithological importance of the site enhances the conservation value of this site.

3.9.2001
APPENDIX B – PLATES FROM SITE SURVEY (20TH JANUARY 2011)

Plate 1 – Secondary Emergency Overflow (SW2)
Plate 2 – Doogort Blue Flag Beach
Plate 3 – Lower Shore in vicinity of Primary Discharge (SW1P)
Plate 4 – Shoreline in vicinity of Primary Discharge (SW1P)
Plate 5 – View towards Doogort Beach from pier
Plate 6 – View towards Pier/WWTP from Dugort Beach
APPENDIX C – SITE SUMMARY FROM VISIT ON 20 JANUARY 2010.

SW1(P) – PRIMARY DISCHARGE POINT

Key Littoral Biotopes:

Verrucaria maura on littoral fringe rock (LR.FLR.Lic.Ver)

Sparse zone along upper shore boulders and bedrock.

Key species identified within this biotope were *Verrucaria maura* and *Littorina saxitilis*. The lichens *Lichina pygmaea* and *Ramalina siliquosa* were also sparsely present.

Pelvetia canaliculata and barnacles on moderately exposed littoral fringe rock (LR.MLR.BF.PeiB).

Very sparse zone along upper shore bedrock and boulders.

Semibalanus balanoides, Patella vulgata and Littorina spp. on exposed to moderately exposed or vertical sheltered eulittoral rock (LR.HLR.MusB.Sem.Sem).

Zone of variable width, with abundant *Nucula lapillus*, Patella and barnacle species, but low numbers of Littorinid species observed. The red algae *Osmundea pinnatifida* was abundant in more sheltered crevices, with a greater abundance of red algae present at the lower fringe of this zone.

Fucus serratus and red seaweeds on moderately exposed lower eulittoral rock (LR.MLR.BF.Fser.R).

Very narrow band of this biotope, between barnacle/red algal zone and the zone of *Laminaria digitata* and red algae below this. Key red algal species present within this biotope were *Palmaria palmata*, *Hildenbrandia rubra*, *Corallina officinalis*, *Lithothamnion* sp., *Lomentaria articulata* and *Ceramium* sp. *Actinia equina* were present in low numbers.

Laminaria digitata on moderately exposed sublittoral fringe rock (IR.MIR.KR.Ldig)

Key species observed beneath a canopy of *Laminaria digitata* were red algal species, particularly *Palmaria palmata*, *Hildenbrandia rubra*, corallinacea indet, *Ceramium* sp and *Lomentaria articulata*. Also observed were low numbers of *Pomatoceros triqueter*, *Spirorbidae*, *Membranipora membranacea* and *Littorina littorea*. Conditions only permitted observations within the upper sublittoral fringe.

A summary of the sensitivity and nature conservation importance of the habitats listed above are included in Table C.1 below:
Table C.1. – Sensitivity and nature conservation value of habitats (or key species where information not available on biotope) (based on [http://www.marlin.ac.uk/](http://www.marlin.ac.uk/))

<table>
<thead>
<tr>
<th>Biotope</th>
<th>National Importance</th>
<th>Nutrient Sensitivity</th>
<th>SS Sensitivity</th>
<th>DO Sensitivity</th>
<th>Microbial Sensitivity</th>
<th>HD Annex*</th>
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<tr>
<td>LR.FLR.Lic.Ver</td>
<td>Widespread</td>
<td>High</td>
<td>Not Relevant</td>
<td>Not Relevant</td>
<td>Insufficient Information</td>
<td>R, LSIB, E</td>
</tr>
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<tr>
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<td>Low</td>
<td>Low</td>
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<tr>
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<tr>
<td>IR.MIR.KR.Ldig</td>
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<td>Low</td>
<td>Low</td>
<td>Low</td>
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<td>R, LSIB, E</td>
</tr>
</tbody>
</table>

*Annex 1Habitat Under the EU Habitats Directive: R = Reefs; LSIB = Large Shallow Inlets & Bays; E= Estuaries; L = Lagoons; MSF = Mudflats & Sandflats not covered by seawater at low tide.
APPENDIX D – Flow Chart from Appendix 1 of Circular L8/08 from DoEHLG.

1. Is the development in a nature conservation site?

   YES (SEE NOTE BELOW)

2a. (If the development involves a surface water discharge) Is the development in a surface water catchment of a nature conservation site (or part of such a site)?

   NO

4. Is the development in the surface or groundwater catchment of other water dependent Annex II species, other rare or protected species or salmonoid waters?

   NO

   No further action required

Note: The actual WWTP is located within an SAC, but not the primary or secondary discharge. In addition the SAC does not contain water dependent species that could be impacted by Doogort WWTP and associated discharges. See Section 3.2 for further details.