

# **Habitats Regulations Assessment on the Northern Area Plan 2016**

**In accordance with The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (SR 1995 No. 380) (as amended)**

**Undertaken by:**

**The Department of the Environment  
Northern Ireland**

## **Executive Summary**

This is a record of the Habitats Regulations Assessment, required by The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended). It was undertaken by Northern Ireland Environment Agency (NIEA) in accordance with the above Regulations on behalf of The Department of the Environment. This assessment considers the Northern Area Plan 2016 (hereafter referred to as the Plan).

Twenty-three designated Natura 2000 Sites that potentially could be affected by the implementation of the Plan were identified through the initial screening process, namely:

- Antrim Hills SPA
- Banagher Glen SAC
- Bann Estuary SAC
- Binevenagh SAC
- Breen Wood SAC
- Carn-Glenshane Pass SAC
- Garry Bog SAC and Ramsar
- Garron Plateau SAC and Garron Plateau Ramsar
- Lough Foyle SPA and Lough Foyle Ramsar
- Magilligan SAC
- Main Valley Bogs SAC
- North Antrim Coast SAC
- Rathlin Island SPA
- Rathlin Island SAC
- Red Bay SCI
- River Roe and Tributaries SAC
- Sheep Island SPA
- Skerries and Causeway SCI
- Ballynahone Bog SAC
- Dead Island Bog SAC
- River Faughan and Tributaries SAC
- Wolf Island Bog SAC
- Lough Neagh & Lough Beg SPA and Ramsar Site

All 23 Natura 2000 Sites identified during screening were deemed to need an Appropriate Assessment (now referred to as Habitats Regulations Assessment).

Of the Northern Ireland sites identified as requiring Appropriate Assessment the process undertaken concluded that the evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity (structure and function and conservation objectives) of:

**Rathlin Island SPA**  
**Rathlin Island SAC**  
**Red Bay SCI**  
**Sheep Island SPA**  
**Skerries and Causeway SCI**

No significant adverse effect that would impact on the integrity of any of the European sites was shown, however, due to the nature of the Plan, neither was it possible to conclude beyond reasonable doubt that there would be no adverse effects without the incorporation of mitigation measures. A number of areas where there may be the potential for adverse effects are highlighted and, in accordance with the Precautionary Principle, mitigating measures have been suggested.

The Appropriate Assessment process identified that a number of mitigation measures were required to ensure that NAP will not have any adverse effect on the integrity of the following European Sites:

**Antrim Hills SPA**  
**Banagher Glen SAC**  
**Bann Estuary SAC**  
**Binevenagh SAC**  
**Breen Wood SAC**  
**Carn-Glenshane Pass SAC**  
**Garry Bog SAC and Ramsar**  
**Garron Plateau SAC and Garron Plateau Ramsar**  
**Magilligan SAC**  
**Main Valley Bogs SAC**  
**North Antrim Coast SAC**  
**River Roe and Tributaries SAC**  
**Lough Foyle SPA and Ramsar**  
**Ballynahone Bog SAC**  
**Dead Island Bog SAC**  
**River Faughan and Tributaries SAC**  
**Wolf Island Bog SAC**  
**Lough Neagh & Lough Beg SPA and Ramsar Site**

Mitigation measures have been incorporated into the NAP and this has enabled us to conclude that the plan would not adversely affect the key species and key habitats or the integrity (structure and function and conservation objectives) of any European site.

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## **1.0 Introduction – Legislative Background**

This statement contains a record of the Habitats Regulations Assessment, required by The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended). It has been undertaken by NIEA on behalf of the Department of the Environment in respect of the Northern Area Plan 2016 (hereafter referred to as the Plan), in accordance with the Habitats Directive (Council Directive 92/43/EEC).

The EU Habitats Directive (92/43/EEC) requires the competent authority (Department of Environment in this case) to undertake an appropriate assessment of the implications of any plan or project not directly connected with or necessary to the management of a Natura 2000 Site but likely to have a significant effect on it either individually or in combination with other plans or projects.

Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) together make up the Natura 2000 network; all EU Member States contribute to this network of sites in a Europe-wide partnership. Special Protection Areas (SPAs) are classified under the European Commission Directive on the Conservation of Wild Birds (The Birds Directive) to help protect and manage areas which are important for rare and vulnerable breeding, over-wintering and migrating birds species. Special Areas of Conservation (SACs) are designated and offered protection under the Habitats Directive; they have been designated to provide increased protection to the important habitats or species which they contain.

Ramsar sites are wetlands of international importance which have been recognized for their biodiversity value. They have been designated under the Ramsar Convention held in 1971; the UK government signed the Convention in 1973 and ratified it in 1976. The main aim of the Ramsar Convention is the conservation and sustainable management of important wetland ecosystems.

This Habitats Regulation Assessment report is being carried out in order to assess if there is the potential for any likely significant or adverse effects upon any Natura 2000 site(s) and Ramsar site(s) through the implementation of the Northern Area Plan 2016.

This Habitats Regulation Assessment Report (HRA) should be read in conjunction with the Plan.

## 1.2 Habitats Regulation Assessment Process

The Assessment has been carried out using the following guidance:

*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 drawn up by the European Commission.*

The Assessment process can involve four stages:

- **Stage 1: Screening/Test of likely Significance**
- **Stage 2 : Appropriate Assessment**
- **Stage 3 : Assessment of alternative solutions**
- **Stage 4 : Assessment where no alternative solution exists for imperative reasons of overriding public interest (IROPI)**

### **Stage one: Screening/Test of Likely Significance**

This is an initial ‘screening stage’ in which the European and Ramsar sites which could potentially be impacted upon by the implementation of the Northern Area Plan either alone or in combination with other plans or projects are identified and described.

### **Stage Two: Appropriate Assessment**

When one or more likely significant adverse effects are identified or where there is uncertainty regarding the outcome, then an ‘Appropriate Assessment’ (AA) is carried out for the site(s) in question. This involves a description of the Natura 2000 site(s) being considered in the AA and identification and assessment of any adverse impacts on the conservation features of the site(s) likely to occur from the implementation of the Plan. Where there are adverse impacts, the potential mitigation of those impacts is considered and assessed.

### **Stage 3: Assessment of alternative solutions**

This stage involves examining alternative methods of achieving the objectives of the plan that avoid adverse impacts on the integrity of the Natura 2000 site(s).

### **Stage 4: Assessment where no alternative solutions exist for imperative reasons of overriding public interest (IROPI)**

At this stage where no alternative solution exists and where adverse impacts remain, the development is assessed to determine whether it is essential due to IROPI and, if so, the potential mitigation and compensatory measures required.

## **2.0 Stage One: Screening/Test of Likely Significance**

### **2.1 Description of the Northern Area Plan 2016**

The Northern Area Plan 2016 is a development plan being prepared under the provisions of Part 3 of the Planning (Northern Ireland) Order 1991. The purpose of the Plan is to guide development throughout the plan period, in general conformity with the principles and policies of the Regional Development Strategy 2025 and its successor document 2035.

The Plan relates to the four administrative Council Areas of Ballymoney, Coleraine, Limavady and Moyle, covering an area of approximately 1,969 square kilometres. The 2011 Census estimated the population of Coleraine District as 59,067, Ballymoney District as 31,224, Limavady District as 33,536 and Moyle District as 17,050. The Plan area is shown on Map 1 (Appendix 3).

The purpose of the Plan is to inform the general public, statutory authorities, developers and other interested bodies of the policy framework and land use proposals that will be used to guide the development decisions within the Plan Area over the Plan period.

The aim of the Plan is to provide a planning framework that is in line with the Regional Development Strategy in facilitating sustainable growth and a high quality of development in the Northern Area Plan throughout the Plan period, whilst protecting and, where appropriate, enhancing the natural and man-made environment of the Plan Area.

Issue papers for the Plan were published in 2002, the Draft Plan was then published in May 2005 in two volumes along with technical supplements. The statutory period for submission of representations, including objections to the Draft Plan Policies and Proposals expired on 6<sup>th</sup> July 2005. Subsequently, upon consideration of submissions received, the Department requested the Planning Appeals Commission to facilitate an Independent Examination to consider objections to the Draft Plan and provide a report to the Department.

In accordance with the terms of Article 8 of the Planning (NI) Order 1991, the Department, having considered the Commissioners Report, is now adopting a final Plan for the Northern Districts. This assessment has been carried out on the final plan, which includes those recommendations by the Commissioners that have been accepted by the Department. The Department received the Commissioners' Report on the Examination on the 30<sup>th</sup> May 2014.

Within the Plan there are Designations, Policies, Allocations and Zonings covering the Northern Plan Area. The impacts of the following broad land policy proposals in the Plan have been assessed against each of the selected Natura 2000 sites;

1. Settlement
2. Housing



3. Economic Development
4. Retail
5. Environment and Conservation
6. Tourism
7. Education, Health, Community and Cultural Facilities
8. Open Space, Sport and Outdoor Recreation
9. Public Services and Utilities
10. Minerals
11. Transportation

The above sections are further sub-divided into their constituent proposals, the detail of which can be found in the Plan documents.

## 2.2 Potential impacts arising from the implementation of the Plan

**Table 1: Potential environmental impacts arising from the implementation of NAP**

<b>Potential Impacts</b>	<b>Activities arising from the implementation of NAP</b>
<b>Loss, fragmentation, damage of habitats and / or species:</b>	<p>Development activities associated with NAP could lead to the loss, fragmentation or damage of habitats and / or species through:</p> <ul style="list-style-type: none"> <li>• Direct land take and / or land clearance and the use of machinery/materials.</li> <li>• Direct and indirect impacts resulting from the construction and operation of built development and required infrastructure.</li> <li>• Impacts caused during repair and maintenance activities for built development and required infrastructure.</li> <li>• Direct impacts associated with mineral development in the plan area.</li> </ul>
<b>Disturbance: physical, noise, lighting</b>	<ul style="list-style-type: none"> <li>• Removal, fragmentation or physical changes to important connectivity features could create barrier effects to species, alter habitat availability or ecological functioning or result in changes in breeding, roosting, commuting and foraging behaviour.</li> <li>• Noise or activity during construction and operational activities could have adverse impacts on sensitive species.</li> <li>• Increased lighting from construction or additional built development could: create barrier effects to species; result in changes in species breeding, roosting, commuting and foraging behaviour; or increase predation.</li> </ul>
<b>Biological Disturbance: invasive species, human disturbance</b>	<ul style="list-style-type: none"> <li>• Sensitive habitats and species may experience adverse impacts from the introduction of invasive species, non-native, competitive or predatory species through construction activities and associated machinery, movement of soils and waste or from garden escapes.</li> <li>• Increased human activity (including recreation; increase in pet ownership; increased incidence in fires)</li> </ul>

	<p>close to sensitive habitats and species may cause disturbance that could impact negatively on these features and lead to displacement of sensitive species from certain locations.</p>
<p><b>Emissions through hydro connectivity and changes to hydrology</b></p>	<ul style="list-style-type: none"> <li>• There is potential for an increased transport of chemical contaminants reaching the aquatic environment during the construction and operation of development associated with the NAP. This could range from transportation fuels to cleaning or waste water treatment materials and associated drainage and discharges into watercourses. Changes to water quality can have harmful effects on fish, invertebrates, and vegetation, e.g. as a result of lowered oxygen levels.</li> <li>• Surface run off and sediment release from construction works and operational activities associated with NAP can increase sediment deposition and turbidity within aquatic systems.</li> <li>• Water abstraction from streams or lakes required for construction and operation of developments associated with NAP could have physical impacts on water levels, fish species at intakes or affect populations of migratory fish.</li> <li>• Construction and operation of development associated with NAP could alter the hydrology of sensitive habitats and species by either increasing or decreasing runoff or water percolation into aquifers.</li> <li>• Increased demands on waste water treatment works or for septic tanks could lead to increased nutrient enrichment of waterbodies which could change water quality and increase eutrophication. This in turn could have a harmful effect on the ecological functioning of these systems.</li> </ul>
<p><b>Aerial Emissions</b></p>	<ul style="list-style-type: none"> <li>• The construction and operation of developments associated with NAP (in particular industrial developments) have the potential to generate chemical and dust emissions and could make a contribution to acid rain or nutrient deposition resulting in significant adverse impacts to animals and sensitive habitats.</li> <li>• Increased traffic generation could lead to increased air pollution and greenhouse gas emissions which could have localized impacts on sensitive habitats or species.</li> </ul>
<p><b>Contamination of land</b></p>	<ul style="list-style-type: none"> <li>• Waste arising from the operation of developments associated with NAP could cause contamination of land which could have a direct detrimental impact on sensitive habitats or species or indirect water.</li> </ul>

## 2.3 Potential In-Combination/Cumulative Impacts

**Table 2: Potential In-Combination/Cumulative effects arising from other plans and associated projects.**

<b>Plans and associated Projects</b>	<b>Potential Effects / Impacts</b>
<p><b><u>Development Plans and associated Projects:</u></b></p> <p><b>Regional Development Strategy</b> Building a better future: Regional Development Strategy for Northern Ireland 2035 (2012).</p> <p><b>Development Plans</b> Antrim Area Plan 1984-2001; Ballymena Area Plan 1986-2002; Ballymena Town Centre Local Plan 1991-2002; Ballymoney Town Centre Local Plan 1991-2002 Belfast Metropolitan Area Plan 2015 Cookstown Area Plan 2010; Larne Area Plan 2010; Limavady Area Plan 1984-1999 Limavady District Hamlet Subject Plan 1989-1999 Magherafelt Area Plan 2015; North East Area Plan 2002, South East Lands Limavady Local Plan 1989-1999</p> <p><b>A Planning Strategy for Rural Northern Ireland</b></p> <p><b>Planning Policy Statements</b> Current and draft PPS suite</p>	<p>Potential In-Combination effects associated with:</p> <ul style="list-style-type: none"> <li>• Additional Built Development;</li> <li>• Additional Resource Requirements</li> <li>• Additional Infrastructural Requirements</li> </ul> <p>Potential Impacts to European Sites</p> <ul style="list-style-type: none"> <li>• Habitat loss / fragmentation</li> <li>• Disturbance (Physical, Noise, Lighting)</li> <li>• Biological Disturbance (invasive species etc, human disturbance)</li> <li>• Emissions by water and changes to hydrology</li> <li>• Emissions by air</li> <li>• Contamination of land</li> </ul>
<p><b><u>Infrastructure Plans</u></b></p> <p><b>Water Resource strategies, plans and schemes (including water abstraction Plans WWTW and WTW Plans):</b></p> <p>Draft Water Resource Management Plan 2010-2035. Northern Ireland Water; Water Resource Strategy 2002-2030, Department of Regional Development; NI Water Business Plan 2007-2010 (and associated Capital Works Programme), Northern Ireland Water;</p> <p><b>Waste Management Plans:</b> Towards Resource Management: The Northern</p>	<p>Potential In-Combination effects associated with:</p> <ul style="list-style-type: none"> <li>• Additional Built Development;</li> <li>• Additional Resource Requirements</li> <li>• Additional Infrastructural Requirements</li> </ul> <p>Potential Impacts to European Sites</p> <ul style="list-style-type: none"> <li>• Habitat loss / fragmentation</li> <li>• Disturbance (Physical, Noise, Lighting)</li> <li>• Biological Disturbance (invasive species etc,)</li> </ul>

<p>Ireland Waste Management Strategy 2006-2020. Department of the Environment; Waste Management Plan 2020, ARC 21 Waste Management Plan; Southern Region Waste Management Plan (2006); North West Region Waste management Plan (2006).</p> <p><b>Transport Plans:</b> Regional Transport Strategy 2002-2012 Department of Regional Development; Draft Revised Regional Transport Strategy 2011, Department of Regional Development; Regional Strategic Transport Network Transport Plan 2015 (and associated initiatives), Department of Regional Development;</p> <p><b>Energy Plans:</b> Onshore Renewable Electricity Action Plan 2013-2020 (Department of Enterprise Trade and Investment); Offshore Renewable Energy Action Plan 2012-2020 (Department of Enterprise Trade and Investment);</p>	<ul style="list-style-type: none"><li>• Emissions by water and changes to hydrology</li><li>• Emissions by air</li><li>• Contamination of land</li></ul>
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## **2.4 Identification of the European Sites which could potentially be Impacted.**

All European and Ramsar sites that fell into at least one of the following categories were identified and selected for detailed HRA screening:

1. Part of the European site is within or directly adjacent to the Northern Plan area.
2. The European Site is ecologically connected to the Northern Plan area. Ecological connections include linkages by ecological corridors such as river systems or habitat belts, hydrological links between land in the Plan area and peatland or wetland sites; known areas of land in the plan area which are regularly used by birds which also use a SPA; and sites that form part of the same coastal ecosystem or may be utilized by marine species that are mobile in the vicinity of the plan area.
3. The European Site is within 15km of an Economic Development zoning within the Northern Plan area - potential for aerial pollution.
4. The European Site has infrastructural connections with the Northern Plan Area. Infrastructural connectivity is related to the potential linkage of sites to the Northern Plan area by water abstraction and waste water discharges.

There are 16 European and Ramsar sites totally or partially within the Plan Area and 7 European sites outside the Plan area, but in close proximity, namely:

- Antrim Hills SPA
- Banagher glen SAC
- Bann Estuary SAC
- Ballynahone Bog SAC (outside but within 9km of the nearest Economic Development zoning)
- Binevenagh SAC
- Breen Wood SAC
- Carn - Glenshane Pass SAC
- Dead Island Bog SAC (outside but within 5km of the nearest Economic Development zoning)
- Garry Bog SAC and Garry Bog Ramsar Site
- Garron Plateau SAC and Garron Plateau Ramsar Site
- Lough Foyle SPA and Lough Foyle Ramsar Site
- Lough Neagh & Lough Beg SPA and Ramsar Site (outside but within 13km of the nearest Economic Development zoning)
- Magilligan SAC
- Main Valley Bogs SAC
- North Antrim Coast SAC
- Rathlin Island SPA
- Rathlin Island SAC

- Red Bay SCI ( Adjacent to the Plan area)
- River Faughan and Tributaries SAC (outside but within 1.6km of the nearest Plan Economic Development zoning)
- River Roe and Tributaries SAC
- Sheep Island SPA
- Skerries and Causeway SCI (Adjacent to the Plan area)
- Wolf Island Bog SAC (outside but within 2km of the nearest Economic Development zoning)

Further checks have been made of other European sites, which are outside the Northern Plan Area which could be impacted upon by the Plan Proposals, and it has been deemed that there are no other sites which are likely to be adversely impacted outside of those named above.

No European and Ramsar sites in other UK Regions and Ireland were identified as requiring detailed HRA screening due to the distance factor and their lack of connectivity to the Northern Plan area. Table 3 lists the European sites that could potentially be impacted and how they are connected to the NAP.

A Natura 2000 site in NI has Conservation Objectives which are defined by NIEA and are intended to ensure that the relevant Annex I habitats and Annex II species present on a site are maintained in a favourable condition. These can be found in **Appendix 1**.

**TABLE 3: Identification of the European Sites which could potentially be impacted.**

\* 1) Within or adjacent to NAP; 2) Ecologically connected to NAP; 3) Within 15km of an economic development zoning of NAP 4) Infrastructurally connected to NAP.

Site Name	Pre-screening categories*			
	1	2	3	4
Antrim Hills SPA	•	•	•	•
Banagher Glen SAC	•	•	•	
Bann Estuary SAC	•	•	•	•
Ballynahone Bog SAC			•	
Binevenagh SAC	•	•	•	
Breen Wood SAC	•	•	•	
Carn - Glenshane Pass SAC	•		•	
Dead Island Bog SAC			•	
Garry Bog SAC and Garry Bog Ramsar	•		•	
Garron Plateau SAC and Garron Plateau Ramsar	•	•	•	
Lough Foyle SPA and Lough Foyle Ramsar	•	•	•	
Lough Neagh & Lough Beg SPA and Ramsar		•	•	•
Magilligan SAC	•	•	•	
Main Valley Bogs SAC	•		•	

North Antrim Coast SAC	•	•	•	
Raithlin Island SPA	•	•	•	
Raithlin Island SAC	•	•	•	
Red Bay SCI	•	•	•	
River Faughan and Tributaries SAC		•	•	
River Roe and Tributaries cSAC	•	•	•	•
Sheep Island SPA	•	•	•	
Skerries and Causeway SCI	•	•	•	
Wolf Island Bog SAC			•	

\* 1) Within or adjacent to NAP; 2) Ecologically connected to NAP; 3) Within 15km of an economic development zoning of NAP 4) Infrastructurally connected to NAP.

## 2.5 Screening Assessment for identified Natura 2000 and Ramsar Sites

The Screening Assessment was carried out to establish whether the Plan Proposals would have a likely significant impact on the interest features and conservation objectives for each of the European sites, and the selection criteria of the designated Ramsar sites identified in table 3.

The methodology to assess likely significant effects utilized the following processes:

- The interest features and conservation objectives of each European or Ramsar Site were identified.
- The potential for interest features to be significantly affected by the implementation of NAP alone or in combination with other plans and projects was assessed.

The relevant information was collected for each European and Ramsar Site using the sources listed below.

<b>European site information</b>	<b>Information source</b>
Site Description	<a href="http://jncc.defra.gov.uk/default.aspx?page=4">http://jncc.defra.gov.uk/default.aspx?page=4</a> <a href="http://www.doeni.gov.uk/niea/protected_areas_home">http://www.doeni.gov.uk/niea/protected_areas_home</a>
Interest/Selection Features	<a href="http://jncc.defra.gov.uk/default.aspx?page=4">http://jncc.defra.gov.uk/default.aspx?page=4</a>
Conservation Objectives Condition Assessments	Unpublished information from Northern Ireland Environment Agency:  Natural Environment NIEA Klondyke Building Cromac Avenue Malone Lower Belfast BT7 2JA

The Joint Nature Conservation Committee (JNCC) acts on behalf of statutory conservation agencies and associated government departments by collecting information on designated sites for nature conservation in the UK. Further information can also be obtained from the NIEA website which holds information on designated sites for nature conservation.

NIEA also holds the details of the Conservation Objectives of European Sites in Northern Ireland. The conservation objectives are not published documents but they can be obtained from NIEA on request. Ramsar Sites do not have conservation objectives. Ramsar Information Sheets for each of the Ramsar sites considered may be found on the JNCC website at [www.jncc.gov.uk](http://www.jncc.gov.uk).

The Plan policy proposals have been tested alone and in combination against the conservation objectives/ selection features for each selected site.



The precautionary principle was applied when carrying out the screening assessment on the selected sites, which requires that the conservation objectives of the site should prevail where there is uncertainty or insufficient data to show there will be no likely significant effects upon a site from the implementation of the Plan directly or in combination with other projects or plans.

## **2.6 Results of Screening Assessment**

### **Sites where there was a potential for direct effects on habitats or species that are interest features of European or Ramsar Sites**

The screening assessment identified European Sites and Ramsar Sites which could potentially be directly impacted by the implementation of NAP based on whether part of the European Site or Ramsar Site is within or directly adjacent to the NAP Plan area. This assessment identified the following European and Ramsar Sites as having the potential to be directly impacted by the implementation of NAP. The individual Screening Assessment forms can be found in Appendix 2.

- Antrim Hills SPA
- Banagher Glen SAC
- Bann Estuary SAC
- Binevenagh SAC
- Breen Wood SAC
- Carn-Glenshane Pass SAC
- Garry Bog SAC and Ramsar
- Garron Plateau SAC and Garron Plateau Ramsar
- Lough Foyle SPA and Lough Foyle Ramsar
- Magilligan SAC
- Main Valley Bogs SAC
- North Antrim Coast SAC
- Rathlin Island SPA and Raithlin Island SAC
- Red Bay SCI
- River Roe and Tributaries SAC
- Sheep Island SPA
- Skerries and Causeway SCI

Under the precautionary methodology utilized these sites were deemed to automatically require Appropriate Assessment due to the potential for likely significant direct impacts (note that during the Appropriate Assessment both direct and indirect impacts on these sites are considered).

### **Sites where there was a potential for indirect effects on habitats or species that are interest features of European or Ramsar Sites**

- Ballynahone Bog SAC (outside but within 9km of the nearest Economic Development zoning).
- Dead Island Bog SAC (outside but within 5km of the nearest Economic Development zoning).

- River Faughan and Tributaries SAC (outside but within 1.6km of the nearest Plan Economic Development zoning).
- Wolf Island Bog SAC (outside but within 2km of the nearest Economic Development zoning).
- Lough Neagh & Lough Beg SPA and Ramsar Site (outside but within 15km of the nearest Economic Development zoning).

Under the precautionary methodology utilized these sites were deemed to require Appropriate Assessment due to the potential for likely significant indirect impacts. The screening assessment forms can be found in Annex 2.

### **3.0 Stage Two: Appropriate Assessment of Natura 2000 Sites**

The aim of this Appropriate Assessment was to identify any potential adverse effect on the integrity of a European or Ramsar Site resulting from the implementation of policies and/or proposals within NAP. In the Appropriate Assessment the impact of NAP (either alone or in combination with other plans or project) on the integrity of European or Ramsar sites is considered with respect to the conservation objectives of the sites and to their ecological structure and function. The coherence of the European or Ramsar sites ecological structure and function, across its whole area and associated supporting structures, enables it to sustain the habitats and/or the levels of populations of species for which it was classified.

An adverse effect would be something that either directly or indirectly: affects the features for which the site was designated and/or the ability of the site to meet its conservation objectives and/or causes alteration, disruption, harm or physical impacts to the ecological structure and functioning of the site or their supporting structures. Such effects can occur within or outside the boundaries of the designated site.

The next step in this process would be to consider the inclusion of mitigation measures for any aspects of the plan which may cause an adverse effect to ensure that all development flowing from, or controlled by, the plan would not have an adverse effect on the integrity of a European or Ramsar site.

An appropriate assessment was carried out for each European or Ramsar sites where a likely significant effect was identified during the screening stage. The appropriate assessment methodology for each European or Ramsar site utilized the following stages:

#### **1. Gathering of information.**

It is essential that the appropriate assessment is based upon a robust evidence base and method. Much of the information used in the Appropriate Assessment had already been gathered for the screening stages of the process but in some instances additional detail or evidence was gathered. The detailed content of the Plan was utilized for the Appropriate Assessment and the characteristics of existing, proposed or approved projects or plans which may cause interactive or cumulative impacts was gathered. The reason for designation and the conservation objectives for each European or Ramsar site was available and additional detailed information was also gathered including the condition assessment of the site (if available); the sensitivities or vulnerability of the site ; the influences of other activities acting upon it; and key structural and functional relationships that create and maintain the site's integrity. Scientific literature was gathered where appropriate to identify the dynamics of habitats, species and their ecology.

#### **2. Identifying aspects of the plan that are likely to have significant effects; and identifying in-combination effects from other plans or projects that are likely to have significant effects.**

Within this step elements of NAP that are likely to give rise to significant effects on the site (either alone or in combination with other plans or projects) are identified.

The relationship (e.g. key distances etc.) between policies or proposals in NAP and the European and Ramsar site was considered in detail in this step.

The types of impact were considered throughout the assessment such as: direct and indirect effects; short and long term effects; construction, operational and decommissioning effects; and isolated, interactive and cumulative effects.

**3. Assessing implications for each qualifying interest of the European or Ramsar site in light of its conservation objectives / adverse impacts on site integrity.**

In carrying out the assessment the precautionary principle was applied and the assessment was focused on objectively demonstrating with supporting evidence, whether or not there would be an adverse impact on the integrity of the European or Ramsar site.

This part of the assessment describes how NAP will affect key species and habitats. It also describes how the integrity of the site (determined by structure and function and conservation objectives) is likely to be affected by the Plan (e.g. loss of habitat, disturbance, disruption, chemical changes, hydrological changes and geological changes, etc). To assist with this an 'Integrity of site checklist' (European Commission 2001) was considered for each site. An example of this checklist is shown in table 4.

**4. Concluding whether or not it can be ascertained that the aspects of the plan would not adversely affect the integrity of the European or Ramsar site.**

This part of the assessment concludes whether or not the integrity of the European or Ramsar site will be affected by the implementation of NAP. If it could not be objectively demonstrated that there would be no adverse impact on the integrity of the European or Ramsar site, or if the level of information or evidence is insufficient to make an objective decision, adverse effects were assumed. If adverse effects are identified the next part of the process will consider what mitigation measures are to be introduced to avoid or reduce the adverse effects on the integrity of the site.

**Table 4: Content of the ‘Integrity of site checklist’. Source (European Commission 2001).**

<b>Integrity of site checklist</b>	
<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<b>Yes/No</b>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<b>Yes/No</b>

### **3.1 Appropriate Assessment for Antrim Hills SPA**

#### **Elements of NAP likely to have significant effects.**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Antrim Hills SPA. In particular the following NAP Plan Proposals and Policy Topics could affect the integrity of the site:

#### 3. Economic Development.

NAP has not zoned any land within Antrim Hills SPA for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

The boundary determination process for the Antrim Hills SPA has taken into account the distribution of Hen Harrier and Merlin nesting attempts and site-fidelity over the past 15 years, focusing on foraging distribution, habitat availability and current land-use. The SPA is ecologically connected to NAP by the potential usage of other areas within the Plan for foraging by Hen Harrier and Merlin. It is also ecologically connected to NAP through river corridors that originate in the Antrim Hills SPA. Map 2 (Appendix 3) shows the boundary of Antrim Hills SPA.

Antrim Hills SPA is linked to NAP by the potential for aerial depositions. The key sources of atmospheric pollutants in Northern Ireland are from industry, transport and agricultural sources.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects and disturbance, on the foraging habitat of Merlin and Hen Harrier arising from development activities in the Northern Area Plan 2016 Larne Area Plan 2010 and the Belfast Metropolitan Area Plan 2015.

#### **Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

Breeding populations of Hen Harrier *Circus cyaneus* and Merlin *Falco columbarius* are the principle reasons for the selection of Antrim Hills as a SPA. The conservation objectives for the site are to maintain each feature in favourable condition. This includes recording measurements of fledgling success, population numbers, and maintenance of the quality of natural and semi-natural habitats that are used by the feature species. The Antrim Hills SPA site is recorded as in favourable condition in the 2011 condition assessment for all site selection features.

The Natura 2000 data form for Antrim Hills SPA records that the site could potentially be damaged by peat-cutting, heavy grazing, excessive burning and

inappropriate management of forestry plantations. The Northern Ireland Species Action Plan for Hen Harrier (NIEA 2005) identified that the current factors affecting the population in Northern Ireland included agricultural reclamation; over grazing; disturbance; forestry management; persecution; and wind farm developments. Wind energy developments represent a potential threat through loss of foraging habitat, disturbance to nests and roosting sites, risk of collision and providing access to previously remote areas. NAP does not include any proposals or policies that would promote the development of wind turbine developments in the proximity of Antrim Hills SPA; however proposals for wind energy developments in the NAP plan area may be submitted during the lifetime of the Plan.

***Species disturbance; habitat destruction or alteration and reduction in foraging areas.***

Hen Harrier requires large expanses of suitable open habitat for hunting primarily small birds or mammals (NIEA 2005) and occasionally on grouse which may cause conflicts with game keeping management (NIEA Conservation objectives). Merlin is primarily an upland breeding species. Breeding is strongly linked to heather moorland where Merlin can nest in deep heather on sloping ground, however on occasion nesting occurs on inland cliff or in conifer plantations (APIS 2014; O’Kill 2004; Stroud et al. 2001).

The foraging range for Hen Harriers from nest sites during the breeding season are: female core range of 1km, with majority of foraging within 2-3km, and maximum range of <10km; Male core range of 2km with maximum range of 10km (Pendlebury et al. 2011). Hen harriers prefer to forage over young first rotation coniferous forests and selected heathland and heterogeneous grassland habitats and tend to avoid afforested areas with lots of foliage over 5m tall and homogeneous grassland areas (Madders 2000). Merlins forage within 5km of nest sites during the breeding season (Pendlebury et al. 2011). Foraging during the breeding season is mainly in open country including moorland (Pendlebury et al. 2011). In winter both species disperse widely. Due to the proximity of the SPA to NAP there is a potential for Hen Harrier and Merlin to forage within the NAP area during the nesting period.

Most of the Antrim Hills SPA is located within the Moyle District Council in the NAP. NAP has not zoned any land within or directly adjacent to Antrim Hills SPA for development. The nearest development zonation is approximately 2.5km away at Ballyvoy, and Loughguile. The nearest industrial zonation is 5km away at Cushendall. Due to this distance factor the plan does not include any policies or proposals that would influence increased human disturbance levels on Antrim Hills SPA.

However there are areas within NAP that would provide suitable foraging habitat for Hen Harrier during nesting periods. During the lifetime of the plan there may be development applications which could result in disturbance to this bird species. PPS1 indicates that Development Plans are the primary means of evaluating any potential conflict between the need for development and protection of the environment. NAP does not give any indication that impacts of development on these foraging areas may be an environmental constraint; this could result in a Habitat Regulation Assessment being carried out for specific proposals to ensure there would be no adverse impacts on the European site.

***Policy Grouping 3 - Economic Development***

Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from the NAP area have the potential to lead to eutrophication and soil acidification. Both Merlin and Hen Harrier have adapted to nesting in coniferous woodland rather than moorland which probably decreases their sensitivity to acidification or eutrophication caused by aerial depositions (APIS 2014). The dwarf shrub heath which is utilized by both Hen Harrier and Merlin is sensitive to eutrophication which can decrease heather dominance and result in a decline of old deep heather nesting sites (APIS 2014).

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011).

Where an installation is within 15km of a European site, applicants may be required to make an assessment of potential impacts; this assessment may require the use of detailed air impact assessment or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals involving installations regulated under the Pollution Prevention and Control Regulations which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ *a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*’ (<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>)

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011

Antrim Hills SPA selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity



	2009-2011	2009-2011	2009-2011
Hen Harrier, <i>Circus cyaneus</i> ; Merlin <i>Falco columbarius</i> associated habitat Dwarf Shrub Heath	**	*	*

The table indicates that atmospheric deposition from the NAP area is a threat to Antrim Hills SPA; nitrogen deposition has exceeded critical loads and may have an impact on site selection features due to impacts on foraging habitat of SPA feature species. Acidity critical loads have not been exceeded for site selection features to date. The main source of potentially damaging aerial deposition onto these SPAs has been attributed to imported or agricultural sources (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. Nor does it give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

During the lifetime of the plan there may be other future development applications within the NAP area which could result in aerial deposition on the SPA in question. Any such proposals would be out-with any plan proposals and would have to be considered on a case by case basis.

**Integrity of site checklist**

<p><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>
<p><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p>

• Reduce the area of key habitats?	Yes
• Reduce the population of key species?	No
• Change the balance between key species?	No
• Reduce diversity of the site?	No
• Result in disturbance that could affect population size or density or the balance between key species?	No
• Result in fragmentation?	Yes
• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	Yes

**Appropriate Assessment conclusion and recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Antrim Hills SPA. Therefore mitigation measures are required with regard for disturbance and reduction of foraging habitats, see section **5.0 Mitigation Measures**.

This assessment deems that consultation zones should be identified for Antrim Hills SPA for Hen Harrier, within which proposed developments or operations will be required to consult Natural Environment Division, NIEA to ensure that an appropriate Habitats Regulations Assessment is carried out. Maps 10 and 11 (Appendix 3) show the boundary of the areas suggested as a consultation zones for Antrim Hills SPA. As the majority of Hen Harriers forage within 2-3km from nesting sites during the breeding season (Pendlebury et al. 2011), a maximum distance of 2.5km of suitable foraging habitat from the SPA boundary was considered adequate for all consultation zone boundaries.

### **3.2 Appropriate Assessment for Banagher Glen SAC**

In the screening it was not possible to objectively show that there would be no significant effects on the integrity of Banagher Glen SAC. Therefore the 'precautionary principle' must be applied and potential significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### **3. Economic Development**

NAP has not zoned any land within Banagher Glen SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives.

The site consists of a complex system of river valleys with wooded areas surrounding the main Owenrigh River valley and its three tributary valleys all to the south. The site has a history of continuous woodland cover, with the present woodland being over 200 years old. Due to the underlying geology the site supports examples of both acid Oak woodland and a smaller component of base-rich Ash woodland. The boundary has been drawn to include the best examples of Oak and Ash woodland, in addition to other semi-natural habitats that form part of the natural transition, such as to heath. Map 3 (Appendix 3) shows the boundary of Banagher Glen SAC.

#### **In-combination effects from other plans or projects that is likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Banagher Glen arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015.

#### **Conservation Objectives and implications for each qualifying interest.**

The principle selection features for Banagher Glen SAC are Old Sessile Oak Woods with *Ilex* and *Blechnum* and Tilio-Acerion forests of slopes, screes and ravines. The conservation objectives for Banagher Glen are to maintain each feature in favourable condition.

#### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both

ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to lead to eutrophication and soil acidification.

Nitrogen deposition is not believed to have a direct, major effect on tree growth in the UK. Surveys have shown no evidence of widespread damage from air pollution to forest trees, however its indirect effects are many and varied (UKreate 2010b). Woodlands can be indirectly affected by Nitrogen deposition through eutrophication and acidification, those surrounded by agricultural land and roads are at greater risk from invading plant species leading to changes in composition of ground flora, due to the greater availability of a seed source for such plants. Woodlands near intensive livestock units are particularly at risk from ammonia deposition, especially those growing on acid soils, which can be toxic to trees and ground flora (Krupa 2003).

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 35km from the European site it is unlikely to have any significant adverse effects.

Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011

Banagher Glen SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Old Sessile Oak Woods with Ilex and Blechnum in the British Isles	**	**	*
Tilio-Acerion forests of slopes, screes and ravines	**	**	*

The table indicates nitrogen deposition and nitrogen acidity levels have exceeded the critical limits for Banagher Glen SAC selection features and any further aerial pollution could have an adverse effect on the integrity of the European site, leading to a loss of key species and change in ground vegetation (APIS 2014). The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

### Integrity of Site Checklist

<p><b>Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p><b>Other indicators: Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes</p> <p>No</p>

<ul style="list-style-type: none"> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p>
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**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Banagher Glen SAC therefore mitigation measures are required for the impacts of aerial deposition. See section **4.0 Mitigation Measures**.

### 3.3 Appropriate Assessment for Ballynahone Bog SAC

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Ballynahone Bog SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

- 3. Economic Development
- 10. Mineral Extraction

NAP has not zoned any land within Ballynahone Bog SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives.

Ballynahone Bog is located outside the NAP plan boundary however is situated within 15km of an economic development zoning within the Plan and therefore linked to it by the potential for aerial deposition.

Ballynahone Bog lies in the Moyola River valley 3 km south-east of Maghera and 3 km north-east of Tobermore in Magherafelt District. The peat has formed on either side of an Esker ridge, which would have impeded drainage, creating the waterlogged conditions that eventually lead to the formation of the raised bog. The active raised bog supports hummock, hollow and pool complexes, and notable peatland flora including Bog-rosemary *Andromeda polifolia* and the bog mosses *Sphagnum fuscum*, *S. austinii* and *S. pulchrum*. The boundary of Ballynahone Bog has been drawn to include all areas of intact lowland raised bog and associated semi-natural habitats. This includes cutover bog, pockets of acid grassland and some fairly extensive areas of Birch scrub and wood associated with the degraded peat bog surface.

#### **In-combination effects from other plans or projects that is likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Ballynahone Bog arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified a potential for in combination effects from mineral extraction within the Magherafelt Area Plan 2015.

#### **Conservation Objectives and implications for each qualifying interest.**

The principle selection feature for Ballynahone Bog is Active Raised Bog, the main conservation feature objectives for the European site are to maintain the extent of intact lowland raised bog and actively regenerating raised bog vegetation, maintain and enhance the quality of the lowland raised bog community types including the presence of notable species, seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog, maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog, maintain the hydrology of the raised bog peat mass and seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

The vulnerability section of the Natura 2000 data form for Ballynahone Bog and NIEA condition assessment record that the site could potentially be damaged by drainage and peat cutting, there has been extensive hand cutting for many years around the periphery of Ballynahone Bog. This has encroached significantly into the intact surface of the raised bog. The European site is also vulnerable to burning, scrub encroachment, grazing, fly-tipping and changes to surrounding landuse. Ballynahone Bog SAC was recorded as being in unfavourable but recovering condition in the 2011 condition assessment. The unfavourable condition of Ballynahone Bog recorded is due to occasional tree and scrub encroachment.

### ***Policy Grouping 3 - Economic Development***

Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from the NAP area have the potential to lead to eutrophication and soil acidification.

Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.



The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 28km from the European site it is unlikely to have any significant adverse effects.

Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge’  
<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011

Ballynahone Bog SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Active raised Bog	**	**	*

The table indicates nitrogen deposition and nitrogen acidity levels have exceeded the critical limits for Ballynahone Bog SAC and any further aerial pollution could have an adverse effect on the integrity of the European site, leading to an increase in vascular plants, altered growth and species composition of bryophytes and increased Nitrogen in peat and peat water (APIS 2014). The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case

by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

***Policy Grouping 10 - Mineral Extraction***

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites. Consequently these applications will be dealt with at Development Control stage in association with the Mineral policies in the PSRNI and PPS 2: Natural Heritage.

The Plan states ***“In accordance with Policy MIN 1 of the PRSNI, decisions on applications for mineral extraction will be made with regard to the preservation of natural features of the landscape, which include the coastal zone. Any application will be subject to rigorous assessment to avoid any significant adverse impacts on ecology, shoreline stability and the environmental amenity of these areas in accordance with PPS 2”.***

Mineral extraction in close proximity to Ballynahone Bog SAC could result in potentially damaging hydrological changes, pollution and disturbance. To assist in the identification of applications which should be assessed under the Habitats Directive, a Consultation Zone should be identified.

**Integrity of Site Checklist**

<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p>

<ul style="list-style-type: none"> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Reduce the area of key habitats?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Reduce the population of key species?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Change the balance between key species?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Reduce diversity of the site?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Result in fragmentation?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	Yes

**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Ballynahone Bog SAC therefore mitigation measures are required for the impacts of aerial pollution and hydrological effects. See section **4.0 Mitigation Measures**.

This assessment deems that a consultation zone should be identified for Ballynahone Bog with regard for hydrological effects. Map 4 (Appendix 3) shows the SAC boundary and the suggested Consultation Zone boundary, within which proposed developments or operations will be required to consult Natural Environment Division, NIEA to ensure that an appropriate Habitats Regulations Assessment is carried out.

### **3.4 Appropriate Assessment for Carn-Glenshane Pass SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Carn-Glenshane Pass SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

- 3. Economic Development
- 10. Mineral Extraction

NAP has not zoned any land within Carn-Glenshane Pass SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives.

Carn-Glenshane Pass extends over the uplands to the north-east of the Sperrin Mountains, between Maghera and Dungiven. It falls into Coleraine and Limavady Borough Councils and Magherafelt District Council. It is located partly within the NAP Plan boundary and Magerafelt Plan boundary. Carn-Glenshane Pass is an area of largely intact blanket bog, estimated to be just over 1650 ha, it is one of the few remaining examples of good quality blanket bog within this region of Northern Ireland. The boundary of Carn-Glenshane Pass has been drawn to include all areas of high quality blanket bog and associated semi-natural habitats, including cutover bog, wet and dry heath, acid flushes, flushed and wet grassland and dry grassland, particularly along the streams that run through the area.

#### **In-combination effects from other plans or projects that are likely to have significant effects**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Carn-Glenshane Pass arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Northern Area Plan.

#### **Conservation Objectives and implications for each qualifying interest.**

The principle selection feature for Carn-Glenshane Pass is Active Blanket Bogs, the main conservation objectives for the site are to maintain the extent of intact blanket bog and actively regenerating blanket bog vegetation, maintain and enhance the quality of the blanket bog community types including the presence of notable species, seek to expand the extent of actively regenerating blanket bog vegetation into degraded (non-active) areas of cutover bog, maintain the diversity and quality of other habitats associated with the blanket bog, especially where these exhibit natural transition to the blanket bog, maintain the hydrology of the intact blanket bog peat mass and seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for blanket bog rehabilitation.

The vulnerability section of the Natura 2000 data form for Carn-Glenshane Pass SAC records that the site could potentially be damaged by further drainage, peat-cutting, changes to surrounding landuse, fires or over-grazing. New development may result in possible loss of, or damage to, suitable habitat adjacent to the site which may have the potential for blanket bog rehabilitation; potential to increase peat erosion through additional human activity

### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes

both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 25km from the European site it is unlikely to have any significant adverse effects.

Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ *a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*’  
(<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>)

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition).CBED is based on measured–interpolated data for a 3 year average 2009-201

Carn Glenshane Pass SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Blanket Bog	**	**	*

The table indicates nitrogen deposition and nitrogen acidity levels have exceeded the critical limits for Carn-Glenshane Pass SAC and any further aerial pollution could have an adverse effect on the integrity of the European site, leading to an increase in vascular plants, altered growth and species composition of bryophytes and increased Nitrogen in peat and peat water (APIS 2014). The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources and imported emissions (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the

environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

**Policy Grouping 10 - Mineral Extraction**

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites. Consequently these applications will be dealt with at Development Control stage in association with the Mineral policies in the PSRNI and PPS 2: Natural Heritage.

The Plan states *“In accordance with Policy MIN 1 of the PRSNI, decisions on applications for mineral extraction will be made with regard to the preservation of natural features of the landscape, which include the coastal zone. Any application will be subject to rigorous assessment to avoid any significant adverse impacts on ecology, shoreline stability and the environmental amenity of these areas in accordance with PPS 2”*.

Mineral extraction in close proximity to Carn-Glenshane Pass SAC could result in potentially damaging hydrological changes, pollution and disturbance. To assist in the identification of applications which should be assessed under the Habitats Directive, a Consultation Zone should be identified.

**Integrity of Site Checklist**

<p style="text-align: center;"><b>Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p>
<p style="text-align: center;"><b>Other indicators: Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>

dynamics or chemical composition)?	No
• Reduce the area of key habitats?	Yes
• Reduce the population of key species?	Yes
• Change the balance between key species?	Yes
• Reduce diversity of the site?	No
• Result in disturbance that could affect population size or density or the balance between key species?	No
• Result in fragmentation?	Yes
• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	Yes

**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Carn-Glenshane Pass SAC therefore mitigation measures are required for the impacts of aerial pollution and hydrological effects. See section **4.0 Mitigation Measures**.

This assessment deems that a consultation zone should be identified for Carn-Glenshane Pass SAC with regard for hydrological effects. Map 5 (Appendix 3) shows the SAC boundary and the suggested Consultation Zone boundary, within which proposed developments or operations will be required to consult Natural Environment Division, NIEA to ensure that an appropriate Habitats Regulations Assessment is carried out.



### **3.5 Appropriate Assessment for Dead Island Bog SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Dead Island Bog SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

- 3. Economic Development
- 10. Mineral Extraction

NAP has not zoned any land within Dead Island Bog SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives.

Dead Island Bog SAC is located outside the NAP plan boundary however is situated with 15km of an economic development zoning within the Plan and therefore linked to it by the potential for aerial pollution. It is a lowland raised bog lying in a shallow interdrumlin hollow within the Lower Bann valley. The boundaries of the area use permanent man-made features around the periphery. The boundary includes all intact lowland raised bog and associated semi-natural habitats, including cutover bog and Birch scrub.

#### **In-combination effects from other plans or projects that are likely to have significant effects**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Dead Island Bog arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Magherafelt Area Plan 2015.

#### **Conservation Objectives and implications for each qualifying interest.**

The principle selection feature for Dead Island Bog SAC is Active Blanket Bogs, the main conservation objectives for the site include, maintaining and enhancing the quality of the lowland raised bog community types including the presence of notable species, maintain the extent of lowland raised bog and actively regenerating bog

vegetation, seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog and maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog.

The vulnerability section of the JNCC data form and NIEA conservation objectives record that the European site could potentially be damaged by, drainage, burning, grazing, scrub encroachment, changes in surrounding landuse and peat cutting. There has been extensive hand cutting for many years around the periphery. This has encroached significantly into the intact surface of the raised bog. New development may result in indirect eutrophication of, and changes to site hydrology, quality of habitat, damage associated with human activity and adverse impacts caused by increased recreational pressures.

### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data) (APIS 2014). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 20km from the European site it is unlikely to have any significant adverse effects. Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial

emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge’  
<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-201

Dead Island Bog SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Blanket Bog	**	**	*

The table indicates nitrogen deposition and nitrogen acidity levels have exceeded the critical limits for Dead Island Bog SAC and any further aerial pollution could have an adverse effect on the integrity of the European site, leading to an increase in vascular plants, altered growth and species composition of bryophytes and increased Nitrogen in peat and peat water (APIS 2014). The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources and imported emissions (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

**Policy Grouping 10 - Mineral Extraction**

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites. Consequently these applications will be dealt with at Development Control stage in association with the Mineral policies in the PSRNI and PPS 2: Natural Heritage.

The Plan states ***“In accordance with Policy MIN 1 of the PRSNI, decisions on applications for mineral extraction will be made with regard to the preservation of natural features of the landscape, which include the coastal zone. Any application will be subject to rigorous assessment to avoid any significant adverse impacts on ecology, shoreline stability and the environmental amenity of these areas in accordance with PPS 2”.***

Mineral extraction in close proximity to Dead Island Bog SAC could result in potentially damaging hydrological changes, pollution and disturbance. To assist in the identification of applications which should be assessed under the Habitats Directive, a Consultation Zone should be identified.

**Integrity of Site Checklist**

<p style="text-align: center;"><b>Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes Yes Yes Yes</p>
<p style="text-align: center;"><b>Other indicators: Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes No No No Yes Yes Yes No</p>

<p>between key species?</p> <ul style="list-style-type: none"> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p>No Yes</p>
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**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Dead Island Bog SAC therefore mitigation measures are required for the impacts of aerial pollution and hydrological effects. See section **4.0 Mitigation Measures**.

This assessment deems that a consultation zone should be identified for Dead Island Bog SAC with regard for hydrological effects. Map 6 (Appendix 3) shows the SAC boundary and the suggested Consultation Zone boundary, within which proposed developments or operations will be required to consult Natural Environment Division, NIEA to ensure that an appropriate Habitats Regulations Assessment is carried out.

### **3.6 Appropriate Assessment for Garry Bog SAC and Ramsar.**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Garry Bog SAC and Ramsar. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

- 3. Economic development
- 10. Mineral Extraction

NAP has not zoned any land within Garry Bog SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives.

Garry Bog SAC is located entirely within the NAP Plan boundary. It lies to the west of the Bush River directly north of Ballymoney and represents one of the largest remaining areas of uncut lowland active raised bog in NI. It is a reasonably compact site that displays the classic characteristics of a lowland raised bog, including a large, well-developed pool complex and partially intact lagg. Peatland flora includes the bog mosses *Sphagnum fuscum*, *S. imbricatum* and *S. pulchrum*, which is abundant in the pool system.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Garry Bog arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Northern Area Plan.

#### **Conservation Objectives and implications for each qualifying interest.**

The principle selection feature for Garry Bog SAC is active raised bog habitat. The conservation objectives for Garry Bog SAC are to maintain the active raised bog in favourable condition, maintain and enhance the quality of the lowland raised bog community types including the presence of notable species, seek to expand the extent

of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog, maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog, maintain the hydrology of the raised bog peat mass and Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

The vulnerability section of the Natura 2000 data form for Garry Bog SAC and NIEA condition assessment record that the site could potentially be damaged by peat cutting, burning of vegetation, drainage, grazing, scrub encroachment and changes in surrounding land use. Lowland raised bogs are not suitable for grazing, as the surface is fragile and easily damaged by poaching. There has been no evidence of any current grazing within the SAC.

In 2011 condition assessment report Garry Bog SAC status was recorded as unfavourable but recovering due to vegetation composition. The cover of ericoid dwarf shrubs was marginally high with a mean cover of 62.9% which is slightly over the target of maximum of 60%. However all other attributes measured on Garry Bog are favourable.

### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. However the NAP does

designate a zone for industry within Ballymoney Town which is approx 5km from the European site, economic development zoning BYI 03. BYI 03 is zoned for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions which could adversely affect the selection features of Garry Bog SAC.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge’ (<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>)

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition).CBED is based on measured–interpolated data for a 3 year average 2009-2011

Garry Bog SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Active raised Bog	**	**	*

The table indicates nitrogen deposition and nitrogen acidity levels have exceeded the critical limits for Garry Bog SAC and any further aerial pollution could have an adverse effect on the integrity of the European site, leading to an increase in vascular plants, altered growth and species composition of bryophytes and increased Nitrogen in peat and peat water (APIS 2014). The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources and imported emissions (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.



Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

**Policy Grouping 10 - Mineral Extraction**

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites. Consequently these applications will be dealt with at Development Control stage in association with the Mineral policies in the PSRNI and PPS 2: Natural Heritage.

The Plan states *“In accordance with Policy MIN 1 of the PRSNI, decisions on applications for mineral extraction will be made with regard to the preservation of natural features of the landscape, which include the coastal zone. Any application will be subject to rigorous assessment to avoid any significant adverse impacts on ecology, shoreline stability and the environmental amenity of these areas in accordance with PPS 2”.*

Mineral extraction in close proximity to Garry Bog SAC could result in potentially damaging hydrological changes, pollution and disturbance. To assist in the identification of applications which should be assessed under the Habitats Directive, a Consultation Zone should be identified.

**Integrity of site checklist**

<p style="text-align: center;"><b>Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p>
<p style="text-align: center;"><b>Other indicators: Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>

<ul style="list-style-type: none"> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p>
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**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Garry Bog SAC. Mitigation measures are therefore required for the effects of aerial pollution and hydrological effects. See section **4.0 Mitigation Measures**.

This assessment deems that a consultation zone should be identified for Garry Bog SAC with regard for hydrological effects. Map 7 (Appendix 3) shows the SAC boundary and the suggested Consultation Zone boundary, within which proposed developments or operations will be required to consult Natural Environment Division, NIEA to ensure that an appropriate Habitats Regulations Assessment is carried out.

### 3.7 Main Valley Bogs SAC

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Main Valley Bogs SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

- 3. Economic Development.
- 10. Mineral Extraction

NAP has not zoned any land within Main Valley Bogs SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives.

Main Valley Bogs is a composite site along the River Main valley, north of Lough Neagh; they incorporate three active raised bogs that occur as part of a complex along the valley. Although pool development on each of the component bogs is limited, they all display the classic dome formation with hummocks and hollows (JNCC 2014). The SAC boundary around each of the raised bogs is defined as the edge of the semi-natural habitat associated with the raised bogs' hydrological unit. The three bogs, although clearly associated with the River Main Valley, are hydro logically distinct and each one is almost completely surrounded by improved agricultural land.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Main Valley Bogs SAC arising from development activities in the Northern Area Plan 2016, Antrim Area Plan 2001 and Ballymena Area Plan 2001. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Northern Area Plan.

#### **Conservation Objectives and implications for each qualifying interest**

The principle selection feature for Main Valley Bogs is Active Raised Bogs. The conservation objectives for the selection feature are; to maintain the extent of lowland raised bog and actively regenerating lowland bog vegetation, maintain and enhance the quality of the lowland raised bog community types including the presence of

notable species, seek to expand the extent of actively regenerating bog vegetation into degraded areas of cutover bog, maintain the diversity and quality of other habitats associated with the active raised bog, maintain the hydrology of the raised bog peat mass and seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

The vulnerability section of the Natura 2000 data form and NIEA conservation objectives record that the site could potentially be damaged by activities that includes, drainage, burning, grazing, scrub encroachment, shooting and peat cutting. For many years extensive hand cutting of peat around the periphery of Main Valley Bogs has encroached significantly into the intact surface of the raised bog. However, the majority of old hand cuttings now support actively regenerating bog vegetation.

### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

The NAP designates a zone for industry within Ballymoney Town which is approx 8km from the European site, economic development zoning BYI 03. BYI 03 is zoned for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions which could adversely affect the selection features of Main Valley Bogs SAC.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge’  
 (<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>)

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011

Main Valley Bogs SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Active raised Bog	**	**	*

The table indicates nitrogen deposition and nitrogen acidity levels have exceeded the critical limits for Main Valley Bogs SAC and any further aerial pollution could have an adverse effect on the integrity of the European site, leading to an increase in vascular plants, altered growth and species composition of bryophytes and increased Nitrogen in peat and peat water (APIS 2014). The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

***Policy Grouping 10 - Mineral Extraction***

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites.

Consequently these applications will be dealt with at Development Control stage in association with the Mineral policies in the PSRNI and PPS 2: Natural Heritage.

The Plan states ***“In accordance with Policy MIN 1 of the PRSNI, decisions on applications for mineral extraction will be made with regard to the preservation of natural features of the landscape, which include the coastal zone. Any application will be subject to rigorous assessment to avoid any significant adverse impacts on ecology, shoreline stability and the environmental amenity of these areas in accordance with PPS 2”.***

Mineral extraction in close proximity to Main Valley Bogs SAC could result in potentially damaging hydrological changes, pollution and disturbance. To assist in the identification of applications which should be assessed under the Habitats Directive, Consultation Zones should be identified for all three parts of Main Valley Bogs SAC.

### Integrity of site checklist

<b><i>Does the project or plan have the potential to:</i></b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p>Yes Yes Yes Yes</p>
<p><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p>Yes No No No Yes Yes Yes No No Yes</p>

### Appropriate Assessment Conclusion and Recommendations

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect

key species and key habitats or the integrity of Main Valley Bogs SAC. Mitigation measures are therefore required for the effects of aerial pollution and hydrological effects. See section **4.0 Mitigation Measures**.

This assessment deems that a consultation zone should be identified for Main Valley Bogs SAC with regard for hydrological effects. Map 8 (Appendix 3) shows the SAC boundary and the suggested Consultation Zone boundary, within which proposed developments or operations will be required to consult Natural Environment Division, NIEA to ensure that an appropriate Habitats Regulations Assessment is carried out.

### 3.8 Wolf Island Bog SAC

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Wolf Island Bog SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

- 3. Economic Development.
- 10. Mineral Extraction

NAP has not zoned any land within Wolf Island Bog SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives.

Wolf Island Bog SAC is located outside the NAP plan boundary however is situated with 15km of an economic development zoning within the Plan and therefore linked to it by the potential for aerial pollution. Wolf Island Bog lies to the west of the River Bann directly south of Kilrea and with an intact surface of 71.8 ha, it represents one of the largest remaining areas of uncut lowland raised bog in County Londonderry. It has since become an important site for tephra studies and for investigations of Mediaeval and recent landscape change. The bog is divided into two parts, but despite this, it is a reasonably compact site within a landscape, which has largely been improved for agricultural use. The boundary has been demarcated to include all areas of intact lowland raised bog and associated semi-natural habitats, including cutover bog and small pockets of Birch scrub.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Dead Island Bog arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Magerafelt Area Plan 2015.

#### **Conservation Objectives and implications for each qualifying interest**



The principle selection feature for Wolf Island Bog is active raised bog. The conservation objectives for the site are to maintain each feature in favourable condition (See appendix 1). The 2011 condition assessment carried out by NIEA recorded the site feature as being in favourable condition.

The Natura 2000 data form for Antrim Hills SPA and NIEA conservation objectives record that the site could potentially be damaged by peat cutting, drainage, grazing, scrub encroachment, burning and changes in surrounding landuse. New development may result in indirect eutrophication of, and changes to, site hydrology, quality of habitat and damage associated with human activity resulting from new development.

### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 18km from the European site it is unlikely to have any significant adverse effects. Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge’  
(<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>)

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition).CBED is based on measured–interpolated data for a 3 year average 2009-2011

Wolf Bog SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Active raised Bog	**	**	*

The table indicates nitrogen deposition and nitrogen acidity levels have exceeded the critical limits for Wolf Bog SAC and any further aerial pollution could have an adverse effect on the integrity of the European site, leading to an increase in vascular plants, altered growth and species composition of bryophytes and increased Nitrogen in peat and peat water (APIS 2014). The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

***Policy Grouping 10 - Mineral Extraction***

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites. Consequently these applications will be dealt with at Development Control stage in association with the Mineral policies in the PSRNI and PPS 2: Natural Heritage.

The Plan states ***“In accordance with Policy MIN 1 of the PRSNI, decisions on applications for mineral extraction will be made with regard to the preservation of natural features of the landscape, which include the coastal zone. Any application will be subject to rigorous assessment to avoid any significant adverse impacts on ecology, shoreline stability and the environmental amenity of these areas in accordance with PPS 2”.***

Mineral extraction in close proximity to Wolf Island Bog SAC could result in potentially damaging hydrological changes, pollution and disturbance. To assist in the identification of applications which should be assessed under the Habitats Directive, a Consultation Zone should be identified for Wolf Island Bog SAC.

**Integrity of site checklist**

<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p>Yes</p> <p>No</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p>

flooding, etc.)?	
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**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Wolf Island Bog SAC. Mitigation measures are therefore required for the effects of aerial pollution and hydrological effects. See section **4.0 Mitigation Measures**.

This assessment deems that a consultation zone should be identified for Wolf Island Bog SAC with regard for hydrological effects. Map 9 (Appendix 3) shows the SAC boundary and the suggested Consultation Zone boundary, within which proposed developments or operations will be required to consult Natural Environment Division, NIEA to ensure that an appropriate Habitats Regulations Assessment is carried out.

### **3.9 Appropriate Assessment for Lough Neagh and Lough Beg SPA and Ramsar**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Lough Neagh and Lough Beg SPA and Ramsar Site. Therefore the ‘precautionary principle’ must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

2. Housing
3. Economic Development

NAP has not zoned any land within Lough Neagh and Lough Beg SPA / Ramsar for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the Lough.

Lough Neagh & Lough Beg SPA and Ramsar Site is located outside of the NAP Plan area approx 13km from the Plan boundary at its nearest point, however the European site is connected to NAP ecologically by the River Main which flows through the NAP and into Lough Neagh and Lough Beg SPA and Ramsar.

Lough Neagh is the largest freshwater lake in the UK. It is a large, shallow eutrophic Lake. The main habitats within the SPA are open water with beds of submerged aquatic vegetation, species-rich wet grassland, reed bed, islands, swamp, fen and Carr woodland. The SPA supports internationally important numbers of wintering waterfowl and is internationally important for a number of wildfowl species including Whooper Swan, Bewick’s Swan, Pochard, Tufted Duck, Scaup and Goldeneye. It is also internationally important for breeding Common Tern. The site also qualifies as an SPA as it is a wetland regularly supporting at least 20,000 waterfowl.

The boundary of the European site takes in the main water bodies, including Portmore Lough and Lough Beg, together with all adjoining natural and semi-natural habitat of conservation significance. All islands within Lough Neagh are also included. Maps 12 and 13 (Appendix 3) show the boundary of Lough Neagh and Lough beg SPA and Ramsar boundary.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

Plan proposals, alone, cumulatively or in combination with proposals from NAP and other District Council areas may indirectly result in changes in water quality as a result of increased sewerage and storm-water run-off. Development proposals or

associated policies within, adjacent or which are linked to watercourses associated with Lough Neagh and Lough Beg SPA and Ramsar could result in habitat destruction.

The screening identified that there was a potential for in combination eutrophication and acidification effects from aerial pollution, arising from development activities in the Northern Area Plan 2016, Magherafelt Area Plan 2015, Antrim Area Plan 1984-2001; Armagh Area Plan 2004; Craigavon Area Plan 2010; Craigavon Town Centre Boundaries and Retail Designation Plan 2010; Cookstown Area Plan 2010; Dungannon and South Tyrone Area Plan 2010, Banbridge Newry and Mourne Area Plan 2015 and the Belfast Metropolitan Area Plan 2015.

As Lough Neagh provides water for approximately one third of the population of Northern Ireland there will be cumulative abstraction pressures associated with Development Plans throughout Northern Ireland and Water Resource Plans and associated capital works.

Development activities adjacent to Lough Neagh Larne Area Plan may lead to a shift in the balance of species utilizing Lough Neagh SPA and Ramsar in particular those related to landfill sites. In Northern Ireland the NI Waste Management Strategy 2006-2020 (DOE 2006) provided an overall strategy for waste management (this plan was revised by DOE in 2013).

### **Conservation Objectives and implications for each qualifying interest**

The principle selection features for Lough Neagh and Lough Beg SPA and Ramsar are various over-wintering and migratory waterfowl, breeding birds and habitat. The main habitats within the SPA and Ramsar are open water with beds of submerged aquatic vegetation, species rich wet grassland, reedbed, islands swamp, fen and carr woodland. The conservation objectives for the European site are to ensure no significant decrease in population against national trends for Feature bird species, caused by on-site factors, fledging success, to maintain or enhance the area of natural and semi-natural habitats potentially usable by Feature bird species subject to natural processes, to maintain the extent of main habitat components subject to natural processes and maintain or enhance sites utilised as roosts (See appendix 1).

The site qualifies as a Ramsar site due to: the site being a good representative of a natural or near-natural wetland; supports an assemblage of rare, vulnerable or endangered plants and invertebrates; has value for maintaining the genetic and ecological diversity of the region; has value as habitat for animals at a critical stage of their biological life cycles; and supports a population of pollan *Coregonus autumnalis*.

The vulnerability section of the Natura 2000 data form and NIEA conservation objectives record that the European site could potentially be adversely affected by activities which include boating activity (recreational more than commercial), drainage, sand dredging, fishing (recreational and commercial), water abstraction and invasive species. The site has been vulnerable in the past to severe eutrophication, changes in agricultural land use (both intensification and under management), and the introduction of invasive non-native species. The last condition assessment for Lough

Neagh SPA and Ramsar (2008) the waterfowl assemblage was in unfavourable condition, this was attributed to the decline in diving duck numbers.

Wind energy developments represent a potential threat of collision as feature bird species fly across the NAP area, in particular to swans and geese. The Conservation Objectives Report highlights that there is a need to consider flight lines, as well as feeding and loafing areas. NAP does not include any proposals or policies that would promote the development of wind turbine developments in the NAP area; however proposals for wind energy developments in the NAP plan area may be submitted during the lifetime of the Plan. Such proposals would have to be considered on a case by case basis utilizing any detailed information about flight paths that becomes available. Planning policy related to renewable energy developments can be found in PPS18.

### ***Policy Grouping 2-Housing***

The Lough and surrounding areas are designated as Sensitive Areas (Eutrophic) under the Urban Wastewater Treatment Directive. Under the Water Framework Directive classifications Lough Neagh had bad ecological potential and Portmore Lough had bad status in 2009, mainly due to macrophyte composition and the level of total phosphorus NAP does not contain any settlements directly adjacent to the Lough, however the lough is feed by water from the River Main.

The River Main had moderate status in 2009. The Braid and Main Local Management Action Plan has put in place action plans to inspect WWTW and septic tanks associated with the river, and to carry out compliance assessment of consented industrial discharges.

Policy Grouping 2-Housing has the potential to create new build and is likely to have associated sewerage discharge which could impact on water quality, where there may be insufficient or no WWTW Design Capacity. This could have an adverse impact on water quality, either alone or in combination with diffuse agricultural pollution and/or discharge from outside the Northern Area Plan, resulting in increased eutrophication and potentially adverse changes to food availability for birdlife.

NAP has designated six housing zonings within the settlement development limits of Cloughmills, zonings CHS 02 to CHS 07. Each zoning will have in the range of 15 to 25 dwellings per hectare. Clough Mills is hydrologically connected to the European Site by the River Main which flows through the settlement and into Neagh and Lough Beg SPA and Ramsar.

As of 2014 there is currently sufficient WWTW Design Capacity in the Cloughmills WWTW for further development of housing within the proposed Development Limits of CloughMills. Figures for WWTW capacity from NI Water (Appendix 5) show there is sufficient capacity for a further 287 households which is a large enough number to accommodate the proposed number of housing zonings within Cloughmills Settlement Development Llimits.

In light of this information it is judged that any water quality issues caused by the Plan would have a minimal impact due to the distance of the site from the Plan area

and the existing available capacity in the WWTW that services the settlement of Clough Mills.

There is an existing regulatory regime in place that should control discharges associated with any proposals resulting from the implementation of NAP. NIEA are responsible under the Water (NI) Order 1999 for preventing or minimizing the effects of pollution entering our waterways and to manage the risk of a polluting discharge from occurring. There are currently measures in place to ensure that proposals associated with the rivers meet legal requirements associated with: The Drinking Water Directives (80/778/EEC and 98/83/EC); the Major Accidents Directive (96/82/EC); the Environmental Impact Assessment Directive (85/337/EEC); the Sewage Sludge Directive (86/278/EEC); The Urban Waste Water Treatment Directive (91/271/EEC); the Plant Protection Products Directive (91/414/EEC) the Nitrates Directive (91/676/EEC) and the Integrated Pollution Prevention and Control Directive. In addition to this any discharge of trade, sewage effluent or any other potential pollution (including effluent from any commercial, industrial or domestic premises or site drainage) to any waterway or any water contained in underground strata requires consent from the Department of the Environment under the Water (Northern Ireland) Order 1999 (Consent for certain other discharges are also required under the Water and Sewage Service (NI) Order 1973 as amended). Such consents can include conditions outlining the quantity and quality of the discharges and are drawn up to ensure that the waste can be absorbed by the receiving waterway without affecting the quality of the aquatic environment, or breaching national or European Commission (EC) standards.

However there may be occasions when planning permission is sought prior to discharge consent being granted. NAP does not make any reference to the potential for discharges from zoned development sites into rivers associated with the European Sites to have adverse impacts on water quality and subsequently on the integrity of hydrologically connected European Sites.

### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from the NAP area have the potential to lead to eutrophication and soil acidification.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats,



the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 28km from the European site it is unlikely to have any significant adverse effects. Whilst there are no specific proposals for industry in the Plan within 15km of the SPA/Ramsar that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

Every year thousands of Whooper Swan (*Cygnus cygnus*) from Iceland migrate to spend the winter in Northern Ireland; in most cases these migration routes follow river valley corridors or the Northern Ireland coastline to reach important wetland sites and other habitats. The shores of Lough Neagh and Lough Beg are internationally important sites for migrating birds in Northern Ireland over winter. Information from The Wetland Bird Survey 2010/11 showed Lough Neagh and Lough Beg is the preferred location for an average of 1,584 Whooper Swans migrating from Iceland to winter in Britain and Ireland each year (Holt et al. 2012). Whooper Swans form part of the SPA selection features for the European site.

The swans are known to move in and out of the SPA site and may utilise areas within the NAP for foraging, roosting and migration. In order to maintain their required nutritional intake, Whooper Swans generally spend as much of the day as possible in foraging. They make regular daily movements between roosting and foraging areas and have been known to fly up to 30km from their roosts in order to reach attractive foraging grounds elsewhere. Whooper Swans in Ireland primarily use arable and improved agricultural grassland of which there is no shortage in the NAP area and swan numbers have been increasing both nationally and locally in recent years. The Improved grassland, arable or horticultural lands that may be used for feeding by Whooper Swans and Bewick Swans are not sensitive to acidification or eutrophication (APIS 2014). The SPA is currently in favourable status for the Whooper Swan feature.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: '*a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*' (<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>)

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total

Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Lough Neagh and Lough Beg SPA and Ramsar	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Common Tern <i>Sterna hirundo</i> associated habitat	**	/	/
Supralittoral sediment	SS	/	/
Standing open water.			
Bewick's Swan <i>Cygnus columbianus bewickii</i> ; Whooper Swan <i>Cygnus Cygnus</i> ; Golden Plover <i>Pluvialis apricaria</i> ; Great Crested Grebe <i>Podiceps cristatus</i> Pochard <i>Aythya ferina</i> ; Greater scaup <i>Aythya marila marila</i> ; Black headed Gull <i>Larus ridibundus</i> ; Tufted Duck <i>Aythya fuligula</i> ; Goldeneye <i>Bucephala clangula</i> ; species assemblages associated habitats			
improved grassland	/	/	/
arable / horticultural	/	/	/
Standing open water / canals	SS	SS	SS
littoral sediment	SS	/	/

The table shows that the deposition levels at Lough Neagh and Lough Beg are currently exceeding critical nitrogen levels for littoral habitats utilized by Common Tern. Nitrogen nutrient enrichment can increase tall grasses in nesting habitat. There is no field or research evidence that suggests that the other bird species in Lough Neagh and Lough Beg SPA/ Ramsar are particularly sensitive to, or at risk from, acidification or eutrophication caused by aerial depositions from the NAP area, however impacts on the habitats utilised by these sites have to be considered.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

### Integrity of Site Checklist

Integrity of site checklist	
<b>Does the project or plan have the potential to:</b>	<b>Yes/No</b>

<ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p>No No Yes Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes Yes Yes No No Yes Yes No No Yes</p>

### **Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Lough Neagh and Lough Beg SPA and Ramsar.

Due to in combination effects from other district council areas aerial deposition from sources in the NAP area may have the potential to be a contributing factor to the overall deposition levels at Lough Neagh and Lough Beg SPA / Ramsar. Therefore mitigation measures will be requires for the effects of aerial pollution and water quality. See section **4.0 Mitigation Measures**.

### **3.10 Appropriate Assessment for Breen Wood SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Breen Wood SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### **3. Economic Development**

Having considered that the Plan is not directly connected with, or necessary to the management of the site, an Appropriate Assessment has been undertaken of the implications of the Plan's implementation on the site's conservation objectives. The site is located entirely within the NAP plan boundary and is linked to the NAP by the potential for aerial pollution.

Breen Wood is a semi-natural, acid woodland dominated by mature Oak *Quercus* spp. and Downy Birch *Betula pubescens*. The Breen Wood SAC is located entirely within the NAP Plan area; the site extends for just over one and a half kilometres along the lower northern slopes of Bohilbreaga and includes all the Oak woodland and an area of adjacent wet heath located above the western third of the wood. The boundary has been drawn to include best examples of both Oak and Bog woodland in addition to other semi-natural habitats that form part of the natural transition, such as heath. Map 14 (Appendix 3) shows the SAC boundary for Breen Wood.

In addition to its botanical interest, Breen Wood provides an important habitat for birds and other animals. Due to its age and undisturbed nature, the woodland supports an exceptionally rich invertebrate community, which includes a number of notable species.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Breen Wood arising from development activities in the Northern Area Plan 2016, Antrim Area Plan 2001, and Larne Area Plan 2010.

#### **Conservation Objectives and implications for each qualifying interest**

The SAC selection features for Breen Wood are; Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles and Bog Woodland. The conservation objectives for the European site are to maintain in favourable condition and enhance each selection feature (See appendix 1). The conservation objectives for the site note that it could potentially be damaged by grazing, poaching, Tree barking and browsing, woodland clearance, deadwood removal and changes in surrounding land use.

In the condition assessment carried out in 2010 the site was recorded as being in unfavourable but recovering condition. Although Breen Oakwood did not fail on any of the attributes assessed in 2010 the Oakwood is still assumed to be in an unfavourable recovering condition as it is unlikely that vegetation structure will have matured in 6 years. The Wet woodland did not fail on any attributes in 2010 however the number of mature trees, over-mature trees and epiphytes and climbers were not assessed in 2010. Therefore the Wet woodland is still considered to be in unfavourable recovering condition as it will take many years for the woodland structure to mature.

### ***Policy Grouping 3 - Economic Development***

Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to lead to eutrophication and soil acidification. Nitrogen deposition is not believed to have a direct, major effect on tree growth in the UK. Surveys have shown no evidence of widespread damage from air pollution to forest trees, however its indirect effects are many and varied (UKreate 2010b). Woodlands are complex ecosystems, comprising various compartments with different sensitivities to N, the key component are the trees, but in many woodlands there is an under storey of woody shrubs, and grasses and below this lower plants carpeting the forest floor (APIS 2014).

Woodlands can be indirectly affected by Nitrogen deposition through eutrophication and acidification, those surrounded by agricultural land and roads are at greater risk from invading plant species leading to changes in composition of ground flora, due to the greater availability of a seed source for such plants. Woodlands near intensive livestock units are particularly at risk from ammonia deposition, especially those growing on acid soils, which can be toxic to trees and ground flora (Krupa 2003).

Aerial pollution has not been recorded as having an adverse effect on the selection features of the European site in the 2010 condition assessment or having an influence on the favorable status of the site. Adverse effects have largely been attributed to management of the site which is currently in private ownership, this area of the wood has been extensively grazed for many years and as a consequence, the ground flora is extremely impoverished, dominated by non-woodland grass species. However this is no indication of the condition at the present time as this area was not accessed in 2010 due to landowner issues.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European

site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealy et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning **BYI 03** has been designated for proposed economic development that includes both general and more specialised industry in the key site requirements. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 17 km from the European site it is unlikely to have any significant adverse effects due to distance from the site.

Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site. To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Breen Wood SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	**	*	*
Bog Woodland	**	**	*

The table indicates nitrogen deposition levels have exceeded the critical limits for one Breen Wood SAC selection feature. The main source of potentially damaging aerial deposition onto this SAC has been attributed to livestock production sources for nitrogen and imported emissions for sulphur (APIS 2014). However NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of

developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

### Integrity of site checklist

<b>Integrity of site checklist</b>	
<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes</p> <p>No</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>

### Appropriate Assessment Conclusion and Recommendations

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Breen Wood SAC therefore mitigation measures are required for the effects of aerial pollution. See section **4.0 Mitigation Measures**.

### **3.11 Appropriate Assessment for Bann Estuary SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Bann Estuary SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Policy Topics could adversely affect the integrity of the site:

1. Settlement Development Limits
2. Housing
3. Economic Development
6. Tourism

Bann Estuary incorporates a series of sand dune systems which together with the lowest section of the River Bann are part of the same physiological unit that has evolved over the last 6,000 years. Centred on the mouth of the River Bann, the site is dominated by the major beach and dune system at Portstewart, with smaller dunes at Grangemore and Castlerock, the latter also has a beach. The site is of earth science importance with contemporary coastal processes and associated dune forms, together with features important to understanding post-glacial sea-level history. Apart from the dune habitats, the site hosts significant saltmarsh, wet grassland and fen communities. Map 15 (Appendix 3) displays the boundary of Bann Estuary SAC.

Bann Estuary SAC is situated entirely within the NAP and is therefore directly linked to it.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Bann Estuary and combination effects from increased numbers of people and vehicles visiting the site from within the NAP and other district council areas.

#### **Conservation Objectives and implications for each qualifying interest**

The SAC selection features for the site are Atlantic salt meadows (*Glaucopuccinellietalia maritimae*), Embryonic shifting dunes, Fixed dunes with herbaceous vegetation ("grey dunes") and shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). The conservation objectives for the site are to maintain each feature in favourable condition.



Threats to the selection features of the site include human recreational impact, golf course development, Sea Buckthorn, beach and dune sand removal, channel dredging programme and boating disturbance.

Three out of four SAC selection features were in unfavourable condition when the 2012 condition assessment was carried out. Bann Estuary **Salt marsh** is favourable recovered; Bann Estuary **Embryo Dune** is unfavourable having failed on primary attribute 'extent of embryo dune feature'. Bann Estuary **White Dune** is unfavourable having failed primary attribute on 'presence of Sea Buckthorn'. Bann Estuary **Grey Dune** is unfavourable recovering having failed the primary attributes presence of community character species and % cover of scrub Bramble Bracken Gorse Sea Buckthorn. Having failed secondary attribute % herb cover, % cover of litter and having failed secondary attribute vegetation height.

The condition assessment highlighted that in particular scrub encroachment, lack of grazing and recreational activities were the main threats to the selection features of the site at present. Lack of grazing results in an increase in leaf litter and tends to favour vigorous, more robust species at the expense of the less competitive species that are associated with more species-rich swards. Over time, this trend generally leads to scrub encroachment and ultimately, conversion to scrub/woodland.

Bann Estuary **Saltmarsh** is favourable in 2013 having recovered from unfavourable in 2006. This is largely as a result of the reintroduction of grazing within the National trust areas reducing sward height. The maintenance of low intensity grazing should be a priority with this having had a positive result on the feature so far.

### ***Policy Grouping 1-Settlement & Policy Grouping 2-Housing***

Development activities associated with NAP may have an adverse effect on the water quality of Bann Estuary SAC from emissions upstream. The settlement development limits of Castlerock and Portstewart are directly adjacent to the SAC boundary for Bann Estuary.

The Policy Groupings above may result in discharge (sewerage and associated run-off) from associated new development where there may be insufficient or no WWTW Design Capacity. This could impact adversely on water quality, either alone or cumulatively with discharge from outside the NAP plan area or in combination with other factors such as possible pollution from industry or agriculture.

The settlements of Castlerock and Portstewart are directly adjacent to Bann Estuary SAC. Within these settlements ***Policy Grouping 2-Housing*** has the potential to create new build and is likely to have associated sewerage discharge which could impact on water quality, where there may be insufficient or no WWTW Design Capacity.

The Plan has zoned a number of development opportunity sites within Coleraine town centre along the banks of the River Bann. Policy zoning, these zonings have the potential to create new build and are likely to have associated sewerage discharge which could impact on water quality.

NAP has designated 4 housing zonings **CKH 08, CKH 09, CKH 10, CKH 11**, within the settlement development limits of Castlerock and one zoning of an area of opportunity for apartments **CKA 01**. Castlerock is serviced by North Coast WWTW which in 2014 had additional capacity available and no network issues. NAP has designated 22 housing zonings **PTH 28-49** in Portstewart and one area of opportunity for apartments **PTA 01**. Portstewart is serviced by North Coast WWTW which in 2014 had additional capacity available and no network issues (see appendix 5).

There is an existing regulatory regime in place that should control discharges associated with any proposals resulting from the implementation of NAP. NIEA are responsible under the Water (NI) Order 1999 for preventing or minimizing the effects of pollution entering our waterways and to manage the risk of a polluting discharge from occurring. There are currently measures in place to ensure that proposals associated with the rivers meet legal requirements associated with: The Drinking Water Directives (80/778/EEC and 98/83/EC); the Major Accidents Directive (96/82/EC); the Environmental Impact Assessment Directive (85/337/EEC); the Sewage Sludge Directive (86/278/EEC); The Urban Waste Water Treatment Directive (91/271/EEC); the Plant Protection Products Directive (91/414/EEC) the Nitrates Directive (91/676/EEC) and the Integrated Pollution Prevention and Control Directive. In addition to this any discharge of trade, sewage effluent or any other potential pollution (including effluent from any commercial, industrial or domestic premises or site drainage) to any waterway or any water contained in underground strata requires consent from the Department of the Environment under the Water (Northern Ireland) Order 1999 (Consent for certain other discharges are also required under the Water and Sewage Service (NI) Order 1973 as amended). Such consents can include conditions outlining the quantity and quality of the discharges and are drawn up to ensure that the waste can be absorbed by the receiving waterway without affecting the quality of the aquatic environment, or breaching national or European Commission (EC) standards.

However there may be occasions when planning permission is sought prior to discharge consent being granted. NAP does not make any reference to the potential for discharges from zoned development sites into rivers associated with the European Sites to have adverse impacts on water quality and subsequently on the integrity of hydrologically connected European Sites.

### ***Policy Grouping 3-Economic Development***

Bann Estuary SAC selection features are vulnerable to aerial pollution from development activities within the NAP. There is potential for polluting aerial deposition from industrial emissions within the water catchment area of the Bann Estuary and subsequent run-off impacting on water quality and feature habitats.

The nearest economic development zoning within the plan is located approximately 0.5km from Bann Estuary SAC boundary zoning **CEI 15**, it is located within the Coleraine settlement development limit. This zoning is an extension of the developing science park with the university campus; it will be restricted to information technology and biotech laboratories and other enterprises appropriate to a science park development. As such it should not have an adverse effect on the selection features of the Bann Estuary SAC.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealy et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealy et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed economic development that includes both general and more specialised industry within the key site requirements. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 16km from the European site; it is therefore unlikely to have any significant adverse effects due to distance from the site.

Although it is widely acknowledged that aerial emissions have the potential to damage sensitive plant communities, to-date there has been no specific indication that atmospheric deposition from the NAP area is a threat to Ban Estuary SAC. The main threats appear to be threats associated with scrub or bracken encroachment, grazing regimes and recreational activity.

Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site. To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Bann Estuary SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011

Fixed dunes with herbaceous vegetation (grey dunes)	**		*	*
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes).	**		/	/
Embryonic shifting dunes	**		/	/
Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> )	*		/	/

The table indicates that a number of feature habitats have exceeded the critical loads for nitrogen deposition; the main source of nitrogen deposition into the site is attributed to livestock production and imported emissions (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

***Policy Grouping 6-Tourism***

Bann estuary SAC is sensitive to tourism development pressures and human recreational activities such as vehicular, boating and expanding path networks in close proximity to and within the SAC. These activities may cause bank erosion, destabilising of dunes, disturbance and mortality of bird populations. Tourist pressures, including vehicle access to Portstewart beach, have locally increased dune erosion and beach compaction (JNCC 2011).

There are no specific zonings relation to tourism within or associated with the Bann Estuary SAC in the Plan.

**Integrity of site checklist**

Integrity of site checklist	
<b><i>Does the project or plan have the potential to:</i></b>	
• Cause delays in progress towards achieving the conservation objectives of the site?	Yes
• Interrupt progress towards achieving the conservation objectives of the site?	Yes
	Yes

<ul style="list-style-type: none"> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p>Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes</p> <p>No</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>No</p>

### **Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Bann Estuary SAC therefore mitigation measures are required for the effects of aerial pollution and water quality. See section **4.0 Mitigation Measures**.

### 3.12 Appropriate Assessment for Binevenagh SAC

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Binevenagh SAC. Therefore the ‘precautionary principle’ must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### 3. Economic Development

NAP has not zoned any land within Binevenagh SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Binevenagh is an important outcrop of basalt, having contributed to a fuller understanding of development of the Antrim Lava Group as a whole. The cliffs at Binevenagh have a unique assemblage of arctic alpine plants and bryophytes, including Mountain Avens *Dryas octopetala* and Purple Saxifrage *Saxifraga oppositifolia*. The grasslands below the cliff are typically quite acid and are nationally important for their fungi, particularly waxcaps (*Hygrocybe*). Locally there is slightly calcareous dry grassland, which is rich in sedges and herbs.

The SAC boundary has been drawn to include all extents of cliff supporting arctic alpine species. This forms the basis for including the small length of cliff within Forest Service ownership. Map 16 (Appendix 3) shows the SAC boundary for Binevenagh SAC.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

There could potentially be cumulative aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds on Binevenagh SAC arising from agricultural, employment or industrial development zonings in the Northern Area Plan 2016, Magherafelt Area Plan 2015 and the Limivady Area Plan 1984-1999.

#### **Conservation Objectives and implications for each qualifying interest**

The SAC selection features for Binevenagh are calcareous rocky slopes with chasmophytic vegetation, Species-rich *Nardus* grassland, on siliceous substrates in

mountain areas (and submountain areas in continental Europe), Calcareous rocky slopes with chasmophytic vegetation and Calcareous and calcshist scree of the montane to alpine levels (*Thlaspietea rotundifolii*). The conservation objectives for Binevenagh SAC state that the site could potentially be damaged by application of fertiliser, addition of manure/slurry, grazing, changes in surrounding land use and recreational activities on the cliff. The 2010 condition assessment carried out by NIEA recorded the site as being in Favourable Condition for all features.

### ***Policy Grouping 3-Economic Development***

Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to lead to eutrophication and soil acidification.

There is a potential for polluting aerial deposition from agricultural and industrial emissions on the vegetative community of Binevenagh SAC. Research indicates that the application of any inorganic fertiliser to grassland leads to a reduction in species diversity and loss of important grassland fungi through nutrient enrichment. The grasslands at Binevenagh are dependent upon traditional grazing with no use of agrochemicals (JNCC 2014). Alpine and subalpine habitats are sensitive to acidic inputs and nitrogen deposition. Montane habitats are adapted to low levels of nitrogen availability. Exceedence of the critical levels for acidity or nitrogen deposition at Binevenagh SAC could lead to changes in species composition and the loss of bryophytes and lichen.

The closest economic development zoning is located approximately 3.8km away at the existing Aghanloo industrial estate. Industrial zoning LYI 07 zones 61 hectares of land within the industrial estate for new economic development opportunities and the redevelopment of existing buildings. The majority of the site is occupied retail and retail service based industries and would therefore have no adverse impact on the SAC selection features of the European site.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011).

Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development

zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 17 km from the European site it is unlikely to have any adverse effects.

Whilst there are no specific proposals for economic development in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009–2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Binevenagh SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe)	*	*	*
Calcareous rocky slopes with chasmophytic vegetation	**	**	*
Calcareous and calchist screes of the montane to alpine levels ( <i>Thlaspietea rotundifolii</i> )	*	**	*

The results in the table indicate atmospheric deposition from the NAP area is a threat to Binevenagh SAC. A number of site selection features for Binevenagh SAC have exceeded the critical load for nitrogen deposition and acidity levels.



The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

**Integrity of site checklist**

<b>Integrity of site checklist</b>	
<b><i>Does the project or plan have the potential to:</i></b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<b><i>Other indicators: Does the project or plan have the potential to:</i></b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p>Yes</p> <p>No</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>No</p>

### **Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Binevenagh SAC therefore mitigation measures are required for the effects of aerial pollution. See section **4.0 Mitigation Measures**.

### **3.13 Appropriate Assessment for Garron Plateau SAC and Ramsar**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Garron Plateau SAC and Ramsar. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### **3. Economic Development**

NAP has not zoned any land within Garron Plateau SAC and Ramsar for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Garron Plateau SAC and Ramsar site lies partly within the NAP plan area and is connected to the plan by the potential for aerial pollution.

The Garron Plateau is a basaltic headland area undulating to a maximum height of 440 m but generally lying between 330 and 380 m with scarps to Glenariff Glen and the Antrim coast and a gentler descent inland. The blanket bog is the largest intact bog in Northern Ireland with a number of notable features, such as well developed hummock and lawn complexes, pool complexes and eroding hagg complexes, in addition to transition mires and quaking bogs occur. Both wet heath and dry heath communities are important components of the Garron Plateau upland area. Across many of the slopes, alkaline fens occur in localised mineral enriched flushes. Many base-poor lakes occur on the plateau, some with characteristically nutrient-poor waters conforming to EU 'Habitats Directive' Annex I types.

The boundary was drawn to include all areas of intact peatland, which includes all small areas of damaged peatland contained within the greater expanse of intact peatland. Map 17(Appendix 3) shows the SAC and Ramsar boundary for the site. The site qualifies as a Ramsar site because it is a good representative example of a wetland complex including blanket bog base-rich flushes and upland lakes. The Ramsar site boundary is entirely coincident the Garron Plateau Special Area of Conservation

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Garron Plateau arising from

development activities in the Northern Area Plan 2016, Antrim Area Plan 2001, Ballymena Area Plan 2001, and Larne Area Plan 2010.

### **Conservation Objectives and implications for each qualifying interest**

The SAC selection features for Garron Plateau are, active blanket bog, alkaline Fen (upland), marsh saxifrage *Saxifraga hirculus*, oligotrophic to mesotrophic upland isoetid lake, Northern Atlantic wet heath with *Erica tetralix*, naturally dystrophic lakes and pools and transition mires and quaking bogs.

The conservation objectives for Garron Plateau SAC and Ramsar are to maintain each feature in favourable condition. The NIEA conservation objectives state that the site could potentially be damaged by application of fertiliser, peat cutting, drainage, afforestation and changes in surrounding land use. Activities occurring outside the site (e.g. agricultural intensification, drainage works, and development) may be detrimental to the site through remote effects.

There has been past consideration of the establishment of a further artificial reservoir on the Garron Plateau in the Lower Inver catchment, this could have an adverse effect on the SAC habitat features.

The NIEA 2010 condition assessment for the site records 3 out of 5 SAC features assessed were in unfavourable condition, mainly due to over grazing and species cover and diversity.

### ***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Bealey et al.(2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011).

Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may

have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 22km from the European site it is unlikely to have any significant adverse effects.

Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Critical Loads are defined as: ‘ *a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*’

(<http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>)

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009–2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Garron Plateau SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Active Blanket Bog	**	**	*
Alkaline Fen (upland)	*	/	/
Marsh Saxifrage <i>Saxifraga hirculus</i>	**	**	*
Oligotrophic to mesotrophic upland isoetid	**	/	/

lake			
Northern Atlantic wet heath with <i>Erica tetralix</i>	**	**	*
Naturally dystrophic lakes and pools and transition mires and quaking bogs.	**	/	/

The results in the table indicate atmospheric deposition from the NAP area is a threat to selection features for Garron Plateau SAC and Ramsar. A number of site selection features for Garron Plateau have exceeded the critical load for nitrogen deposition and acidity levels.

The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

### Integrity of site checklist

Integrity of site checklist	
<p><b>Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p><b>Other indicators: Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> </ul>	<p><b>Yes/No</b></p> <p>Yes</p>

<ul style="list-style-type: none"> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Reduce the area of key habitats?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Reduce the population of key species?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Change the balance between key species?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Reduce diversity of the site?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Result in fragmentation?</li> </ul>	No
<ul style="list-style-type: none"> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	No

**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Garron Plateau SAC therefore mitigation measures are required for the effects of aerial pollution. See section **4.0 Mitigation Measures**.

### **3.14 Appropriate Assessment for River Faughan and Tributaries SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of River Faughan and Tributaries SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### **3. Economic Development**

NAP has not zoned any land within River Faughan and Tributaries SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

The River Faughan and Tributaries SAC is located outside the NAP but is situated within 1.6km of the nearest Plan Economic Development zoning and flows into Lough Foyle SPA of which the majority is located within the NAP. It is therefore linked to the plan through the potential for aerial pollution and hydrological pathways.

The River Faughan and Tributaries SAC includes the River Faughan and its tributaries the Burntollet River, Bonds Glen and the Glenrandal River (and its tributary the Inver River). In total, the area encompasses approximately 60km of watercourse and is notable for the physical diversity and naturalness of the banks and channels, especially in the upper reaches, and the richness and naturalness of its plant and animal communities, in particular the population of Atlantic Salmon *Salmo salar*, which is of international importance and the otter *Lutra lutra*. Map 18 (Appendix 3) displays the SAC boundary.

Semi-natural woodland is fragmented throughout the site with the main blocks found at Ness and Ervey Woods both Country Parks on the Burntollet River and Bonds Glen Wood on the Bonds Glen. Oak woodland blocks of mixed canopy such as Sessile Oak *Quercus petraea* Downy birch *Betula pubescens*, Hazel *Corylus avellana* and Ash *Fraxinus excelsior* occur occasionally along the length of the river. This marginal woodland is important as habitat for invertebrates, birds, fish and mammals and also helps to stabilise the river bank.

The 2010 NIEA condition assessment feature species Otter *Lutra lutra* is recorded in favourable condition, however the overall condition of the six river bodies of the River Faughan and tributaries was found to be in unfavourable condition.



**In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Banagher Glen arising from development activities in the Northern Area Plan 2016 Strabane Area Plan 2001, Derry Area Plan 2011 and Magherafelt Area Plan 2015.

**Conservation Objectives and implications for each qualifying interest**

The SAC selection features for River Faughan and Tributaries are Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, Annex II species Atlantic Salmon *Salmo salar* Annex II species Otter *Lutra lutra*. The conservation objectives for the site are to maintain each feature in favourable condition.

Water quality is probably the most important factor for the SAC selection features with both point and diffuse sources of pollution potentially damaging. Poor water quality and increased sedimentation can be significant influences on populations of *Salmo salar* and *Lutra lutra*, as well as altering the biological composition of the river system (JNCC 2011).

***Policy Grouping 3 - Economic Development***

Energy production through the combustion of fossil fuels results in the emission of nitrogen oxides (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>) into the atmosphere. Food production also emits pollutants: ammonia (NH<sub>3</sub>) from farm animal units and both ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from intensive fertiliser use. Industrial aerial emissions have the potential to damage old sessile oak woods with *Ilex* and *Blechnum*, a feature of the SAC and water quality, particularly in this case through run-off from surrounding countryside.

Nitrogen deposition is not believed to have a direct, major effect on tree growth in the UK. Surveys have shown no evidence of widespread damage from air pollution to forest trees, however its indirect effects are many and varied (UKcreate 2010b). Woodlands can be indirectly affected by Nitrogen deposition through eutrophication and acidification, those surrounded by agricultural land and roads are at greater risk from invading plant species leading to changes in composition of ground flora, due to the greater availability of a seed source for such plants. Woodlands near intensive livestock units are particularly at risk from ammonia deposition, especially those growing on acid soils, which can be toxic to trees and ground flora (Krupa 2003).

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats,

the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 41km from the European site it will not have any significant adverse effects.

Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

River Faughan and Tributaries SAC selection features	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acid deposition	Sulphur Acid deposition
	2009-2011	2009-2011	2009-2011
Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	**	*	*
Atlantic Salmon <i>Salmo salar</i>	SS	/	/
Otter <i>Lutra lutra</i>	SS	/	/

Habitat site selection features for River Faughan and Tributaries SAC have exceeded the critical load for nitrogen deposition and met acidity critical levels, the other features species are either not sensitive to acidity or have site specific impacts for nitrogen deposition.

The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a

certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

**Integrity of Site Checklist**

<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes Yes Yes Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes  No  No  No Yes Yes Yes No  No Yes</p>

**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of River Faughan and Tributaries SAC

therefore mitigation measures are required for the impacts of aerial pollution. See section **4.0 Mitigation Measures**.

### **3.15 Appropriate Assessment for Sheep Island SPA**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Sheep Island SPA. Therefore the 'precautionary principle' must be applied and significant effects were assumed.

NAP has not zoned any land within Sheep Island SPA for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

The site comprises Sheep Island only. The island is a major dolerite intrusion, one of many along this coast. This hard-wearing rock results in vertical cliffs. The sparse grass vegetation on the island supports the Cormorant breeding colony, the majority of nests occurring along the southern edge. The boundary is coincident with the ASSI boundary. It takes in the entire island. As there is no intensive usage of adjoining sea areas by the Cormorant, these have not been included. Map 19 (Appendix 3) displays the location and SAC boundary for Sheep Island.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Sheep Island arising from development activities in the Northern Area Plan 2016, Antrim Area Plan 2001, Ballymena Area Plan 2001, and Larne Area Plan 2010.

#### **Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The SAC selection feature for Sheep Island SPA is breeding populations of Cormorant *Phalacrocorax carbo*. The conservation objectives for the feature species are; no significant decrease in breeding population against national trend and fledging success.

The Conservation Objectives report highlighted that the site is vulnerable to activities such as recreational boating activity which could lead to disturbance and potential for impact. Other recreational activities could also have adverse effects on the site however the inaccessible nature of the site makes this unlikely, commercial or recreational fishing may have an adverse impact on the feature species due to competition for food, however the impacts are considered to be minimal.

The NIEA condition assessment for the site states that the site is in unfavourable condition, Cormorant numbers have decreased by 50% since SPA designation in 1992 on Sheep Island and the population has continued to decline over the last 5 years of surveying. Given there has been significant increases in other SPA sites in Northern Ireland the population declines on Sheep island are most likely due to site specific factors and likely to be indicative of local habitat issues at Rathlin Island given the shared population declines of other seabirds there (NIEA 2013).

*Species disturbance; habitat destruction or alteration.*

The NAP has not zoned any land policy proposals on Sheep Island SPA, therefore potential adverse affects associated with direct loss and fragmentation of habitats and species are unlikely.

While no adverse threats have been identified, the Cormorant colony present on Sheep Island SPA could be at risk from a potential lack of available food, although a coastal site, this colony feeds primarily on inland rivers and large lakes (JNCC 2006).

### ***Policy Grouping 3 – Economic Development***

Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from economic development zonings within the NAP have the potential to lead to eutrophication and soil acidification.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions.

Sheep Island is located within 15k of an economic development zoning within the Nap however there is no field or research evidence that suggests that Cormorant is sensitive to, or at risk from, acidification or eutrophication caused by aerial depositions

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Sheep Island SPA selection features	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acid deposition	Sulphur Acid deposition
	2009-2011	2009-2011	2009-2011
Cormorant <i>Phalacrocorax carbo</i>	/	/	/

The table indicates that SPA selection features for Sheep Island are not sensitive to the effects of aerial pollution on species broad habitat.

### Integrity of site checklist

Integrity of site checklist	
<p><b>Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>
<p><b>Other indicators: Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>

<ul style="list-style-type: none"><li>• Result in disturbance that could affect population size or density or the balance between key species?</li></ul>	No
<ul style="list-style-type: none"><li>• Result in fragmentation?</li></ul>	No
<ul style="list-style-type: none"><li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li></ul>	No

### **Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Sheep Island SPA. Mitigation measures are therefore not required.

### 3.16 Appropriate Assessment for Lough Foyle SPA and Ramsar

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Lough Foyle SPA and Ramsar. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

1. Settlement
2. Housing
3. Economic Development

NAP has not zoned any land within Lough Foyle SPA and Ramsar for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Lough Foyle is a major sea lough with extensive mud and sand flats exposed at low tide. Though considerably diminished by historical reclamation schemes, notably around Myroe, Ballykelly and Longfield, it hosts the second largest area of inter-tidal habitat in Northern Ireland. The shoreline is engineered except around the Roe Estuary and northwards. Adjoining agricultural land is of importance as high tide roosts and in supporting wintering geese and swans.

A large section of Lough Foyle SPA and Ramsar is located within the NAP and therefore has a direct link to it. NAP is also hydrologically linked to the Lough Foyle via the Lough Foyle catchment area. This includes the River Roe and Tributaries which flows through the NAP and into Lough Foyle.

The boundary of the site includes the inter-tidal habitats within Lough Foyle, taking in all of the Lough Foyle ASSI and the adjoining coastal section of Magilligan SAC north to Magilligan Point. Landward, the site is delimited by coastal defences. Sections of minor river estuaries have been included as they contain natural/semi-natural habitat of importance as bird roosts and feeding areas. The SPA and Ramsar boundaries for the site are identical; Map 20 (Appendix 3) shows the SPA and Ramsar boundary.

The site qualifies as a Ramsar site because it supports a significant assemblage of rare, vulnerable or endangered species or sub-species of plant and animal. A range of notable fish species have been recorded for the Lough Foyle estuary and the lower reaches of some of its tributary rivers. The site also qualifies by regularly supporting internationally important numbers of Whooper swan, Light-bellied Brent Geese and Bar-tailed Godwit.

**In-combination effects from other plans or projects that are likely to have significant effects.**



The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition and hydrological pathways on Lough Foyle SPA and Ramsar site from development activities in the NAP 2016, Strabane Area Plan 2001 and Derry Area Plan 2011.

**Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The principle selection features for Lough Foyle are Light-bellied Brent Goose, Whooper Swan, Bar-tailed Godwit and other over-wintering and migratory waterfowl, roost sites and habitat. See Appendix 1: Conservation Objectives.

The conservation objectives for the SPA and Ramsar site are to maintain each feature in favourable condition. Monitoring is carried out and includes measurements of population numbers and maintenance of the extent and quality of natural and semi-natural habitats and roost or loafing sites that are used by the feature species. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not.

The Natura 2000 data form for Lough Foyle SPA records that the site is vulnerable to changes in surrounding land use, aquaculture, bait digging, wildfowling, system dynamics, water quality, power cables, dredging and commercial boating activity.

Wind energy developments represent a potential threat of collision as feature bird species fly across the NAP area, in particular to swans and geese. The Conservation Objectives Report highlights that there is a need to consider flight lines, as well as feeding and loafing areas. NAP does not include any proposals or policies that would promote the development of wind energy in the NAP area; however proposals for wind energy developments in the NAP may be submitted during the lifetime of the Plan. Such proposals would have to be considered on a case by case basis. Planning policy related to renewable energy developments can be found in PPS18.

Boating activity is not currently considered to have a major impact on the site as commercial shipping is limited to the main channel. No high-speed boats currently operate within the SPA/Ramsar boundary; most boating activity is on the Republic of Ireland side of the lough (NIEA 2013b). Dredging is only an issue in relation to commercial shipping channels. Other issues include disturbance, loss of sediment from the system, remobilisation of contaminated sediment and spoil dumping zones. NAP does not contain any policies or proposals that would increase boating activity within the Plan area.

***Policy Groupings 1 & 2 – Settlement and Housing***

*Species disturbance; habitat destruction or alteration.*

Development proposals or associated policies within, adjacent to, or which are linked to watercourses associated with Lough Foyle could result in habitat destruction, increased disturbance levels or could lead to an alteration to habitats within the SPA/

Ramsar. The NAP plan does not include any policies or proposals that would directly result in the destruction of habitats within Lough Foyle SPA / Ramsar.

Developments associated with the plan area have the potential to impact upon the SPA/Ramsar and surrounding sea areas that are utilized by feature species in relation to disturbance, pollution incidents or competition for food sources caused by the promotion of additional sea traffic. Loss of inter-tidal habitat due to development is a critical issue as this is the feeding zone for the majority (numbers and species) of birds. Any further losses to inter-tidal habitat should be resisted. There are no settlement development limits within or adjacent to the SPA boundary and no additional proposals for development directly adjacent to Lough Foyle.

### *Water Quality*

There are a number of development zones either in close proximity to, or infrastructurally connected to the rivers within the Lough Foyle catchment that have the potential to interact with the SPA in terms of contributing to waste discharges. The Aghanloo industrial estate is located approximately 4km from Lough Foyle SPA and Ramsar but is approximately 200m from the River Roe which flows into the European site.

The settlement development limits for Limivady, Burnfoot, Feeny and Dungiven are directly adjacent to the River Roe European site. Housing and economic development zonings within these settlements may lead to additional built development that may have associated discharges which could impact on water quality, where there may be insufficient or no WWTW Design Capacity.

Limivady is serviced by the large Limivady WWTW which in 2014 had sufficient capacity to accommodate further built development. Dungiven is serviced by Dungiven WWTW which in 2014 also had sufficient capacity to accommodate further built development. Feeny is serviced by Feeny WWTW and in 2014 had capacity to accommodate further built development with some headroom still available and Burnfoot is served by Bonnanaboigh WWTW which in 2014 also had capacity to accommodate further built development with headroom still available. See Appendix 5 WWTW figures.

There is an existing regulatory regime in place that should control discharges associated with any proposals resulting from the implementation of NAP. NIEA are responsible under the Water (NI) Order 1999 for preventing or minimizing the effects of pollution entering our waterways and to manage the risk of a polluting discharge from occurring. There are currently measures in place to ensure that proposals associated with the rivers meet legal requirements associated with: The Drinking Water Directives (80/778/EEC and 98/83/EC); the Major Accidents Directive (96/82/EC); the Environmental Impact Assessment Directive (85/337/EEC); the Sewage Sludge Directive (86/278/EEC); The Urban Waste Water Treatment Directive (91/271/EEC); the Plant Protection Products Directive (91/414/EEC) the Nitrates Directive (91/676/EEC) and the Integrated Pollution Prevention and Control Directive. In addition to this any discharge of trade, sewage effluent or any other potential pollution (including effluent from any commercial, industrial or domestic premises or site drainage) to any waterway or any water contained in underground

strata requires consent from the Department of the Environment under the Water (Northern Ireland) Order 1999 (Consent for certain other discharges are also required under the Water and Sewage Service (NI) Order 1973 as amended). Such consents can include conditions outlining the quantity and quality of the discharges and are drawn up to ensure that the waste can be absorbed by the receiving waterway without affecting the quality of the aquatic environment, or breaching national or European Commission (EC) standards.

However there may be occasions when planning permission is sought prior to discharge consent being granted. NAP does not make any reference to the potential for discharges from zoned development sites into rivers associated with the European Sites to have adverse impacts on water quality and subsequently on the integrity of hydrologically connected European Sites.

### ***Policy Grouping 3 – Economic development***

#### *Water Quality*

Industry within and adjacent to the SPA is light, but a substantial commercial port with freight traffic in addition to commercial fisheries and a booming leisure industry all put pressure on, and make demands of the water quality (AFBI 2014). Water quality within the Foyle catchment is generally good and compliant with E.C. Directives, with only one or two sections of rivers being identified as potentially eutrophic (AFBI 2014).

Chemical and other industries in the Londonderry area may present a threat through build-up of routine discharges or accidental spillage. The major Waste Water Treatment Works for the city of Londonderry discharge to the deep channel outside of Culmore point in Lough Foyle, as do effluents from Du Pont's chemical complex. These inputs have contributed to the presence of faecal contaminants within the estuary, and have potentially contributed to algal blooms in the lough (AFBI 2014).

#### *Aerial Pollution*

Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from economic development zonings within the NAP have the potential to lead to eutrophication and soil acidification.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The Aghanloo Industrial estate is located approximately 4km from the site and contains land zoned for economic development. Certain development proposals within the site could lead to aerial deposition. The site is mainly occupied by retail, or retail service-based industries. Other commercial enterprises within the Aghanloo site include the Tradewinds Centre and the Windyhill Retail Park.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009–2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Lough Foyle SPA and Ramsar selection features	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acid deposition	Sulphur Acid deposition
	2009-2011	2009-2011	2009-2011
Light-bellied brent goose - <i>Branta bernicla hrota</i>	Below critical load	/	/
Waterfowl assemblage - <i>Waterfowl assemblage</i> (Wintering)	SS	SS	SS
Whooper Swan <i>Cygnus cygnus</i>	SS	/	/
Bar-tailed godwit - <i>Limosa lapponica</i>	/	/	/

The table above indicates that site selection features for Lough Foyle SPA and Ramsar are either site specific or not sensitive to the effects of aerial pollution from development in the NAP. Development activities resulting in aerial deposition within the NAP will not adversely affect key species and key habitats or the integrity of Lough Foyle SPA and Ramsar.

### Integrity of site checklist

<b>Integrity of site checklist</b>	
<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>

### **Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Lough Foyle SPA and Ramsar. Mitigation measures are required with regard to water quality. See section **4.0 Mitigation Measures**.

### **3.17 Appropriate Assessment for River Roe and Tributaries SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of River Roe and Tributaries SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

1. Settlement
2. Housing
3. Economic Development

NAP has not zoned any land within River Roe and Tributaries SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

The River Roe and Tributaries SAC and is located entirely within the NAP and therefore has a direct link to it.

The River Roe and Tributaries SAC includes the River Roe and its tributaries the Curly River, the Gelvin River, the Bovevagh River (and its tributary the Altahullion Burn), the Wood Burn, the Owenbeg (and its tributary the Clogherna Burn), the Owenrigh River, the Black Burn (and its tributary the Currawable Burn) and the Owenalena River. In total, the area encompasses approximately 87km of watercourse and is notable for the physical diversity and naturalness of the banks and channels, especially in the upper reaches, and the richness and naturalness of its plant and animal communities.

Much of the SAC has limited adjacent habitat. Therefore, the boundary is frequently restricted to the top of the riverbank. Map 21 (Appendix 3) shows the SAC boundary for River Roe and Tributaries SAC.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition and water quality impacts to hydrological pathways associated with River Roe and Tributaries SAC from development activities in the NAP 2016, Strabane Area Plan 2001, Derry Area Plan 2011 and Magherafelt Area Plan 2015.

### **Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The principle selection features for River Roe and Tributaries are Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation, Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, Otter *Lutra lutra* and Atlantic salmon *Salmo salar*.

The NIEA conservation objects for the site are to maintain and enhance species populations and habitat extent for site selection features

The vulnerability section of the JNCC site selection form records that the site is vulnerable to changes in water quality from point-source pollution from urban and industrial centres and farms and diffuse runoff of fertiliser from commercial conifer plantations and intensively farmed land, poor water quality and increased sedimentation can be significant influences on populations of *Salmo salar* and *Lutra lutra*, as well as altering the biological composition of the river system (JNCC 2011).

The SAC is comprised of 11 Water Framework Directive (WFD) Water bodies monitored from by 10 sample points. The NIEA 2008-2011 condition assessment found River Roe and Tributaries to be in unfavourable condition overall.

#### ***Policy Groupings 1 & 2 – Settlement and Housing***

Rivers are particularly vulnerable to the effects of drainage, alterations to the water table, water-borne pollution and other developments within catchment areas. There are a number of development zones either in close proximity to, or infrastructurally connected to the River Roe and Tributaries that have the potential to interact with the SAC in terms of contributing to waste discharges. The settlement development limits for Limivady, Burnfoot and Dungiven are directly adjacent to River Roe and Tributaries SAC boundary. Site selection features for the River Roe are afforded protection from certain development next to the river through **Policy ENV5 ‘Development Adjacent to a Main River’**. This policy provides criteria that must be met for any development taking place adjacent to a main river.

Housing and economic development zonings within Limivady, Dungiven, Burnfoot and Feeny may led to additional built development that is likely to have associated sewerage discharge which could impact on water quality, where there may be insufficient or no WWTW Design Capacity

Limivady is serviced by the large Limivady WWTW which in 2014 had sufficient capacity to accommodate further built development. Dungiven is serviced by Dungiven WWTW which in 2014 also had sufficient capacity to accommodate further built development. Feeny is serviced by Feeny WWTW and in 2014 had capacity to accommodate further built development with some headroom still available and Burnfoot is served by Bonnanaboigh WWTW which in 2014 also had capacity to accommodate further built development with headroom still available. See Appendix 5 WWTW figures.

There is an existing regulatory regime in place that should control discharges associated with any proposals resulting from the implementation of NAP. NIEA are responsible under the Water (NI) Order 1999 for preventing or minimizing the effects of pollution entering our waterways and to manage the risk of a polluting discharge from occurring. There are currently measures in place to ensure that proposals associated with the rivers meet legal requirements associated with: The Drinking Water Directives (80/778/EEC and 98/83/EC); the Major Accidents Directive (96/82/EC); the Environmental Impact Assessment Directive (85/337/EEC); the Sewage Sludge Directive (86/278/EEC); The Urban Waste Water Treatment Directive (91/271/EEC); the Plant Protection Products Directive (91/414/EEC) the Nitrates Directive (91/676/EEC) and the Integrated Pollution Prevention and Control Directive. In addition to this any discharge of trade, sewage effluent or any other potential pollution (including effluent from any commercial, industrial or domestic premises or site drainage) to any waterway or any water contained in underground strata requires consent from the Department of the Environment under the Water (Northern Ireland) Order 1999 (Consent for certain other discharges are also required under the Water and Sewage Service (NI) Order 1973 as amended). Such consents can include conditions outlining the quantity and quality of the discharges and are drawn up to ensure that the waste can be absorbed by the receiving waterway without affecting the quality of the aquatic environment, or breaching national or European Commission (EC) standards.

However there may be occasions when planning permission is sought prior to discharge consent being granted. NAP does not make any reference to the potential for discharges from zoned development sites into rivers associated with the European Sites to have adverse impacts on water quality and subsequently on the integrity of hydrologically connected European Sites.

### ***Policy Grouping 3 – Economic Development***

Aerial emissions have the potential to damage old sessile oak woods with *Ilex* and *Blechnum*, a feature of the SAC and water quality, particularly in this case through run-off from surrounding countryside. Surveys have shown no evidence of widespread damage from air pollution to forest trees, however its indirect effects are many and varied (UKcreate 2010b). Woodlands can be indirectly affected by Nitrogen deposition through eutrophication and acidification, those surrounded by agricultural land and roads are at greater risk from invading plant species leading to changes in composition of ground flora, due to the greater availability of a seed source for such plants. Woodlands near intensive livestock units are particularly at risk from ammonia deposition, especially those growing on acid soils, which can be toxic to trees and ground flora (Krupa 2003).

The Aghanloo industrial estate is located approximately 200m from the River Roe at its nearest point. The site is currently made up of retail and retail serviced based units, with a further 61 hectares of land zoned for economic development subject to compliance with the key site requirements.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial



depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

River Roe and Tributaries SAC selection feature	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Old Sessile Oak Woods with Ilex and Blechnum in the British Isles	**	**	*
Atlantic Salmon- <i>Salmo salar</i>	SS	/	/
Otter- <i>Lutra lutra</i>	SS	/	/
Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation,	/	/	/

Habitat site selection features for River Roe and Tributaries SAC have exceeded the critical load for nitrogen deposition and acidity critical levels, the other features

species are either not sensitive to acidity or have site specific impacts for nitrogen deposition.

The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

### Integrity of Site Checklist

<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>

<ul style="list-style-type: none"><li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li></ul>	Yes
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### **Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of River Roe and Tributaries SAC therefore mitigation measures are required for the impacts of aerial pollution and water quality. See section **4.0 Mitigation Measures**.

### **3.18 Appropriate Assessment for Magilligan SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Magilligan. Therefore the ‘precautionary principle’ must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### **4. Economic Development**

NAP has not zoned any land within Magilligan SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Magilligan lies in the extreme north-west corner of County Londonderry. The site hosts the area of intact dune principally from Magilligan Point to Benone, as well as dune elements along the Lough Foyle shore. The main habitats are the series of dune grasslands together with dune slacks. These habitats also support notable populations of the marsh-fritillary butterfly and petalwort. The site is of international importance for earth science with complex contemporary coastal processes, especially in the region of Magilligan Point, and associated dune forms, together with features important to understanding post-glacial sea-level history.

The boundary has been drawn to include all areas of intact dune supporting semi-natural habitat together with associated inter-tidal areas. Eastwards, the boundary includes the entire beach/dune area to Downhill, to ensure the active coastal process unit is treated as a single managed site. Map 22 (Appendix 3) displays the SAC boundary.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition from the Northern Area Plan 2016, Strabane Area Plan 2001 and Derry Area Plan 2011.

### **Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The principle selection features for Magilligan SAC are, dunes with *Salix repens ssp. Argentea (Salicion arenariae)*, embryonic shifting dunes, fixed dunes with herbaceous vegetation (grey dunes), humid dune slacks and shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). Annex 2 selection species include Marsh Fritillary Butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia*, Otter *Lutra lutra* and Petalwort *Petalophyllum ralfsii*.

The conservation objectives for the site are to maintain and enhance habitat extent and species diversity for each selection feature, see Appendix 1: Conservation Objectives. The NIEA conservation objectives form states that the site could potentially be damaged by grazing, recreation, changes to surrounding landuse, military use and disruption to the natural sediment regime. Magilligan is a highly dynamic system that needs sensitive management. The beach/dune system should be viewed as being sedimentologically closed, so beach sand removal is not sustainable and will exacerbate the lowering of beach profiles and dune front erosion (more applicable to Downhill and Benone). Similarly, construction on the shore, including rock armouring along the Point Road and other coastal defence works are likely to have “knock-on” impacts throughout the system, potentially leading to coastal erosion and loss of intertidal and adjacent coastal habitats (NIEA 2004).

#### *Marsh Fritillary butterfly*

The Marsh Fritillary butterfly *Euphydryas aurinia* is found in a range of habitats in which its larval food plant, devil’s-bit scabious *Succisa pratensis*, occurs. Sheep selectively graze devil’s-bit scabious and are therefore detrimental to Marsh Fritillary populations, except at very low stocking rates.

In the 2006 condition assessment report Magilligan SAC is considered to be unfavourable for the Marsh Fritillary Butterfly. Although the larval food-plant *Succisa pratensis* occurs widely around the site in a variety of different growth-forms, the main habitat features are unfavourable (i.e. dune grassland) and management of the site needs to be changed (i.e. grazing needs to be introduced more widely than at present) (NIEA 2006).

#### *Petalwort Petalophyllum ralfsii*

According to the 2007 condition assessment report Petalwort *Petalophyllum ralfsii* is a pale green liverwort that grows in open, damp, calcareous dune slacks, often on low hummocks rather than on the very wet ground, on compacted sandy/muddy bryophyte-rich turf. Magilligan is the only known location for Petalwort *Petalophyllum ralfsii* in Northern Ireland and Magilligan is considered to be unfavourable for the species.

### **Policy Grouping 3 – Economic Development**

#### *Marsh Fritillary Butterfly*

The vulnerability section of the European data form does not list aerial pollution as a major threat to Magilligan SAC however aerial pollution and associated atmospheric deposition arising from the NAP area has the potential to lead to increased eutrophication and soil acidification in certain habitats.

Air pollution may have a potential adverse impact on some of the broad habitats within Magilligan SAC including habitats associated with the Marsh fritillary butterfly. However APIS notes that adverse impacts should be considered on a site specific basis as there is insufficient knowledge to make a judgement on the impacts to Marsh Fritillary Butterfly from aerial pollution on species broad habitat (APIS 2014).

### *Habitats*

Aerial deposition from sources in the NAP may have the potential to damage sensitive plant communities within Magilligan SAC. Sand dune habitats are one of the most natural remaining vegetation types in the UK. Pressures threatening their existence include: sea-level rise, climate change, agricultural improvement, recreational use, lack of management, over-stabilisation and Nitrogen deposition. They are generally infertile and thus sensitive to Nitrogen deposition. The greatest impact from Nitrogen is likely to be on early succession communities which include many of the sand dune rare species (APIS 2014). The dune and grassland habitats in Magilligan SAC were unfavourable in the 2007 condition assessment.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total

Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Magilligan SAC selection features	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Fixed dunes with herbaceous vegetation (grey dunes).	**	**	*
Embryonic shifting dunes.	*	/	/
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes).	*	/	/
Dunes with <i>Salix repens</i> spp. <i>Argentea</i> ( <i>Salicion arenariae</i> ).	*	**	*
Marsh fritillary butterfly, <i>Euphydryas aurinia</i>	SS	SS	SS
Petalwort - <i>Petalophyllum ralfsii</i>			
Humid dune slacks	*	**	*

A number of habitat features have exceeded critical loads for nitrogen deposition and acidity levels.

The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

### Integrity of Site Checklist

<b><i>Does the project or plan have the potential to:</i></b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p>Yes</p> <p>No</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>No</p> <p>No</p>

### Appropriate Assessment Conclusion and Recommendations

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Magilligan SAC therefore mitigation measures are required for the impacts of aerial pollution. See section **4.0 Mitigation Measures**.



### **3.19 Appropriate Assessment for North Antrim Coast SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of North Antrim Coast SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed.

#### **3. Economic Development**

NAP has not zoned any land within North Antrim Coast SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

The North Antrim Coast SAC is located entirely within the NAP and is therefore directly linked to it. It is also linked to the NAP by the potential for aerial pollution. The site is centred on the Giant's Causeway but extends from near Runkerry Strand in the west to White Park Bay in the east. The dominant features are the high basalt cliffs and associated habitat that extend from the west of the site to beyond Dunseverick Castle and the high chalk cliffs that back White Park Bay. The latter supports a range of dune and grassland communities, while a variety of grasslands are found along the active cliff series and areas of abandoned sea-stacks and cliffs.

Much of the inland boundary follows the first fence line to the rear of the cliff top, only extending further inland where better quality heath, grassland and peatland communities warrant inclusion. East of Dunseverick, the boundary is often more restrictive, including better quality habitat while excluding, where possible, improved and semi-improved land. At White Park Bay, the inland boundary essentially follows the cliff top. Map 23 (Appendix 3) displays the SAC boundary for North Antrim Coast SAC.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the SAC.

### **Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The principle selection features for North Antrim Coast SAC are; Annual vegetation of drift lines, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), Fixed dunes with herbaceous vegetation (grey dunes), Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe), Vegetated sea cliffs of the Atlantic and Baltic coasts and annex 2 species Narrow-mouthed whorl snail - *Vertigo angustior*

Six of the eight *Vertigo* species are considered to be threatened in Ireland, including the three whorl snails that are protected under Annex II of the Habitats and Species Directive, *Vertigo geyeri*, *V. angustior* and *V. Moulinsiana*, the specific requirements and micro-habitats of each species are different but all are sensitive to changes in drainage, grazing management and disturbance (Moorkens and Killeen 2011). The NIEA conservation objectives report and the vulnerability section of the JNCC data form notes that the site could potentially be adversely affected by changes to grazing patterns, removal of beach and dune sand, changes to surrounding land use, nutrient enrichment and recreational activities.

#### *Water Quality*

NAP has not zoned any areas for development adjacent to the European site or adjacent to any hydrological pathways entering the site.

#### ***Policy Grouping 3 – Economic Development***

The vulnerability section of the European data form does not list aerial pollution as a major threat to North Antrim Coast SAC however aerial pollution and associated atmospheric deposition arising from the NAP area has the potential to lead to increased eutrophication and soil acidification in certain habitats.

Aerial deposition from sources in the NAP may have the potential to damage sensitive plant communities within North Antrim Coast SAC. Sand dune habitats are one of the most natural remaining vegetation types in the UK. Pressures threatening their existence include: sea-level rise, climate change, agricultural improvement, and recreational use, lack of management, over-stabilisation and Nitrogen deposition. Sand dune habitats are generally infertile and thus sensitive to Nitrogen deposition. The greatest impact from Nitrogen is likely to be on early succession communities which include many of the sand dune rare species (APIS 2014).

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are

acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Whilst there are no specific proposals for industry in the Plan within 15km of the SAC that would result in aerial emissions, there may be the possibility for future development which could result in aerial deposition on the site.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009–2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Magilligan SAC selection features	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Fixed dunes with herbaceous vegetation (grey dunes).	**	**	*
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes).	*	/	/
Atlantic salt meadows ( <i>Glaucopuccinellietalia maritima</i> )	Below critical load	/	/
Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas	**	**	*
Narrow-mouthed whorl snail - <i>Vertigo angustior</i>	SS	/	/
Vegetated sea cliffs of the Atlantic and Baltic coasts	/	/	/
Annual vegetation of drift lines	/	/	/

A number of habitat features have exceeded critical loads for nitrogen deposition and acidity levels.

The main source of potentially damaging aerial deposition onto this SAC has been attributed to agricultural sources for nitrogen and imported emissions for sulphur (APIS 2014). NAP has not identified any specific zonations or policies relating to rural agricultural / manure management proposals that are potential sources of ammonia, for example chicken or pig farms. It does not give any requirement for a certain number of these types of developments to be built in the NAP area. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

Any future industrial proposals must comply with legally enforceable obligations designed to avoid environmental effects. Integrated Pollution Protection and Control Guidelines are a Regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The system requires the identification of proposals in close proximity to sensitive receptors such as European sites.

<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p>

<ul style="list-style-type: none"><li>• Result in fragmentation?</li><li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li></ul>	No No
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**Integrity of Site Checklist**

**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken does not enable us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of North Antrim Coast SAC therefore mitigation measures are required for the impacts of aerial pollution. See section **4.0 Mitigation Measures**.

### **3.20 Appropriate Assessment for Red Bay SCI**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Red Bay SCI. Therefore the ‘precautionary principle’ must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

1. Settlement Development Limits
2. Housing
3. Economic Development

NAP has not zoned any land within Red Bay SCI for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Red Bay is a marine SCI situated off the County Antrim coast, adjacent to the small settlement of Cushendun. It has sandbanks slightly covered by seawater at all times which are composed of maerl, sub-fossil maerl, coarse sands, gravels and cobbles. The Red Bay sandbanks are dominated by both living maerl and sub-fossil maerl and have been thoroughly mapped and characterised as part of the SAC selection assessment (JNCC 2014b). Map 24 (Appendix 3) shows the SCI boundary for Red Bay.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

The screening identified that there was a potential for in-combination eutrophication and acidification effects, increased boating activity and disturbance to habitats from the Larne Area plan 2010 and Belfast Metropolitan Area plan 2015.

#### **Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The Red Bay County Antrim marine SCI has been designated for the habitat 'sandbanks which are slightly covered by seawater all the time', which is listed on Annex I of the Habitats Directive. The conservation objectives for the site are to maintain each feature in favourable condition and avoid deterioration and disturbance of qualifying features.

The vulnerability section of the JNCC data form states that the site selection feature could be adversely affected by towed mobile gear fishing and water quality issues emanating from both point and diffuse sources. The NIEA conservation objectives note that the European site could be adversely affected by activities which include coastal development, sewage discharge, marine traffic and fishing.

Red Bay SCI is within the confines of the North Channel, a busy shipping route. Large vessels entering the Irish Sea using the shipping traffic separation scheme may be less than 6km away as they pass the Red Bay SCI. The pumping of bilges, discharge of ballast water, accidental grounding, or accidental oil (or other chemical) spillage from commercial vessels could therefore all occur close to the SAC (NIEA 2009). However there are no policies or proposals for additional marinas or increased boating activity within the NAP area.

Northern Area Plan has not zoned any land within or adjacent to the SCI boundary therefore there will be no direct loss of habitat from the European site.

#### *Aerial Pollution*

Although it is widely acknowledged that aerial emissions have the potential to damage sensitive plant communities, to-date there has been no specific indication that atmospheric deposition from the NAP area is a threat to Red Bay SCI. Based on an assessment of relevant literature and exceedence of critical loads this habitat is not considered sensitive to air pollution or there is no relevant critical load available, the judgement thus is that it is unlikely to be at risk.

#### *Water Quality*

Commercial effluent and sewage discharge has the potential to cause deterioration of qualifying habitats and communities, through pollution or nutrient enrichment. Within the Red Bay SCI, the maerl habitat is sensitive to disturbance, damage, pollution or extraction. Exposure of Red Bay maerl beds to diffuse pollution, effluent discharge and eutrophication may be reduced by the strong tidal currents and open coast location. Other activities, however, may be fatal to the live maerl, particularly any physical disturbance that may lead to direct damage, increased siltation, burial, or extraction of the live maerl (NIEA 2009).

NIEA are responsible under the Water (NI) Order for preventing or minimizing the effects of pollution entering our waterways and to manage the risk of a polluting discharge from occurring. There are currently measures in place to ensure that proposals meet legal requirements associated with: The Drinking Water Directives (80/778/EEC and 98/83/EC); the Major Accidents Directive (96/82/EC); the Environmental Impact Assessment Directive (85/337/EEC); the Sewage Sludge Directive (86/278/EEC); The Urban Waste Water Treatment Directive (91/271/EEC);

the Plant protection products Directive (91/414/EEC) the Nitrates Directive (91/676/EEC) and the Integrated Pollution Prevention and Control Directive. In addition to this any discharge of trade, sewage effluent or any other potential pollution (including effluent from any commercial, industrial or domestic premises or site drainage) to any waterway or any water contained in underground strata requires consent from the Department of the Environment under the Water (Northern Ireland) Order 1999, (Consent for certain other discharges are also required under the Water and Sewage Service (NI) Order 1973 as amended) and is screened at this stage for impacts.

Housing and economic development zonings within the Plan area, either alone or in combination with other plans and programs outside of the Plan area have the potential to result in changes to water quality due to increased sewage and storm water run-off where there is insufficient waste water design capacity. The settlement development limit for Cushendun is directly adjacent to the SCI boundary; however as Cushendun is a small settlement it has not zoned any land within the settlement development limit for built development; and in turn contains no proposals that would lead to increased sewage discharge or increased boating activity that may have a potential adverse effect on the SCI. Only environmental designations that protect the environment have been identified in Cushendun. The settlement development limit for the town of Cushendall lies approximately 1km south of Red Bay SCI along the Antrim coastline. NAP has zoned areas for economic development and housing within in the town. In 2014 there are currently no capacity issues with Cushendall WWTW which services the town of Cushendall (see Appendix 5). Given its small size and distance from the site in open coastal waters, any water quality impacts would be extremely localised, as such is deemed to have no adverse effect on the Natura 2000 site.

The Plan does not zone any land for marine renewable development or any other marine developments. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via the application of Marine Licensing prevailing regional legislation and policy.

### Integrity of site checklist

<b>Integrity of site checklist</b>	
<b><i>Does the project or plan have the potential to:</i></b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p>No</p> <p>No</p> <p>No</p> <p>No</p>
<b><i>Other indicators: Does the project or plan have the potential to:</i></b>	<b>Yes/No</b>
<ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or</li> </ul>	<p>No</p> <p>No</p>



<p>plants and animals) that define the structure and/or function of the site?</p> <ul style="list-style-type: none"> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>
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**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity Red Bay SCI. Mitigation measures are therefore not required.

### **3.21 Appropriate Assessment for Skerries and Causeway SCI**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Skerries and Causeway SCI. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

1. Settlement Development Limits
2. Housing
3. Economic Development

NAP has not zoned any land within Skerries and Causeway SCI for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Skerries and Causeway is situated on the north coast of Northern Ireland. It is the eastern part of a 30km wide embankment that has the Inishowen peninsular to its west and Benbane Head to its east. The site is influenced by the warming Gulf Stream and by the strong tidal currents that flow through the North Channel to and from the Irish Sea. Map 25 (Appendix 3) shows the SCI boundary for Skerries and Causeway.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the European site.

#### **Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The primary selection features for Skerries and Causeway SCI are; sandbanks which are slightly covered by sea water all the time, reefs and submerged or partially submerged sea caves. Annex 2 species Harbour porpoise *Phocoena phocoena* is also present as a qualifying feature but not a primary reason for selection of the site as a SCI.

The JNCC Natura 2000 data form records that the site will be adversely affected by activities including commercial fishing, diffuse pollution through river outflow; and harbour porpoise from loss of feeding grounds or seismic and sonar disturbance. The conservation objectives note that the European site could be adversely affected by activities which include aquaculture, agriculture and forestry operations, coastal and marine development and infrastructure maintenance, discharges of commercial effluent, disposal of dredge spoil, marine litter, research activities, marine traffic and aggregate and maerl extraction.

The majority of large commercial shipping passes far to the North of The Skerries and Causeway SCI. However, smaller coastal vessels on-route to the River Bann or Lough Foyle passes through the cSAC boundary (NIEA 2012). It should be noted that the area inshore of Skerries and Causeway is a designated anchorage for ships sheltering from adverse weather, the pumping of bilges, discharge of ballast water, accidental grounding, or accidental oil (or other chemical) spillage from commercial vessels could therefore all occur close to the European site (NIEA 2012). Such incidents have the potential to cause deterioration of qualifying habitats and communities through direct or indirect impacts.

#### *Harbour Porpoise Phocoena phocoena*

Disturbance or pollution incidents or competition for food sources caused by the promotion of additional sea fishing traffic has a potential to impact upon feature habitats and species. Harbour porpoises are found throughout the coastal waters of the Northern Ireland. They prefer shallow inshore waters and are most commonly seen in harbours and bays. They survive primarily on fish and are among the smallest of the cetaceans, reaching an average size of about 1.5 metres and 55 kilograms. The main threats to harbour porpoise populations are generally thought to be coastal and marine development, by-catch in commercial fisheries, and disturbance by waterborne recreational and commercial shipping, marine pollution and seismic or powerful sonar that may directly harm porpoise or act as a barrier restricting their use of the SCI (NIEA 2012). NAP has not identified any zonations or policies that would increase recreational boating activity or commercial shipping within the SCI boundary. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

#### *Aerial Pollution*

Although it is widely acknowledged that aerial emissions have the potential to damage sensitive plant communities, to-date there has been no specific indication that atmospheric deposition from the NAP area is a threat to Skerries and Causeway SCI. Based on an assessment of relevant literature and exceedence of critical loads this

habitat is not considered sensitive to air pollution or there is no relevant critical load available, the judgement thus is that it is unlikely to be at risk.

### *Water Quality*

NIEA are responsible under the Water (NI) Order for preventing or minimizing the effects of pollution entering our waterways and to manage the risk of a polluting discharge from occurring. There are currently measures in place to ensure that proposals meet legal requirements associated with: The Drinking Water Directives (80/778/EEC and 98/83/EC); the Major Accidents Directive (96/82/EC); the Environmental Impact Assessment Directive (85/337/EEC); the Sewage Sludge Directive (86/278/EEC); The Urban Waste Water Treatment Directive (91/271/EEC); the Plant protection products Directive (91/414/EEC) the Nitrates Directive (91/676/EEC) and the Integrated Pollution Prevention and Control Directive. In addition to this any discharge of trade, sewage effluent or any other potential pollution (including effluent from any commercial, industrial or domestic premises or site drainage) to any waterway or any water contained in underground strata requires consent from the Department of the Environment under the Water (Northern Ireland) Order 1999, (Consent for certain other discharges are also required under the Water and Sewage Service (NI) Order 1973 as amended) and is screened at this stage for impacts.

Housing and economic development zonings within the Plan area, either alone or in combination with other plans and programs outside of the Plan area have the potential to result in changes to water quality due to increased sewage and storm water run-off where there is insufficient waste water design capacity.

The settlement development limits for Portstewart, Portrush and Portballintrae are adjacent to the SCI boundary; all three settlements have land zoned for housing which will lead to additional built development and increased sewage. Similarly Bushmills is hydrologically linked to the European site by the Bush River which flows through the town and into Skerries and Causeway. Within the settlement development limits of Bushmills land zoned for economic development and housing creating additional development and increased sewage.

Portstewart and Portrush are both serviced by North Coast WWTW, Portballintrae and Bushmills are serviced by Bushmills WWTW. WWTW figures provided by NI Water for the settlements above indicate that all four settlements have sufficient WWTW capacity for the plan. Water quality mitigation measures are built into the plan and as such it is deemed to have no adverse affect on the Natura 2000 site.

### *Coastal and Marine Development*

Some of the main threats to habitats appear to be coastal and marine development, particularly for tourism related activities. NAP has not identified any zonations or policies relating to coastal or marine development adjacent to the SCI boundary, any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via development management and the application of prevailing regional policy and, if appropriate, any relevant policies within NAP.

### Integrity of site checklist

<b>Integrity of site checklist</b>	
<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>

### Appropriate Assessment Conclusion and Recommendations

The evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Skerries and Causeway SCI. Mitigation measures are therefore not required.

### **3.22 Appropriate Assessment for Rathlin Island SPA**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Skerries and Causeway SAC. Therefore the 'precautionary principle' must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### **3. Economic Development**

NAP has not zoned any land within Rathlin Island SPA for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Rathlin Island SPA comprises the major sea-cliffs around Rathlin Island. The basalt and limestone cliffs are principally important for the seabird colonies, most notably around the area of West Light, but also along sections of the north coast. This extensive habitat also supports a notable breeding population of Peregrine.

The Rathlin Island Special Protection Area (SPA) is classified as an extension to, and renaming of, a previously classified SPA i.e. Rathlin Island Cliffs SPA. The new site includes the area of coast previously covered by the Rathlin Island Cliffs SPA plus an area of sea around the island and the new site boundary is now entirely coincident with the boundary of the Rathlin Island Special Area of Conservation. The sea area has been included for seabirds. Such areas adjoining colonies are of particular importance for courtship, preening and loafing behaviours, and also, to a lesser extent, feeding. Map 26 (Appendix 3) shows the SPA boundary for Rathlin Island.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the SAC. The Plan does not zone any land for marine renewable development or any other marine developments. Any

such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via the application of Marine Licensing prevailing regional legislation and policy.

**Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The site regularly supports internationally important numbers of breeding and migratory birds. The principle selection features for the site are Annex 1 species Peregrine *Falco peregrinus*. Other qualifying features are Guillemot *Uria aalge*, Razorbill *Alca torda*, Black-legged Kittiwake - *Rissa tridactyla* and a seabird assemblage of international importance.

The conservation objectives for the site are to maintain each feature in favourable condition. Monitoring is carried out and includes measurements of population numbers and maintenance of the extent and quality of natural and semi-natural habitats and roost or loafing sites that are used by the feature species. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not.

The 2013 NIEA conservation objectives note that the site could potentially be damaged by recreational and commercial boating activity, commercial and recreational fishing, predation of birds, recreational activities and research activities.

*Aerial Pollution*

Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from economic development zonings within the NAP have the potential to lead to eutrophication and soil acidification.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions.

The closest economic development zoning in the NAP is approximately 6.5km away within the settlement development limits of Ballycastle.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Rathlin Island selection features	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Peregrine Falcon - <i>Falco peregrinus</i> (Breeding)	/	/	/
Razorbill - <i>Alca torda</i> (Breeding)	/	/	/
Black-legged Kittiwake - <i>Rissa tridactyla</i> (Eastern Atlantic - Breeding)	/	/	/
Common Guillemot – <i>Uria aalge</i>	/	/	/

Results from APIS confirm that feature species for Rathlin Island SPA are not sensitive to the effects of aerial pollution on species broad habitat.

#### Integrity of site checklist

Integrity of site checklist	
<b>Does the project or plan have the potential to:</b>	<b>Yes/No</b>
• Cause delays in progress towards achieving the conservation objectives of the site?	No
• Interrupt progress towards achieving the conservation objectives of the site?	No



<ul style="list-style-type: none"> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p>No</p> <p>No</p>
<p><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>

### **Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Rathlin Island SPA. Mitigation measures are therefore not required.

### **3.23 Appropriate Assessment for Rathlin Island SAC**

In the screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Skerries and Causeway SAC. Therefore the ‘precautionary principle’ must be applied and significant effects were assumed. In particular the following Plan Proposals and Policy Topics could adversely affect the integrity of the site:

#### **3. Economic Development**

NAP has not zoned any land within Rathlin Island SAC for development and as such there will be no direct destruction of habitat as a result of the implementation of NAP, nor will there be any impact on any management activities associated with the European site.

Rathlin Island is a large inhabited marine island situated some 4km from the north Antrim coast of Northern Ireland. There are basalt and chalk cliffs, some as high as 100 metres, as well as several sea stacks on the north and west shores of the island. The south and east shores are more gently sloping with areas of maritime grassland and rocky shore. The length of the coastline is approximately 30 km.

Rathlin Island is surrounded by a wide range of rocky habitats and is one of the best examples of reefs in Northern Ireland. Strong tidal streams prevail around most of the island, and there is little silt (JNCC 2014). Marine SAC features of importance for Rathlin Island include the Annex 1 primary habitat features of reefs and submerged or partially submerged sea caves plus qualifying feature sandbanks which are slightly covered by sea water at all times.

Map 27 (Appendix 3) shows the SAC boundary for Rathlin Island.

#### **In-combination effects from other plans or projects that are likely to have significant effects.**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the SAC. The Plan does not zone

any land for marine renewable development or any other marine developments. Any such proposals would therefore be out-with any plan proposals and would have to be considered on a case by case basis via the application of Marine Licensing prevailing regional legislation and policy.

**Conservation Objectives and implications for each qualifying interest in light of its conservation objectives.**

The principle SAC selection features for the site are reefs, vegetated sea cliffs of the Atlantic and Baltic Coasts and Submerged or partially submerged sea caves. Other qualifying features present but not primary reasons for selection include sandbanks which are slightly covered by sea water all the time and annual vegetation of drift lines.

The conservation objectives for the site are to maintain each feature in favourable condition and where possible enhance feature extent. The vulnerability section of the JNCC Natura 2000 data form notes that there are potential adverse effects on the site from commercial fishing and habitat loss from recreational activities and man made structures. However effects of these activities are thought to be minimal. In the 2007 condition report the all three SAC habitat features were deemed to be in favourable condition. The NIEA Conservation Objectives note that the site could be adversely affected by commercial fishing and harvesting of shellfish, inappropriate grazing, recreational activities and removal of beach sand and gravel. However damage to the site from these activities is thought to be minimal.

*Aerial Pollution*

Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from economic development zonings within the NAP have the potential to lead to eutrophication and soil acidification.

Bealey et al. (2011) identified that in the UK, 10 and 15km are used as distances that require screening assessment of individual activities regulated under the Integrated Pollution Protection and Control Directive (2008/1/EC) due to the potential for aerial depositions (Bealey et al. 2011). Where an installation is within 15km of a European site, applicants have to make an assessment of potential impacts. This assessment may require the use of detailed air impact assessment (Bealey et al. 2011). Or in other cases a screening tool can be used to demonstrate whether potential impacts are acceptable. For proposals which may have a potential impact on designated habitats, the Industrial Pollution and Radiochemical Inspectorate (IPRI), NIEA will consult with Natural Environment Division, NIEA for comments on proposals.

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions.

To further assess the implications of aerial pollution on the European and Ramsar site it was deemed appropriate to consider if critical loads for nutrient-nitrogen or acidity

deposition were met or exceeded within this site using tools within the UK Air Pollution Information System (APIS 2014).

Table showing where critical loads for nutrient-nitrogen and acidity have been met\* or exceeded\*\* for site selection features using tools within the UK Air Pollution Information System (APIS 2014). Total Deposition is based on CBED (Concentration Based Estimated Deposition). CBED is based on measured–interpolated data for a 3 year average 2009-2011. SS means that the impacts are site specific and the APIS system does not identify critical loads. Features that are not considered sensitive to nutrient-nitrogen and acidity, or which have no recorded critical load are marked with the / symbol.

Rathlin Island SAC selection features	Total Critical Load Met or Exceeded		
	Nitrogen Critical Load	Nitrogen Acidity	Sulphur Acidity
	2009-2011	2009-2011	2009-2011
Vegetated sea cliffs of the Atlantic and Baltic coasts	/	/	/
Annual vegetation of drift lines	/	/	/
Reefs	/	/	/
Submerged or partially submerged sea caves	/	/	/
Sandbanks which are slightly covered by sea water all the time	/	/	/

Results from APIS show that the habitat features for Rathlin Island SAC are not sensitive to eutrophication or acidification. Mitigation is therefore not required.

### Integrity of site checklist

Integrity of site checklist	
<p><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• Cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• Interrupt progress towards achieving the conservation objectives of the site?</li> <li>• Disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• Interfere with the balance, distribution and density of key species that are the</li> </ul>	<p><b>Yes/No</b></p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>

indicators of the favourable condition of the site?	
<p style="text-align: center;"><b>Other indicators: Does the project or plan have the potential to:</b></p> <ul style="list-style-type: none"> <li>• Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• Reduce the area of key habitats?</li> <li>• Reduce the population of key species?</li> <li>• Change the balance between key species?</li> <li>• Reduce diversity of the site?</li> <li>• Result in disturbance that could affect population size or density or the balance between key species?</li> <li>• Result in fragmentation?</li> <li>• Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>

**Appropriate Assessment Conclusion and Recommendations**

The evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity of Rathlin Island SAC. Mitigation measures are therefore not required.

## **4.0 Mitigation Measures**

The Appropriate Assessment process undertaken in the previous chapter concluded that a number of mitigation measures are required to ensure that NAP will not adversely affect the integrity of European Sites.

This included required mitigation measures relating to:

### **Aerial pollution**

- Banagher Glen SAC
- Ballynahone Bog SAC
- Carn-Glenshane Pass SAC
- Dead Island Bog SAC
- Garry Bog SAC
- Main Valley Bogs SAC
- Wolf Island Bog SAC
- Lough Neagh and Lough Beg SAC/SPA/RAMSAR
- Breen Wood SAC
- Bann Estuary SAC
- Binevenagh SAC
- Garron Plateau SAC/RAMSAR
- River Roe and Tributaries SAC
- Magilligan SAC
- North Antrim Coast SAC

### **Water Quality**

- River Roe and Tributaries SAC
- Bann Estuary SAC
- Lough Foyle SPA/RAMSAR
- North Antrim Coast SAC

### **Loss of suitable foraging / feeding / roosting habitat**

- Antrim Hills SPA

### **Hydrological effects**

- Ballynahone Bog SAC
- Carn-Glenshane Pass SAC
- Dead Island Bog SAC
- Garry Bog SAC

- Main Valley Bogs SAC
- Wolf Island Bog SAC

### **Aerial Pollution**

It is widely acknowledged that aerial emissions have the potential to damage sensitive habitat. Aerial deposition from development in the NAP may have the potential to be a contributing factor to the overall deposition levels at a number of European Sites. This includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

The NAP Employment Strategy provides a measure of certainty about which types of development will and will not be permitted. However there is uncertainty about where new industrial proposals which have the potential to promote uses which generate significant aerial emissions which would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013 are likely to be located. The plan suggested that one of the employment sites within 15km of SACs, SPAs and Ramsar's would be suitable for special industrial use. The adopted plan does not give any indication that impacts of aerial emissions from any new industrial development proposals may be an environmental constraint which could result in the need for a Habitat Regulation Assessment to ensure that there would be no adverse impacts on European Sites. It was deemed that mitigation is required to address this issue in the NAP.

### **Water Quality**

There are a number of NAP development zones either in close proximity to, or infrastructurally connected to water bodies associated with European Sites. NI Water have confirmed that the majority of WWTWs associated with the European Sites in question are satisfactory and capable of accommodating all development within their catchments that are proposed in the Plan through the Plan period.

There is an existing regulatory regime in place that should control discharges associated with any proposals resulting from the implementation of NAP. NIEA are responsible under the Water (NI) Order 1999 for preventing or minimizing the effects of pollution entering our waterways and to manage the risk of a polluting discharge from occurring. There are currently measures in place to ensure that proposals associated with the rivers meet legal requirements associated with: The Drinking Water Directives (80/778/EEC and 98/83/EC); the Major Accidents Directive (96/82/EC); the Environmental Impact Assessment Directive (85/337/EEC); the Sewage Sludge Directive (86/278/EEC); The Urban Waste Water Treatment Directive (91/271/EEC); the Plant Protection Products Directive (91/414/EEC) the Nitrates Directive (91/676/EEC) and the Integrated Pollution Prevention and Control Directive. In addition to this any discharge of trade, sewage effluent or any other potential pollution (including effluent from any commercial, industrial or domestic premises or site drainage) to any waterway or any water contained in underground strata requires consent from the Department of the Environment under the Water (Northern Ireland) Order 1999 (Consent for certain other discharges are also required under the Water and Sewage Service (NI) Order 1973 as amended). Such consents can include conditions outlining the quantity and quality of the discharges and are

drawn up to ensure that the waste can be absorbed by the receiving waterway without affecting the quality of the aquatic environment, or breaching national or European Commission (EC) standards.

However there may be occasions when planning permission is sought prior to discharge consent being granted. NAP does not make any reference to the potential for discharges from zoned development sites into rivers associated with the European Sites to have adverse impacts on water quality and subsequently on the integrity of hydrologically connected European Sites. It was deemed that mitigation is required to address this issue in the NAP.

### **Loss of Suitable Foraging / Feeding / Roosting Habitat**

There are several areas within the NAP plan that would provide suitable foraging habitat for Hen Harrier and Merlin during nesting periods (Antrim Hills SPA feature).

During the lifetime of the plan there may be development applications which could result in loss of foraging, feeding or roosting habitat for these bird species, or could increase disturbance levels. PPS1 indicates that Development Plans are the primary means of evaluating and reconciling any potential conflict between the need for development and the need to protect the environment within particular areas. NAP does not give any indication that impacts of new development proposals in the proximity of Antrim Hills SPA could result in the need for a Habitat Regulation Assessment to ensure that there would be no adverse impacts on European site integrity. The Appropriate Assessment carried out on Antrim Hills SPA therefore concluded that consultation zones are required for Antrim Hills SPA within the NAP area.

### **Hydrological Effects**

During the lifetime of the plan there may be development applications, for example for mineral extraction, in close proximity to a number of European sites that could result in potentially damaging hydrological changes, pollution and disturbance. PPS1 indicates that Development Plans are the primary means of evaluating and reconciling any potential conflict between the need for development and the need to protect the environment within particular areas. NAP does not give any indication that impacts of new development proposals in the proximity of a number of SACs associated with bog habitats could result in the need for a Habitat Regulation Assessment to ensure that there would be no adverse impacts on European site integrity. The Appropriate Assessment carried out therefore concluded that consultation zones were required for a number of SACs within the NAP area.

Note: The rationale for a Consultation Zone boundary includes the designated site and surrounding area within which, developments have the potential to cause direct or indirect adverse impacts on the conservation objectives of the European site.

**As way of mitigation the Northern Area Plan has included the following wording within the Natural Environment section of the Plan Strategy and Framework:**

*‘Considerations Arising From the Habitats Regulations Assessment Process’*



*The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) Habitats Regulations Assessment has been carried out on the impacts of the Plan Proposals on the European Sites within or in close proximity to the Plan Area.*

*The Habitats Regulations Assessment concluded that consultation zones were required for lands outside Antrim Hills SPA within the Plan area due to the utilization of these areas by feature bird species, in particular Hen Harrier and Merlin, for foraging, feeding and roosting. Proposed developments within these consultation zones must be scrutinised to ensure, that in line with the Habitats Directive, there will be no adverse effects on the integrity of the features of Antrim Hills SPA. The boundary of these consultation zones are identified in the accompanying Habitats Regulations Assessment Report.*

*The Habitats Regulations Assessment also concluded that consultation zones were required for a number of European sites associated with bog habitats (Ballynahone Bog SAC; Carn-Glenshane Pass SAC; Dead Island Bog SAC; Garry Bog SAC; Main Valley Bogs SAC; and Wolf Island Bog SAC) due to the potential adverse effect of new developments on site hydrology. Proposed developments within these consultation zones must be scrutinized to ensure that, in line with the Habitats Directive, there will be no adverse effects on the integrity of the features of these European Sites. The boundaries of these consultation zones are identified in the accompanying Habitats Regulations Assessment Report.*

*Aerial depositions can damage habitats and associated species. Aerial emissions resulting from new industrial development in the NAP area, in particular from industrial uses which generate significant aerial emissions, have the potential to be a contributing factor to the overall deposition levels at a number of sensitive European Sites. Any new industrial development proposals in the NAP area whose operational aerial emissions may affect a European Site must be subject to a Habitats Regulations Assessment to ensure that there would be no adverse impact on European Site integrity. Such proposals are also likely to be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013.*

*Deterioration of water quality in the NAP area is an issue that could have adverse impacts on the integrity of European Sites. Proposed developments that are adjacent to, or that discharge into, waterways associated with European Sites must be scrutinized to ensure, that in line with the Habitats Directive, there will be no adverse impact on the integrity of these European Sites. If at any point during the Plan period it is deemed that WWTW capacity or associated infrastructure is not sufficient to cope with a proposed development at the time of a planning application or where unsatisfactory intermittent discharges have been identified, the developer will be required to ensure that there will be no adverse impact on any European Site as a result of a lack of waste water treatment provision at any stage of the development process.*

## 5.0 Conclusions

### Conclusions of the NAP Habitats Regulations Assessment

It was apparent that NAP would not be likely to have a significant effect on the majority of SACs, SPAs and Ramsar sites throughout Europe due to its distance from these sites. A screening exercise was therefore undertaken to identify European sites that NAP has a potential bearing upon. No European or Ramsar Sites in other UK Regions or Ireland were identified as requiring detailed assessment due to the distance factor and their lack of connectivity to the NAP area.

Of the Northern Ireland sites identified as requiring Appropriate Assessment the process undertaken concluded that the evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity (structure and function and conservation objectives) of:

Rathlin Island SPA  
Rathlin Island SAC  
Red Bay SCI  
Sheep Island SPA  
Skerries and Causeway SCI

During the HRA process potential risks were identified in so far as they may be reasonably foreseeable, in light of such information as can reasonably be obtained. The Appropriate Assessment process identified that a number of mitigation measures were required to ensure that NAP will not have any adverse effect on the integrity of the following European Sites: Antrim Hills SPA; Banagher Glen SAC; Bann Estuary SAC; Binevenagh SAC; Breen Wood SAC; Carn-Glenshane Pass SAC; Garry Bog SAC and Ramsar; Garron Plateau SAC and Garron Plateau Ramsar; Magilligan SAC; Main Valley Bogs SAC; North Antrim Coast SAC; River Roe and Tributaries SAC; Lough Foyle SPA and Ramsar; Ballynahone Bog SAC ; Dead Island Bog SAC ; River Faughan and Tributaries SAC ; Wolf Island Bog SAC ; and Lough Neagh & Lough Beg SPA and Ramsar Site

This included required mitigation measures relating to: Aerial pollution; Loss of suitable foraging / feeding / roosting habitat; Water quality; and Hydrological effects. Associated mitigation measures have been incorporated into the framework of NAP with the aim of preventing the identified risks from materialising. This included the addition of mitigation text within the NAP Plan Strategy and Framework and the identification of consultation zones associated with Hen Harrier and Merlin foraging areas and Bog habitats.

Taking the incorporated mitigation measures into account the integrity of site checklist associated with the appropriate assessment of each of sites requiring can be revised to read:

<b>Integrity of site checklist</b>	
<p style="text-align: center;"><b><i>Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• cause delays in progress towards achieving the conservation objectives of the site?</li> <li>• interrupt progress towards achieving the conservation objectives of the site?</li> <li>• disrupt those factors that help to maintain the favourable conditions of the site?</li> <li>• interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>
<p style="text-align: center;"><b><i>Other indicators: Does the project or plan have the potential to:</i></b></p> <ul style="list-style-type: none"> <li>• cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</li> <li>• change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</li> <li>• interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</li> <li>• reduce the area of key habitats?</li> <li>• reduce the population of key species?</li> <li>• change the balance between key species?</li> <li>• reduce diversity of the site?</li> <li>• result in disturbance that could affect population size or density or the balance between key species?</li> <li>• result in fragmentation?</li> <li>• result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding , etc.)?</li> </ul>	<p style="text-align: center;"><b>Yes/No</b></p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p> <p style="text-align: center;">No</p>

The evidence gathered and assessment undertaken enables us to conclude reasonably and objectively that the implementation of NAP will not adversely affect key species and key habitats or the integrity (structure and function and conservation objectives) of:

- Antrim Hills SPA
- Banagher Glen SAC
- Bann Estuary SAC
- Binevenagh SAC
- Breen Wood SAC
- Carn-Glenshane Pass SAC
- Garry Bog SAC and Ramsar

Garron Plateau SAC and Garron Plateau Ramsar  
Magilligan SAC  
Main Valley Bogs SAC  
North Antrim Coast SAC  
River Roe and Tributaries SAC  
Lough Foyle SPA and Ramsar  
Ballynahone Bog SAC  
Dead Island Bog SAC  
River Faughan and Tributaries SAC  
Wolf Island Bog SAC  
Lough Neagh & Lough Beg SPA and Ramsar Site

It has been ascertained that the NAP plan would not adversely affect the key species and key habitats or the integrity (structure and function and conservation objectives) of any European site.

## 7.0 Appendices

### Appendix 1: Conservation Objectives

#### Antrim Hills SPA

Feature	Component Objective
Hen Harrier breeding population	No significant decrease in population against national trends, caused by on-site factors
	Fledging success sufficient to maintain or enhance population
Merlin breeding population	No significant decrease in population against national trends, caused by on-site factors
	Fledging success sufficient to maintain or enhance population

#### Banagher Glen

Feature	Component Objective
Old sessile oak woods with Ilex and Blechnum in the British Isles	Maintain and where feasible <u>expand</u> the extent of existing oak woodland but not at the expense of other SAC (ABC) features. (There are area of degraded heath, wetland and damp grassland which have the potential to develop into oak woodland)
	Maintain and enhance Oak woodland species diversity and structural diversity
	Maintain the diversity and quality of habitats associated with the Oak woodland, e.g. fen, swamp, grasslands, scrub, especially where these exhibit natural transition to Oak woodland
	Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation
Tilio-Acerion forests of slopes, screes and ravines	Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion
	Maintain and where feasible <u>expand</u> the extent of existing ash woodland, but not at the expense of other SAC (ABC) features (There is an area of degraded bog, wetland and damp grassland which have the potential to develop into ash woodland.
	Maintain and enhance ash woodland species diversity and structural diversity.
	Maintain the diversity and quality of habitats associated with the ash woodland, e.g. scrub, especially where these exhibit natural transition.
	Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.
	Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.

**Bann Estuary SAC**

<b>Feature</b>	<b>Component Objective</b>
Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )	To maintain or extend, as appropriate, the area of saltmarsh, subject to natural processes
	To maintain or enhance, as appropriate, the composition of the saltmarsh communities
	To maintain transitions between saltmarsh communities and to other adjoining habitats
	To permit the continued operation of formative and controlling natural processes acting on the saltmarsh communities
Embryonic shifting dunes	Maintain or enhance the extent of embryonic shifting dunes subject to natural processes
	Allow the natural processes that determine the development and extent of embryonic shifting dunes to operate appropriately
Fixed dunes with herbaceous vegetation (grey dunes)	Maintain and expand the extent of existing species-rich fixed dune, SD8
	Maintain and enhance species diversity within the SD8 community including the presence of notable species
	Seek nature conservation management over suitable areas immediately outside the SAC where there is possibility of restoring fixed dune
	Maintain the diversity and quality of habitats associated with the fixed dunes, e.g. neutral grasslands and scrub, especially where these exhibit a natural transition to fixed dune vegetation
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Maintain and enhance the extent of white dunes subject to natural processes
	Allow the natural processes that determine the development and extent of white dunes to operate appropriately
	Maintain and enhance, as appropriate, the species diversity within this community

**Ballynahone Bog SAC**

<b>Feature</b>	<b>Component Objective</b>
Active raised bog	Maintain the extent of intact lowland raised bog and actively regenerating raised bog vegetation
	Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species
	Seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog
	Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially

	where these exhibit natural transition to the raised bog
	Maintain the hydrology of the raised bog peat mass
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation

**Binevenagh SAC**

Feature	Component Objective
Calcareous rocky slopes with chasmophytic vegetation	Maintain the existing Arctic Alpine cliff vegetation.
Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe)	Maintain and expand the extent of existing species-rich dry calcareous grasslands (CG10).
	Maintain and enhance species diversity within the CG10 community including the presence of notable species.
	Seek nature conservation management over suitable areas immediately outside the cSAC where there is possibility of restoring calcareous grassland.
	Maintain the diversity and quality of habitats associated with the calcareous grassland, e.g. acid grasslands, wet heath, scrub, especially where these exhibit natural transition to calcareous grassland.
Calcareous and calshist screes of the montane to alpine levels ( <i>Thlaspietea rotundifolii</i> )	Maintain the existing scree and associated plant communities.

**Breen Wood SAC**

Feature	Objective
<b>Old Sessile Oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</b>	Maintain and <u>expand</u> the extent of the existing oak woodland. (There are adjacent areas of degraded bog, wetland and damp grassland which have the potential to develop into oak woodland)
	Maintain and enhance Oak woodland species diversity and structural diversity.
	Maintain the diversity and quality of habitats associated with the Oak woodland, e.g. fen, swamp, grasslands, scrub, especially where these exhibit natural transitions to Oak woodland
	Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.
	Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.
<b>Bog Woodland</b>	Maintain and <u>expand</u> the extent of the existing bog woodland. (There are areas of degraded bog, wetland and damp grassland, which have the potential to develop into bog woodland.
	Maintain and enhance bog woodland species diversity and structural diversity.
	Maintain the diversity and quality of habitats associated with the bog woodland, e.g. fen, swamp, especially where these exhibit natural transitions to bog woodland.
	Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.
	Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.

**Carn/ Glenshane Pass SAC**

<b>Feature</b>	<b>Component Objective</b>
Active blanket bog	Maintain the extent of intact blanket bog and actively regenerating blanket bog vegetation
	Maintain and enhance the quality of the blanket bog community types including the presence of notable species
	Seek to expand the extent of actively regenerating blanket bog vegetation into degraded (non-active) areas of cutover bog
	Maintain the diversity and quality of other habitats associated with the blanket bog, especially where these exhibit natural transition to the blanket bog
	Maintain the hydrology of the intact blanket bog peat mass
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for blanket bog rehabilitation

**Dead Island Bog SAC**

<b>Feature</b>	<b>Component Objective</b>
Active raised bog	Maintain the extent of intact lowland raised bog and actively regenerating raised bog vegetation
	Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species
	Seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog
	Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog
	Maintain the hydrology of the raised bog peat mass
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation

**Garry Bog SAC**

<b>Feature</b>	<b>Component Objective</b>
Active raised bog	Maintain the extent of intact lowland raised bog and actively regenerating Raised bog vegetation.
	Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species.
	Seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog.
	Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog.
	Maintain the hydrology of the raised bog peat mass.



	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.
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**Garron Plateau SAC**

Feature	Component Objectives
Active blanket bog	Maintain the extent of intact blanket bog and actively regenerating blanket bog vegetation.
	Maintain and enhance the quality of the blanket bog community types including the presence of notable species.
	Seek to expand the extent of actively regenerating blanket bog vegetation into degraded (non-active) areas of cutover bog.
	Maintain the diversity and quality of other habitats associated with the blanket bog, especially where these exhibit natural transition to the blanket bog.
	Maintain the hydrology of the intact blanket bog peat mass.
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for blanket bog rehabilitation.
Alkaline Fen (upland)	Identify the main areas of upland alkaline fen, describe and delineate them with more precision.
	Maintain the extent of existing alkaline fen.
	Maintain the diversity and quality of different alkaline fen habitat.
	Maintain and enhance fen species diversity including the presence of notable or rare species, within each type.
	Maintain the diversity and quality of associated habitats.
Marsh saxifrage <i>Saxifraga hirculus</i>	Absence of erosion features associated with human impacts, and no exacerbation of natural erosion features.
	Expand the existing population of Marsh Saxifrage <i>Saxifraga hirculus</i> .
	Seek nature conservation management over suitable areas within the cSAC where there is possibility of restoring Marsh Saxifrage. (There is crossover here with the BAP for this species).

Oligotrophic to mesotrophic upland isoetid lake	Open water area and water level regime to remain stable.
	The lake water to remain poor in plant nutrients and not to fluctuate outside normal limits.
	Characteristic aquatic vegetation to remain present.
	Minimal negative impacts from artificial structures.
	Minimal negative impacts from recreation.
Northern Atlantic wet heath with <i>Erica tetralix</i> .	Maintain the extent of existing Northern Atlantic wet heath vegetation.
	Maintain and enhance the quality of the existing wet heathland.
	Seek to expand the extent of the wet heath communities into degraded areas of species poor, wet acid grassland.
	Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the Northern Atlantic wet heath.
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for wet heath rehabilitation.
Naturally dystrophic lakes and pools	Maintain the open water area of ponds and lakes.
	Maintain the extent of pool complexes and the numbers of pools within.
	The lake water to remain poor in plant nutrients and not to fluctuate outside normal limits.
	Characteristic aquatic vegetation to remain present.

	Minimal negative impacts from artificial structures.
	Minimal negative impacts from recreation.
	Identify the main areas of transition mires and quaking bog and describe and delineate them with more precision.
Transition mires and quaking bogs	Identify the main areas of transition mires and quaking bog and describe and delineate them with more precision.
	Maintain the area of open transition mire vegetation.
	Maintain the integrity of the various plant communities that are typical in different situations where this feature occurs.
	Maintain the water table at or very close to the surface. Ground should be soft, bouncy & squelchy.

**Lough Foyle SPA**

<b>Feature</b>	<b>Component Objective</b>
Bewick's Swan wintering population	No significant decrease in population against national trends
Whooper Swan wintering population	No significant decrease in population against national trends
Golden Plover wintering population	No significant decrease in population against national trends
Bar-tailed Godwit wintering population	No significant decrease in population against national trends
Light-bellied Brent Goose wintering population	No significant decrease in population against national trends
Great Crested Grebe wintering population	No significant decrease in population against national trends
Cormorant wintering population	No significant decrease in population against national trends
Greylag Goose wintering population	No significant decrease in population against national trends
Shelduck wintering population	No significant decrease in population against national trends
Wigeon wintering population	No significant decrease in population against national trends
Teal wintering population	No significant decrease in population against national trends
Mallard wintering population	No significant decrease in population against national trends
Eider wintering population	No significant decrease in population against national trends
Red-breasted Merganser wintering population	No significant decrease in population against national trends
Oystercatcher wintering population	No significant decrease in population against national trends
Lapwing wintering population	No significant decrease in population against national trends
Knot wintering population	No significant decrease in population against national trends
Dunlin wintering population	No significant decrease in population against national trends
Curlew wintering population	No significant decrease in population against national trends
Redshank wintering population	No significant decrease in population against national trends
Waterfowl Assemblage wintering population	No significant decrease in Waterfowl Assemblage population against national trends
Waterfowl Assemblage wintering population	Maintain species diversity contributing to the Waterfowl Assemblage
Habitat Extent	Maintain or enhance the area of natural and semi-natural habitats potentially usable by Feature bird species. (2056.13 ha intertidal area) subject to natural processes
Habitat Extent	Maintain the extent of main habitat components subject to natural processes
Roost sites wintering population	Maintain or enhance sites utilised as roosts

**Lough Neagh and Lough Beg SPA**

<b>Feature</b>	<b>Component Objective</b>
Common Tern breeding population	No significant decrease in population against national trends, caused by on-site factors
Common Tern breeding population	Fledging success
Great Crested Grebe breeding population	No significant decrease in population against national trends, caused by on-site factors
Great Crested Grebe breeding population	Fledging success
Great Crested Grebe passage population	No significant decrease in population against national trends, caused by on-site factors
Whooper Swan wintering population	No significant decrease in population against national trends, caused by on-site factors
Bewick's Swan wintering population	No significant decrease in population against national trends, caused by on-site factors
Golden Plover wintering population	No significant decrease in population against national trends, caused by on-site factors
Great Crested Grebe wintering population	No significant decrease in population against national trends, caused by on-site factors
Pochard wintering population	No significant decrease in population against national trends, caused by on-site factors
Tufted Duck wintering population	No significant decrease in population against national trends, caused by on-site factors
Scaup wintering population	No significant decrease in population against national trends, caused by on-site factors
Goldeneye wintering population	No significant decrease in population against national trends, caused by on-site factors
Little Grebe wintering population	No significant decrease in population against national trends, caused by on-site factors
Cormorant wintering population	No significant decrease in population against national trends, caused by on-site factors
Greylag Goose wintering population	No significant decrease in population against national trends, caused by on-site factors
Shelduck wintering population	No significant decrease in population against national trends, caused by on-site factors
Wigeon wintering population	No significant decrease in population against national trends, caused by on-site factors
Gadwall wintering population	No significant decrease in population against national trends, caused by on-site factors
Teal wintering population	No significant decrease in population against national trends, caused by on-site factors
Mallard wintering population	No significant decrease in population against national trends, caused by on-site factors
Shoveler wintering population	No significant decrease in population against national trends, caused by on-site factors
Coot wintering population	No significant decrease in population against national trends, caused by on-site factors

Lapwing wintering population	No significant decrease in population against national trends, caused by on-site factors
Waterfowl Assemblage wintering population	No significant decrease in population against national trends, caused by on-site factors
Waterfowl Assemblage wintering population	Maintain species diversity contributing to the Waterfowl Assemblage
Habitat	To maintain or enhance the area of natural and semi-natural habitats potentially usable by Feature bird species subject to natural processes
Habitat	Maintain the extent of main habitat components subject to natural processes
Habitat	Maintain or enhance sites utilised as roosts

### Magilligan SAC

Feature	Component Objective
Dunes with <i>Salix repens</i> ssp. <i>Argentea</i> ( <i>Salicion arenariae</i> )	Maintain and expand the extent of existing dunes with <i>Salix repens</i> . Increase permitted into areas of rank dune grassland, but <u>not</u> into humid dune slack or spp-rich short turf (SD8).
	Maintain and enhance species diversity within the SD16 community including the presence of notable species.
	Seek nature conservation management over suitable areas immediately outside the cSAC where there is possibility of restoring fixed dune with <i>Salix repens</i> .
Embryonic shifting dunes	Maintain or enhance the extent of embryonic shifting dunes subject to natural processes.
	Allow the natural processes which determine the development and extent of embryonic shifting dunes to operate appropriately.
Fixed dunes with herbaceous vegetation (grey dunes)	Maintain and expand the extent of existing species-rich fixed dune, SD8.
	Maintain and enhance species diversity within the SD8 community including the presence of notable species.
	Seek nature conservation management over suitable areas immediately outside the cSAC where there is possibility of restoring fixed dune.
	Maintain the diversity and quality of habitats associated with the fixed dunes, e.g. neutral grasslands, scrub, especially where these exhibit natural transition to fixed dune vegetation.
Humid dune slacks	Maintain and expand the extent of existing humid dune slacks.
	Maintain and enhance species diversity within the range of humid dune slack communities including the presence of notable species.
	Seek nature conservation management over suitable areas immediately outside the cSAC where there is possibility of restoring humid dune slack.
	Maintain the diversity and quality of habitats associated with humid dune slack e.g. neutral grasslands and other sand dune communities, especially where these exhibit natural transition to dune slack.
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Maintain and enhance the extent of white dunes subject to natural processes.
	Allow the natural processes which determine the development and extent of white dunes to operate appropriately.
	Maintain and enhance, as appropriate, the species diversity within this community.
<i>Eurodryas aurinia</i>	To maintain (and if feasible enhance) population numbers and distribution.

	To maintain (and if feasible enhance) the extent and quality of suitable Marsh Fritillary breeding habitat, particularly suitable rosettes of the larval food plant <i>Succisa pratensis</i> .
<i>Petalophyllum ralfsii</i>	Expand the existing population of Petalwort. Seek nature conservation management over suitable areas within the cSAC where there is possibility of restoring Petalwort. (There is crossover here with the BAP for this species)

### Main Valley Bogs SAC

Feature	Component Objective
Active raised bog	Maintain the extent of intact lowland raised bog and actively regenerating raised bog vegetation.
	Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species.
	Seek to expand the extent of actively regenerating bog vegetation into degraded (non-active) areas of cutover bog.
	Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog.
	Maintain the hydrology of the raised bog peat mass.
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

### North Antrim Coast SAC

Feature	Component Objective
Annual vegetation of drift lines	Maintain and enhance the extent of annual vegetation of drift lines subject to natural processes
	Allow the natural processes which determine the development and extent of annual vegetation of drift lines to operate appropriately
	Maintain and enhance, as appropriate, the species diversity within this community including the presence of notable species
Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )	To maintain or extend, as appropriate, the area of saltmarsh, subject to natural processes
	To maintain or enhance, as appropriate, the composition of the saltmarsh communities
	To maintain transitions between saltmarsh communities and to other adjoining habitats
	To permit the continued operation of formative and controlling natural processes acting on the saltmarsh communities
Fixed dunes with	Maintain and expand the extent of existing species-rich fixed dune, SD8.

herbaceous vegetation (grey dunes)	Maintain and enhance species diversity within the SD8 community including the presence of notable species.
	Maintain the diversity and quality of habitats associated with the fixed dunes, e.g. neutral grasslands, scrub, especially where these exhibit natural transition to fixed dune vegetation.
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Maintain and enhance the extent of white dunes subject to natural processes
	Allow the natural processes which determine the development and extent of white dunes to operate appropriately
	Maintain and enhance, as appropriate, the species diversity within this community
Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe)	Maintain and expand the extent of existing species-rich dry calcareous grasslands (CG10).
	Maintain and enhance species diversity within the CG10 community including the presence of notable species.
	Seek nature conservation management over suitable areas immediately outside the cSAC where there is possibility of restoring calcareous grassland
	Maintain the diversity and quality of habitats associated with the calcareous grassland, e.g. acid grasslands, wet heath, scrub, especially where these exhibit natural transition to calcareous grassland.
Vegetated sea cliffs of the Atlantic and Baltic coasts	Maintain the extent of vegetated sea cliff subject to natural processes
	Allow the natural processes which determine the development and extent of vegetated sea cliffs to operate appropriately
	Maintain and enhance, as appropriate, range of maritime rock crevice and cliff ledge communities
	Maintain and enhance, as appropriate, range of sea-bird cliff communities
	Maintain and enhance, as appropriate, range of maritime grassland communities
	Maintain and enhance, as appropriate, range of maritime heath communities
	Maintain and enhance, as appropriate, range of transitions and other communities
	No increase in status of non-native species, undesirable invasive species and species not characteristic of typical communities
	Maintain and enhance, as appropriate, status of rare and notable species
	Monitor cliff top or near cliff management activities to ensure they do not lead to loss or enrichment of sea cliff associated communities
Vertigo angustior	To maintain (and if feasible enhance) population numbers and distribution *
	To maintain (and if feasible enhance) the extent and quality (composition and structure) of suitable snail habitat, particularly the fenny grassland

### Rathlin Island SPA

Feature	Component Objective
Peregrine Falcon breeding population	No significant decrease in population against national trends, caused by on-site factors
Guillemot breeding population	No significant decrease in population against national trends, caused by on-site factors
Razorbill breeding population	No significant decrease in population against national trends, caused by on-site factors
Fulmar breeding population	No significant decrease in population against national trends, caused by on-site factors

Common Gull breeding population	No significant decrease in population against national trends, caused by on-site factors
Lesser Black-backed Gull breeding population	No significant decrease in population against national trends, caused by on-site factors
Herring Gull breeding population	No significant decrease in population against national trends, caused by on-site factors
Kittiwake breeding population	No significant decrease in population against national trends, caused by on-site factors
Puffin breeding population	No significant decrease in population against national trends, caused by on-site factors
Seabird Assemblage breeding population	No significant decrease in population against national trends, caused by on-site factors
Seabird Assemblage breeding population	Maintain species diversity contributing to the breeding seabird assemblage
Habitat	To maintain or enhance the area of natural and semi-natural habitats potentially usable by Feature bird species subject to natural processes

### Rathlin Island SAC

Feature	Component Objective
Reefs	Maintain and enhance, as appropriate the extent of the reefs
	Allow the natural processes which determine the development, structure, function and extent of the reefs, to operate appropriately
	Maintain and enhance, as appropriate, the species diversity within this habitat.

Feature	Component Objective
Submerged or partially submerged sea caves	Maintain and enhance, as appropriate the extent of the submerged or partially submerged sea caves
	Allow the natural processes which determine the development, structure, function and extent of the submerged or partially submerged sea caves, to operate appropriately
	Maintain and enhance, as appropriate, the species diversity within this habitat.
Vegetated sea cliffs of the Atlantic and Baltic coasts	Maintain the extent of vegetated sea cliff subject to natural processes
	Allow the natural processes which determine the development and extent of vegetated sea cliffs to operate appropriately
	Maintain and enhance, as appropriate, range of maritime rock crevice and cliff ledge communities
	Maintain and enhance, as appropriate, range of sea-bird cliff communities
	Maintain and enhance, as appropriate, range of maritime grassland communities



	Maintain and enhance, as appropriate, range of maritime heath communities
	Maintain and enhance, as appropriate, range of transitions and other communities
	No increase in status of non-native species, undesirable invasive species and species not characteristic of typical communities
	Maintain and enhance, as appropriate, status of rare and notable species

Feature	Component Objective
Vegetated sea cliffs of the Atlantic and Baltic coasts (cont.)	Monitor cliff top or near cliff management activities to ensure they do not lead to loss or enrichment of sea cliff associated communities
Annual vegetation of drift lines	Maintain and enhance the extent of annual vegetation of drift lines subject to natural processes
	Allow the natural processes which determine the development and extent of annual vegetation of drift lines to operate appropriately
	Maintain and enhance, as appropriate, the species diversity within this community including the presence of notable species
Sandbanks which are slightly covered by sea water	Allow the natural processes which determine the development, structure and extent of sandbanks which are slightly covered by sea water all the time, to operate appropriately
	Maintain and enhance, as appropriate, the species diversity within this habitat.
	Maintain the extent and volume of sandbanks which are slightly covered by sea water all the time, subject to natural processes.

### River Foyle and Tributaries SAC

Feature	Objective
<i>Atlantic Salmon</i>	Maintain and if possible expand existing population numbers and distribution (preferably through natural recruitment), and improve age structure of population.
<i>Salmo salar</i>	Maintain and if possible enhance the extent and quality of suitable Salmon habitat - particularly the chemical and biological quality of the water and the condition of the river channel and substrate.
<i>Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation</i>	Maintain and if possible enhance extent and composition of community.
	Improve water quality
	Improve channel substrate quality by reducing siltation.
	Maintain and if feasible enhance the river morphology
<i>Otter</i>	Maintain and if possible increase population numbers and distribution.
<i>Lutra lutra</i>	Maintain the extent and quality of suitable Otter habitat, in particular the chemical and biological quality of the water and all associated wetland habitats

**River Faughan and Tributaries SAC**

<b>Feature</b>	<b>Objective</b>
<i>Atlantic Salmon</i>	Maintain and if possible expand existing population numbers and distribution (preferably through natural recruitment), and improve age structure of population.
Salmo salar	Maintain and if possible enhance the extent and quality of suitable Salmon habitat - particularly the chemical and biological quality of the water and the condition of the river channel and substrate.
Old Sessile Oak Woodlands with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	Maintain and where feasible <u>expand</u> the extent of existing oak woodland but not at the expense of other SAC (ABC) features. (There are areas of degraded heath, wetland and damp grassland which have the potential to develop into Oak woodland)
	Maintain and enhance Oak woodland species diversity and structural diversity.
	Maintain the diversity and quality of habitats associated with the Oak woodland, e.g. fen, swamp, grasslands, scrub, especially where these exhibit natural transition to Oak woodland
	Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.
	Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.
<i>Otter</i>	Maintain and if possible increase population numbers and distribution.
Lutra lutra	Maintain the extent and quality of suitable Otter habitat, in particular the chemical and biological quality of the water and all associated wetland habitats

**River Roe and Tributaries SAC**

<b>Feature</b>	<b>Objective</b>
<i>Atlantic Salmon</i>	Maintain and if possible expand existing population numbers and distribution (preferably through natural recruitment), and improve age structure of population.
Salmo salar	Maintain and if possible enhance the extent and quality of suitable Salmon habitat - particularly the chemical and biological quality of the water and the condition of the river channel and substrate.
<i>Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation</i>	Maintain and if possible enhance extent and composition of community.
	Improve water quality
	Improve channel substrate quality by reducing siltation.
	Maintain and if feasible enhance the river morphology
Old Sessile Oak Woodlands with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	Maintain and where feasible <u>expand</u> the extent of existing oak woodland but not at the expense of other SAC (ABC) features. (There are areas of degraded heath, wetland and damp grassland which have the potential to develop into Oak woodland)
	Maintain and enhance Oak woodland species diversity and structural diversity.
	Maintain the diversity and quality of habitats associated with the Oak woodland, e.g. fen, swamp, grasslands, scrub, especially where these exhibit natural transition to Oak woodland

	Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.
	Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.
<i>Otter</i>	Maintain and if possible increase population numbers and distribution.
Lutra lutra	Maintain the extent and quality of suitable Otter habitat, in particular the chemical and biological quality of the water and all associated wetland habitats

### Sheep Island SPA

Feature	Component Objective
Cormorant breeding population	No significant decrease in breeding population against national trends, caused by on-site factors
Cormorant breeding population	Fledging success
Habitat extent	To maintain or enhance the area of natural and semi-natural habitats potentially usable by Feature bird species, subject to natural processes.

### Wolf Island Bog SAC

Feature	Component Objective
Active raised bogs	Maintain the extent of intact lowland raised bog and actively regenerating raised bog vegetation.
	Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species.
	Seek to expand the extent of actively regenerating bog vegetation into areas of degraded (non-active) areas of cutover bog.
	Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog.
	Maintain the hydrology of the raised bog peat mass.
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

## Appendix 2: Screening Assessment Forms

### Antrim Hills SPA

#### Ecological Connectivity to NAP:

Over half of the Antrim Hills SPA is within the NAP area. The principle selection features for the Antrim Hills SPA are breeding populations of Hen Harrier, *Circus cyaneus* and Merlin *Falco columbarius*, there is a potential for these birds of prey to utilize areas of the NAP for foraging. A number of rivers flow through the NAP which originate in Antrim Hills SPA.

#### Infrastructural or aerial connectivity to NAP:

Antrim Hills SPA occurs within the Moyle District Council of the NAP. Antrim Hills SPA is structurally linked to the NAP through water abstraction activities for drinking water in the River Bush which originates in the Antrim Hills SPA.

#### Sensitivities of European Features to NAP connectivity and activities:

Breeding populations of Hen Harrier, *Circus cyaneus* and Merlin *Falco columbarius* are the principle selection features of Antrim Hills as a SPA. The conservation objectives for the site are to maintain each feature in favorable condition (including measurements of fledgling success and population numbers).

Aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from agricultural, employment or industrial development zonings in the NAP area have the potential to indirectly affect Antrim Hills SPA leading to eutrophication and soil acidification.

Current threats to the Antrim Hill SPA include peat-cutting, grouse management, heavy grazing, excessive burning, wind farm development and inappropriate management of forestry plantations. The Northern Ireland Species Action Plan for Hen Harrier (NIEA 2005a) identified that the current factors affecting the population in Northern Ireland included agricultural reclamation; over grazing; disturbance; forestry management; persecution; and wind farm developments.

These factors could occur in the NAP area and there is thus a potential for the loss of foraging habitat, disturbance to nest and roosting sites and reduction or fragmentation of habitat availability for Hen Harrier and Merlin.

#### Potential for Cumulative Impacts:

Development activities associated with the Northern Area Plan and Belfast Metropolitan Area Plan may lead to cumulative effects through:

- Cumulative disturbance to Merlin and Hen Harrier populations from increased lighting, noise and physical developments.
- Cumulative aerial depositions leading to increased eutrophication and soil acidification.

#### Screening conclusion:

Merlin and Hen Harrier utilize the NAP area for foraging; there is a potential risk for activities in NAP to result in habitat reduction or fragmentation. Using the precautionary principle applied during screening it was not possible to objectively show that there would be no likely significant effects on the integrity of Antrim Hills SPA and an Appropriate Assessment will be carried out.

### Banagher Glen SAC

#### Ecological Connectivity to NAP:

Banagher Glen SAC is situated entirely within the Limivady Borough Council Area resulting in a direct linkage to the NAP.

Banagher Glen is ecologically linked to NAP as it is connected to other river systems namely; River Roe and Tributaries SAC and Lough Foyle.

**Infrastructural or aerial connectivity to NAP:**

Banagher Glen SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection features for Banagher Glen SAC are Old Sessile Oak Woods with *Ilex* and *Blechnum* and Tilio-Acerion forests of slopes, screes and ravines. The conservation objectives for the site are to maintain in favourable condition and where feasible expand the extent of existing Oak/Ash woodland but not at the expense of other SAC (ABC) features and maintain and enhance Oak/Ash woodland species diversity and structural diversity.

There is a potential for polluting aerial deposition from industrial emissions on the vegetative community of Banagher Glen SAC. Industrial aerial emissions leading to increased eutrophication and soil acidification, have the potential to damage sensitive woodland plant communities.

Additional activities that may have an adverse effect on Banagher Glen SAC include heavy grazing; woodland clearance and felling; landslides and erosion associated with nearby quarrying; invasive species; fly-tipping and changes to surrounding land use.

**Potential for Cumulative Impacts:**

Development activities arising from the NAP and Magherafelt Area Plan 2015, may lead to cumulative effects through:

- Cumulative aerial depositions leading to increased eutrophication and soil acidification from industrial developments.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there may be a potential for likely significant effects on the European selection features of the site from aerial deposition from economic development zonings in the NAP and cumulatively from the Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

**Bann Estuary SAC**

**Ecological Connectivity to NAP:**

Bann Estuary is located entirely within the Coleraine Borough Council area resulting in a direct linkage with the NAP.

The site is ecologically linked to the plan through river corridors that flow into the Bann Estuary.

**Infrastructural or aerial connectivity to NAP:**

The Bann Estuary SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The primary selection features for the Bann Estuary are, Atlantic salt meadows (*Glauco-Puccinellietalia maritima*), Embryonic shifting dunes, Fixed dunes with herbaceous vegetation ("grey dunes") and Shifting dunes along the shoreline with *Ammophila arenaria*.

Bann estuary SAC is sensitive to tourism development pressures and human recreational activities such as vehicular, boating and expanding path networks in close proximity to and within the SAC. These activities may cause bank erosion, destabilising of dunes, disturbance and mortality of bird populations. Tourist pressures, including vehicle access to Portstewart beach, have locally increased dune erosion and beach compaction (JNCC 2011). Further development associated with the expansion of Portstewart and expansion and management of Portstewart Golf Course may lead to loss of desirable habitat on the site from dune and beach sand removal.

<p><b>Potential for Cumulative Impacts:</b> Development activities arising from NAP in combination with Regional Development Strategy may lead to cumulative effects through:</p> <ul style="list-style-type: none"> <li>• Additional built development.</li> <li>• Additional Infrastructural Requirements.</li> </ul>
<p><b>Screening conclusion:</b> Under the precautionary methodology utilized in the screening it was concluded that built development associated with housing in the NAP are likely to have a potential significant adverse effect on the European selection features of the Bann Estuary SAC. Therefore an Appropriate Assessment is required.</p>

### Binevenagh SAC

<p><b>Ecological Connectivity to NAP:</b> Binevenagh is situated entirely within the Limivady Borough Council area of the NAP and therefore has a direct link to the plan.</p>
<p><b>Infrastructural or aerial connectivity to NAP:</b> The Binevenagh SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.</p>
<p><b>Sensitivities of European Features to NAP connectivity and activities:</b> The site selection features for Binevenagh are calcareous rocky slopes with chasmophytic vegetation, species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas and Calcareous and calcshist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>).</p> <p>There is a potential for polluting aerial deposition from agricultural and industrial emissions on the vegetative community of Binevenagh SAC. Research indicates that the application of any inorganic fertiliser to grassland leads to a reduction in species diversity and loss of important grassland fungi through nutrient enrichment. The grasslands at Binevenagh are dependent upon traditional grazing with no use of agrochemicals (JNCC 2011).</p>
<p><b>Potential for Cumulative Impacts:</b> Cumulative aerial pollution and associated atmospheric deposition of nitrogen and sulphur compounds arising from agricultural, employment or industrial development zonings in NAP plan.</p>
<p><b>Screening conclusion:</b> Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, from aerial deposition from economic development zonings in the NAP and cumulatively from the Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.</p>

### Ballynahone Bog SAC

<p><b>Ecological Connectivity to NAP:</b> Ballynahone Bog is not ecologically connected to the NAP.</p>
<p><b>Infrastructural or aerial connectivity to NAP:</b> Ballynahone Bog is located outside the NAP plan boundary however is situated with 15km of an economic development zoning within the Plan and therefore linked to it by the potential for aerial deposition.</p>
<p><b>Sensitivities of European Features to NAP connectivity and activities:</b> The principle selection feature for Ballynahone Bog is Active Raised Bog.</p> <p>Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In</p>

the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Ballynahone Bog arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified a potential for in combination effects from mineral extraction within the Magherafelt Area Plan 2015.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential for likely significant adverse effects on the European selection features of the site, from mineral extraction and aerial deposition from policies in the NAP and cumulatively from the Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

**Carn-Glenshane Pass SAC**

**Ecological Connectivity to NAP:**

Carn-Glenshane Pass SAC is located partly within the NAP Plan boundary and Magherafelt Plan boundary and therefore has a direct link to the NAP.

**Infrastructural or aerial connectivity to NAP:**

The SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection feature for Carn-Glenshane Pass is Active Raised Bog.

Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects

due to aerial deposition on Carn-Glenshane Pass arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified a potential for in combination effects from mineral extraction within the Magherafelt Area Plan 2015.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential for likely significant adverse effects on the European selection features of the site, from mineral extraction and aerial deposition from economic development zonings in the NAP and cumulatively from the Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

**Dead Island Bog SAC**

**Ecological Connectivity to NAP:**

The site is not ecologically connected to the NAP.

**Infrastructural or aerial connectivity to NAP:**

Dead Island Bog SAC is located outside the NAP plan boundary however is situated with 15km of an economic development zoning within the Plan and therefore linked to it by the potential for aerial pollution

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection feature for Dead Island Bog is Active Raised Bog.

Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Dead Island Bog arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Magherafelt Area Plan 2015.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site from mineral extraction and aerial deposition, from economic development zonings in the NAP and cumulatively from the Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.



## Garry Bog SAC and Ramsar

### **Ecological Connectivity to NAP:**

Garry Bog SAC is located entirely within the NAP Plan boundary therefore it has a direct link to the NAP. It lies to the west of the Bush River directly north of Ballymoney and represents one of the largest remaining areas of uncut lowland active raised bog in NI.

### **Infrastructural or aerial connectivity to NAP:**

The SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

### **Sensitivities of European Features to NAP connectivity and activities:**

The principle selection feature for Dead Island Bog is Active Raised Bog.

Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites.

### **Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Garry Bog arising from development activities in the Northern Area Plan 2016, Ballymena Area Plan 2001 and Magherafelt Area Plan 2015. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Northern Area Plan.

### **Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site from mineral extraction and aerial deposition, from economic development zonings in the NAP and cumulatively from the Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

## Main Valley Bogs SAC

### **Ecological Connectivity to NAP:**

The majority of Main Valley Bogs SAC is located within the NAP plan boundary and therefore has a direct link to the Plan.

### **Infrastructural or aerial connectivity to NAP:**

The SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

### **Sensitivities of European Features to NAP connectivity and activities:**

The principle selection feature for Main Valley Bogs is Active Raised Bog.

Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In

the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

The NAP designates a zone for industry within Ballymoney Town which is approx 8km from the European site, economic development zoning BYI 03. BYI 03 is zoned for proposed industrial development that includes both general and more specialised industry. Certain proposals in this location could increase aerial emissions which could adversely affect the selection features of Main Valley Bogs SAC.

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to guide applications for mineral extraction in or adjacent to designated sites.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Main Valley Bogs SAC arising from development activities in the Northern Area Plan 2016, Antrim Area Plan 2001 and Ballymena Area Plan 2001. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Northern Area Plan.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, from mineral extraction and aerial deposition from economic development zonings in the NAP and cumulatively from the Antrim Area Plan 2001 and Ballymena Area Plan 2001. Therefore an Appropriate Assessment will be carried out.

**Wolf Island Bog SAC**

**Ecological Connectivity to NAP:**

Wolf Island Bog is not ecologically connected to NAP.

**Infrastructural or aerial connectivity to NAP:**

Wolf Island Bog SAC is located outside the NAP plan boundary however is situated with 15km of an economic development zoning within the Plan and therefore linked to it by the potential for aerial pollution.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection feature for Wolf Island Bog is Active Raised Bog.

Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

Within the Draft Plan published in 2005, all European and Ramsar sites were included within Areas of Constraint on Mineral Development (AOCMD) along with some adjacent lands. However the Department decided to remove a number of policies from the Plan in 2011 which included designation COU 16: Areas of Constraint on Mineral development. Therefore there will be no designation and associated policy in the Plan to

guide applications for mineral extraction in or adjacent to designated sites.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Wolf Island Bog arising from development activities in the Northern Area Plan 2016 and Magherafelt Area Plan 2015. The screening also identified potential indirect and in combination effects from mineral extraction activities within the Northern Area Plan.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, from mineral extraction and aerial deposition from economic development zonings in the NAP and cumulatively from the Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

**Breen Wood SAC**

**Ecological Connectivity to NAP:**

Breen Wood is located entirely within the NAP and therefore has a direct link to it.

**Infrastructural or aerial connectivity to NAP:**

The SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The SAC selection features for Breen Wood are; Old sessile oak woods with *Ilex* and *Beechnut* in the British Isles and Bog Woodland.

Woodlands can be indirectly affected by Nitrogen deposition through eutrophication and acidification, those surrounded by agricultural land and roads are at greater risk from invading plant species leading to changes in composition of ground flora, due to the greater availability of a seed source for such plants. Woodlands near intensive livestock units are particularly at risk from ammonia deposition, especially those growing on acid soils, which can be toxic to trees and ground flora (Krupp 2003).

The NAP does not zone any areas for special industrial uses within 15km of the European site that would be subject to control under the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Such developments could result in adverse aerial emissions. Economic Development zoning BYI 03 has been designated for proposed economic development that includes both general and more specialised industry in the key site requirements. Certain proposals in this location could increase aerial emissions; however as this zoning is approx 17 km from the European site it is unlikely to have any significant adverse effects due to distance from the site.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Breen Wood arising from development activities in the Northern Area Plan 2016, Antrim Area Plan 2001, and Larne Area Plan 2010.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, from aerial pollution from economic development zonings in the NAP and cumulatively from the Antrim Area Plan 2001 and the Lane Area Plan 2010. Therefore an Appropriate Assessment will be carried out.

**Lough Neagh and Lough Beg SPA and Ramsar**

**Ecological Connectivity to NAP:**

Lough Neagh and Lough Beg SPA and Ramsar are ecologically connected to the NAP by hydrological pathways.

**Infrastructural or aerial connectivity to NAP:**

The SPA is infrastructural connected to NAP through water abstraction and the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection features for Lough Neagh and Lough Beg SPA and Ramsar are various over-wintering and migratory waterfowl, breeding birds and habitat. The main habitats within the SPA and Ramsar are open water with beds of submerged aquatic vegetation, species rich wet grassland, reed bed, islands swamp, fen and carr woodland.

The vulnerability section of the Natura 2000 data form and NIEA conservation objectives record that the European site could potentially be adversely affected by activities which include boating activity (recreational more than commercial), drainage, sand dredging, fishing (recreational and commercial), water abstraction and invasive species. The site has been vulnerable in the past to severe eutrophication, changes in agricultural land use (both intensification and under management), and the introduction of invasive non-native species.

**Potential for Cumulative Impacts:**

Plan proposals, alone, cumulatively or in combination with proposals from NAP and other District Council areas may indirectly result in changes in water quality as a result of increased sewerage and storm-water run-off. Development proposals or associated policies within, adjacent or which are linked to watercourses associated with Lough Neagh and Lough Beg SPA and Ramsar could result in habitat destruction.

The screening identified that there was a potential for in combination eutrophication and acidification effects from aerial pollution, arising from development activities in the Northern Area Plan 2016, Magherafelt Area Plan 2015, Antrim Area Plan 1984-2001; Armagh Area Plan 2004; Craigavon Area Plan 2010; Craigavon Town Centre Boundaries and Retail Designation Plan 2010; Cookstown Area Plan 2010; Dungannon and South Tyrone Area Plan 2010, Banbridge Newry and Mourne Area Plan 2015 and the Belfast Metropolitan Area Plan 2015.

As Lough Neagh provides water for approximately one third of the population of Northern Ireland there will be cumulative abstraction pressures associated with Development Plans throughout Northern Ireland and Water Resource Plans and associated capital works.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, from policies in the Northern Area Plan and cumulatively from Magherafelt Area Plan 2015, Antrim Area Plan 1984-2001; Armagh Area Plan 2004; Craigavon Area Plan 2010; Craigavon Town Centre Boundaries and Retail Designation Plan 2010; Cookstown Area Plan 2010; Dungannon and South Tyrone Area Plan 2010, Banbridge Newry and Mourne Area Plan 2015 and the Belfast Metropolitan Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

## Garron Plateau SAC and Ramsar

### Ecological Connectivity to NAP:

Approximately half of Garron Plateau SAC and Ramsar is located within the NAP and therefore has a direct link to it.

### Infrastructural or aerial connectivity to NAP:

The SAC is connected to NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

### Sensitivities of European Features to NAP connectivity and activities:

The SAC selection features for Garron Plateau are, active blanket bog, alkaline Fen (upland), marsh saxifrage *Saxifraga hirculus*, oligotrophic to mesotrophic upland isoetid lake, Northern Atlantic wet heath with *Erica tetralix*, naturally dystrophic lakes and pools and transition mires and quaking bogs.

The NIEA conservation objectives state that the site could potentially be damaged by application of fertiliser, peat cutting, drainage, afforestation and changes in surrounding land use. Activities occurring outside the site (e.g. agricultural intensification, drainage works, and development) may be detrimental to the site through remote effects.

Bogs are highly sensitive to nitrogen deposition, as they derive all their nutrients from the atmosphere. In the UK around 50% of bog Broad Habitat exceeds the critical load for nutrient nitrogen (using 2006-2008 deposition data). Exceedance of the nitrogen critical load for bogs leads to increased growth of more competitive nitrogen-loving species (APIS 2014). Aerial pollution and associated atmospheric deposition arising from policies within the NAP area have the potential to damage sensitive bogland plant communities; this includes potential deposition onto habitats whose deposition levels currently exceed critical thresholds.

There has been past consideration of the establishment of a further artificial reservoir on the Garron Plateau in the Lower Inver catchment, this could have an adverse effect on the SAC habitat features.

### Potential for Cumulative Impacts:

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Garron Plateau arising from development activities in the Northern Area Plan 2016, Antrim Area Plan 2001, Ballymena Area Plan 2001, and Larne Area Plan 2010. Therefore an Appropriate Assessment will be required.

### Screening conclusion:

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, from aerial pollution from economic development zonings in the NAP and cumulatively from Antrim Area Plan 2001, Ballymena Area Plan 2001, and Larne Area Plan 2010. Therefore an Appropriate Assessment will be carried out.

## River Faughan and Tributaries SAC

### Ecological Connectivity to NAP:

The River Faughan and Tributaries SAC is ecologically connected to the NAP through hydrological pathways.

### Infrastructural or aerial connectivity to NAP:

The River Faughan and Tributaries SAC is located outside the NAP but is situated within 1.6km of

the nearest Plan Economic Development zoning and flows into Lough Foyle SPA of which the majority is located within the NAP. It is therefore linked to the plan through the potential for aerial pollution.

**Sensitivities of European Features to NAP connectivity and activities:**

The SAC selection features for River Faughan and Tributaries are Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, Annex II species Atlantic Salmon *Salmo salar* Annex II species Otter *Lutra lutra*. The conservation objectives for the site are to maintain each feature in favourable condition.

Industrial aerial emissions have the potential to damage old sessile oak woods with *Ilex* and *Blechnum*, a feature of the SAC and water quality, particularly in this case through run-off from surrounding countryside.

Water quality is probably the most important factor for the SAC selection features with both point and diffuse sources of pollution potentially damaging. Poor water quality and increased sedimentation can be significant influences on populations of *Salmo salar* and *Lutra lutra*, as well as altering the biological composition of the river system (JNCC 2011).

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on River Faughan and Tributaries arising from development activities in the Northern Area Plan 2016, Strabane Area Plan 2001, Derry Area Plan 2011 and Magherafelt Area Plan 2015.

**Screening conclusion:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, from aerial pollution from economic development zonings in the NAP and cumulatively from the Strabane Area Plan 2001, Derry Area Plan 2011 and Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

**Sheep Island SPA**

**Ecological Connectivity to NAP:**

Sheep island SPA is situated within the NAP plan boundary and therefore has a direct link to it. The principle selection feature for the site is breeding populations of Cormorant *Phalacrocorax carb* which may utilize other areas within the NAP for feeding.

**Infrastructural or aerial connectivity to NAP:**

The SPA is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection feature for Sheep Island SPA is breeding populations of Cormorant *Phalacrocorax carbo*. The conservation objectives for the feature species are; no significant decrease in breeding population against national trend and fledging success.

The Conservation Objectives report highlighted that the site is vulnerable to activities such as recreational boating activity which could lead to disturbance and potential for impact. Other recreational activities could also have adverse effects on the site however the inaccessible nature of the site makes this unlikely, commercial or recreational fishing may have an adverse impact on the

feature species due to competition for food, however the impacts are considered to be minimal.

While no significant threats have been identified, the Cormorant colony present on Sheep Island SPA could be at risk from a potential lack of available food, although a coastal site, this colony feeds primarily on inland rivers and large lakes (JNCC 2006). Developments within the plan area may have the potential to impact upon surrounding areas that are utilized by feature species.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition on Sheep Island arising from development activities in the Northern Area Plan 2016, Antrim Area Plan 2001, Ballymena Area Plan 2001, and Larne Area Plan 2010.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a potential likely significant adverse effect on the European selection features of the site, due to aerial pollution from economic development zonings in the NAP and cumulatively from the Antrim Area Plan 2001, Ballymena Area Plan 2001, and Larne Area Plan 2010. Therefore an Appropriate Assessment will be carried out.

**Lough Foyle SPA and Ramsar**

**Ecological Connectivity to NAP:**

A large section of Lough Foyle SPA and Ramsar is located within the NAP and therefore has a direct link to it. NAP is also hydrologically linked to the Lough Foyle via the Lough Foyle catchment area. This includes the River Roe and Tributaries which flows through the NAP and into Lough Foyle.

**Infrastructural or aerial connectivity to NAP:**

The SPA is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection features for Lough Foyle are Light-bellied Brent Goose, Whooper Swan, Bar-tailed Godwit and other over-wintering and migratory waterfowl, roost sites and habitat.

The Natura 2000 data form for Lough Foyle SPA records that the site is vulnerable to changes in surrounding land use, aquaculture, bait digging, wildfowling, system dynamics, water quality, power cables, dredging and commercial boating activity.

Development proposals or associated policies within, adjacent to, or which are linked to watercourses associated with Lough Foyle could result in habitat destruction, increased disturbance levels or could lead to an alteration to habitats within the SPA/ Ramsar. Developments associated with the plan area have the potential to impact upon the SPA/Ramsar and surrounding sea areas that are utilized by feature species in relation to disturbance, pollution incidents or competition for food sources caused by the promotion of additional sea traffic.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition and hydrological pathways on Lough Foyle SPA and Ramsar site from development activities in the NAP 2016, Strabane Area Plan 2001 and Derry Area Plan 2011.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern

Area Plan and cumulatively from the Strabane Area Plan 2001 and Derry Area Plan 2011. Therefore an Appropriate Assessment will be carried out.

### River Roe and Tributaries SAC

**Ecological Connectivity to NAP:**

River Roe is situated within the NAP and therefore directly connected to the Plan. It is also hydrologically connected to the NAP via the River Roe catchment area.

**Infrastructural or aerial connectivity to NAP:**

The SAC is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection features for the SAC are water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation, Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, Otter *Lutra lutra* and Atlantic salmon *Salmo salar*.

The vulnerability section of the JNCC site selection form records that the site is vulnerable to changes in water quality from point-source pollution from urban and industrial centres and farms and diffuse runoff of fertiliser from commercial conifer plantations and intensively farmed land, poor water quality and increased sedimentation can be significant influences on populations of *Salmo salar* and *Lutra lutra*, as well as altering the biological composition of the river system (JNCC 2011).

Rivers are particularly vulnerable to the effects of drainage, alterations to the water table, water-borne pollution and other developments within catchment areas. There are a number of development zones either in close proximity to, or infrastructurally connected to the River Roe and Tributaries that have the potential to interact with the SAC in terms of contributing to waste discharges. The settlement development limits for Limivady, Burnfoot and Dungiven are directly adjacent to River Roe and Tributaries SAC boundary.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition and water quality impacts to hydrological pathways associated with River Roe and Tributaries SAC from development activities in the Northern Area Plan 2016, Strabane Area Plan 2001, Derry Area Plan 2011 and Magherafelt Area Plan 2015.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern Area Plan and cumulatively from the Strabane Area Plan 2001, Derry Area Plan 2011 and Magherafelt Area Plan 2015. Therefore an Appropriate Assessment will be carried out.

### Magilligan SAC

**Ecological Connectivity to NAP:**

All of Magilligan SAC is located within the NAP and therefore has a direct link to it.

**Infrastructural or aerial connectivity to NAP:**

The SAC is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.



**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection features for Magilligan SAC are, Dunes with *Salix repens ssp. Argentea* (*Salicion arenariae*), embryonic shifting dunes, Fixed dunes with herbaceous vegetation (grey dunes), Humid dune slacks and Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). Annex 2 selection species include Marsh Fritillary Butterfly *Euphydryas* (*Eurodryas, Hypodryas*) *aurinia*, Otter *Lutra lutra* and Petalwort *Petalophyllum ralfsii*.

The NIEA conservation objectives form states that the site could potentially be damaged by grazing, recreation, changes to surrounding land use, military use and disruption to the natural sediment regime.

Aerial deposition from sources in the NAP may have the potential to damage sensitive plant communities within Magilligan SAC. Sand dune habitats are one of the most natural remaining vegetation types in the UK. Pressures threatening their existence include: sea-level rise, climate change, agricultural improvement, recreational use, lack of management, over-stabilisation and Nitrogen deposition. They are generally infertile and thus sensitive to Nitrogen deposition. The greatest impact from Nitrogen is likely to be on early succession communities which include many of the sand dune rare species (APIS 2014).

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in combination eutrophication and acidification effects due to aerial deposition from the Northern Area Plan 2016, Strabane Area Plan 2001 and Derry Area Plan 2011.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern Area Plan and cumulatively from the Strabane Area Plan 2001 and Derry Area Plan 2011. Therefore an Appropriate Assessment will be carried out.

**North Antrim Coast SAC**

**Ecological Connectivity to NAP:**

The North Antrim Coast SAC is located entirely within the NAP and is therefore directly linked to it.

**Infrastructural or aerial connectivity to NAP:**

The SAC is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle selection features for North Antrim Coast SAC are; Annual vegetation of drift lines, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), Fixed dunes with herbaceous vegetation (grey dunes), Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Species-rich *Nardus* grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe), Vegetated sea cliffs of the Atlantic and Baltic coasts and annex 2 species Narrow-mouthed whorl snail - *Vertigo angustior*.

The NIEA conservation objectives report and the vulnerability section of the JNCC data form notes that the site could potentially be adversely affected by changes to grazing patterns, removal of beach and dune sand, changes to surrounding land use, nutrient enrichment and recreational activities. The vulnerability section of the European data form does not list aerial pollution as a major threat to North Antrim Coast SAC however aerial pollution and associated atmospheric deposition arising

from the NAP area has the potential to lead to increased eutrophication and soil acidification in certain habitats.

Aerial deposition from sources in the NAP may have the potential to damage sensitive plant communities within North Antrim Coast SAC. Sand dune habitats are one of the most natural remaining vegetation types in the UK. Pressures threatening their existence include: sea-level rise, climate change, agricultural improvement, and recreational use, lack of management, over-stabilisation and Nitrogen deposition.

**Potential for Cumulative Impacts:**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the SAC.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern Area Plan 2016. Therefore an Appropriate Assessment will be carried out.

**Red Bay SCI**

**Ecological Connectivity to NAP:**

Red bay marine SCI is hydrologically connected to the NAP via the Glendun river which flows into the site from the Northern Area Plan.

**Infrastructural or aerial connectivity to NAP:**

The SCI is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The Red Bay County Antrim marine SCI has been designated for the habitat 'sandbanks which are slightly covered by seawater all the time', which is listed on Annex I of the Habitats Directive.

The vulnerability section of the JNCC data form states that the site selection feature could be adversely affected by towed mobile gear fishing and water quality issues emanating from both point and diffuse sources. The NIEA conservation objectives note that the European site could be adversely affected by activities which include coastal development, sewage discharge, marine traffic and fishing.

Housing and economic development zonings within the Plan area, either alone or in combination with other plans and programs outside of the Plan area have the potential to result in changes to water quality due to increased sewage and storm water run-off where there is insufficient waste water design capacity.

**Potential for Cumulative Impacts:**

The screening identified that there was a potential for in-combination eutrophication and acidification effects, increased boating activity and disturbance to habitats from the Larne Area plan 2010 and Belfast Metropolitan Area plan 2015.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern Area Plan and cumulatively from the Larne Area plan 2010 and Belfast Metropolitan Area plan 2015.

**Skerries and Causeway SCI**

**Ecological Connectivity to NAP:**

Skerries and Causeway is hydrologically linked to the NAP via the Bush River.

**Infrastructural or aerial connectivity to NAP:**

The SCI is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The primary selection features for Skerries and Causeway are; sandbanks which are slightly covered by sea water all the time, reefs and submerged or partially submerged sea caves. Annex 2 species Harbour porpoise *Phocoena phocoena* is also present as a qualifying feature but not a primary reason for selection of the site as a SCI.

The JNCC Natura 2000 data form records that the site will be adversely affected by activities including commercial fishing, diffuse pollution through river outflow; and harbour porpoise from loss of feeding grounds or seismic and sonar disturbance. The conservation objectives note that the European site could be adversely affected by activities which include aquaculture, agriculture and forestry operations, coastal and marine development and infrastructure maintenance, discharges of commercial effluent, disposal of dredge spoil, marine litter, research activities, marine traffic and aggregate and maerl extraction.

**Potential for Cumulative Impacts:**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the SCI.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern Area Plan.

**Rathlin Island SPA**

**Ecological Connectivity to NAP:**

Rathlin Island is ecologically connected to the NAP by the potential for SPA selection species to utilize other areas of the NAP for foraging.

**Infrastructural or aerial connectivity to NAP:**

The SAC is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The site regularly supports internationally important numbers of breeding and migratory birds. The principle selection features for the site are Annex 1 species Peregrine *Falco peregrinus*. Other qualifying features are Guillemot *Uria aalge*, Razorbill *Alca torda*, Black-legged Kittiwake - *Rissa tridactyla* and a seabird assemblage of international importance.

**Potential for Cumulative Impacts:**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the SAC.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern Area Plan

**Rathlin Island SAC**

**Ecological Connectivity to NAP:**

Rathlin Island is situated entirely within the NAP plan boundary and therefore has a direct link to it.

**Infrastructural or aerial connectivity to NAP:**

The SAC is connected to the NAP through the potential for aerial deposition from agricultural, development and economic development land use zonings.

**Sensitivities of European Features to NAP connectivity and activities:**

The principle SAC selection features for the site are reefs, vegetated sea cliffs of the Atlantic and Baltic Coasts and submerged or partially submerged sea caves. Other qualifying features present but not primary reasons for selection include sandbanks which are slightly covered by sea water all the time and annual vegetation of drift lines.

The vulnerability section of the JNCC Natura 2000 data form notes that there are potential adverse effects on the site from commercial fishing and habitat loss from recreational activities and manmade structures. However effects of these activities are thought to be minimal. The NIEA Conservation Objectives note that the site could be adversely affected by commercial fishing and harvesting of shellfish, inappropriate grazing, recreational activities and removal of beach sand and gravel.

**Potential for Cumulative Impacts:**

In-combination eutrophication and acidification effects from other plans and projects were considered at the screening stage. No other plans were found to be within 15km of the European site, due to this distance the effects of in-combination eutrophication and acidification will not have a significant effect on the SAC.

**Screening conclusion and finding of no significant impact statement:**

Under the precautionary methodology utilized in the screening it was concluded there is a likely significant adverse effect on the European selection features of the site from policies in the Northern Area Plan.

## Appendix 3: Maps

**Map1**  
**NAP Plan Boundary**

Coordinates: 291,039 , 420,769



Northern Area and  
Environment  
Agency

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**NAP HRA**

**Title:**  
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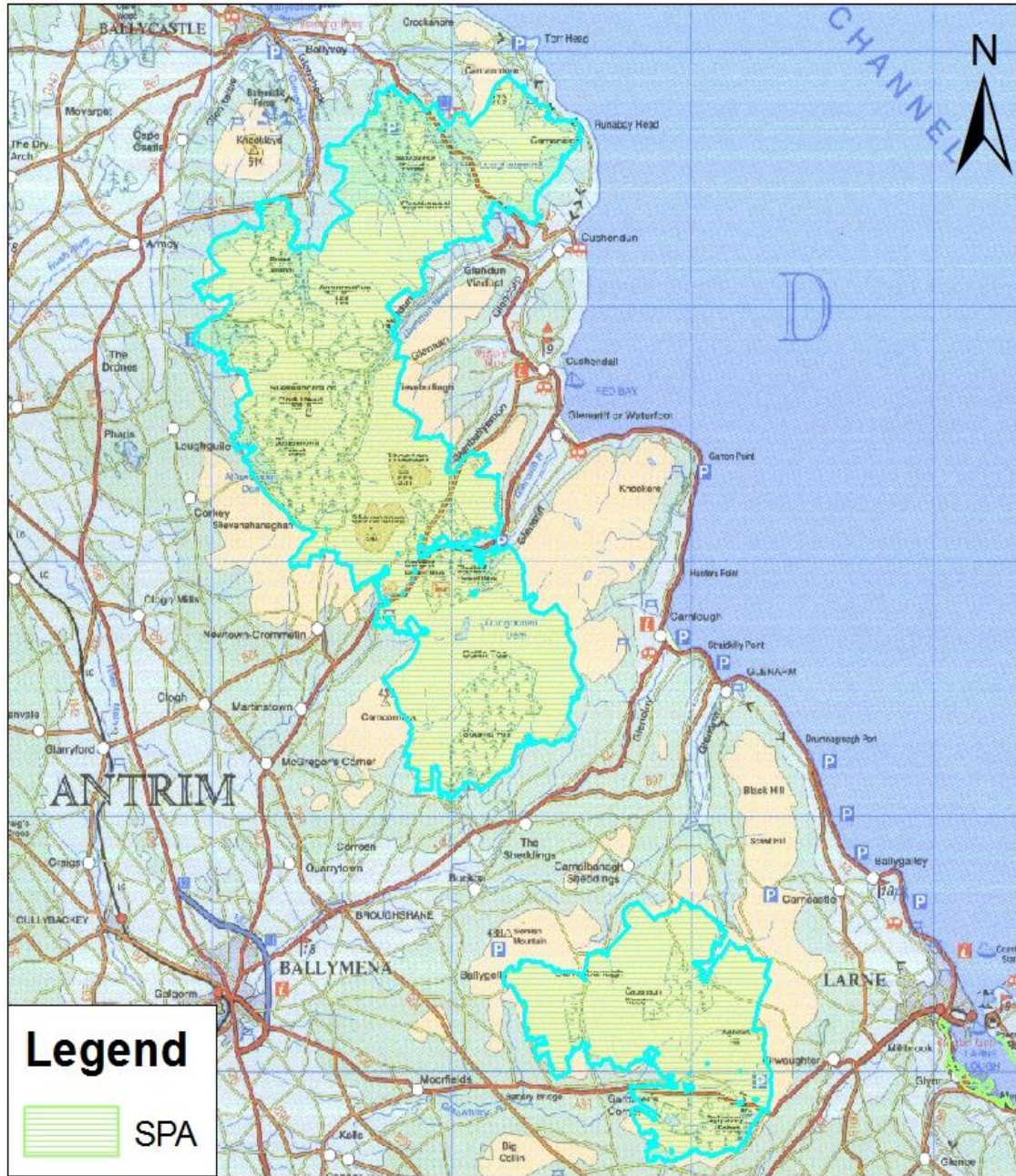
**Date: 06 June 2014**

**Description:**

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## Map 2 Antrim Hills SPA

Coordinates: 322,506 , 418,928



**Title:** NAP HRA  
**Scale:** 1:207,359

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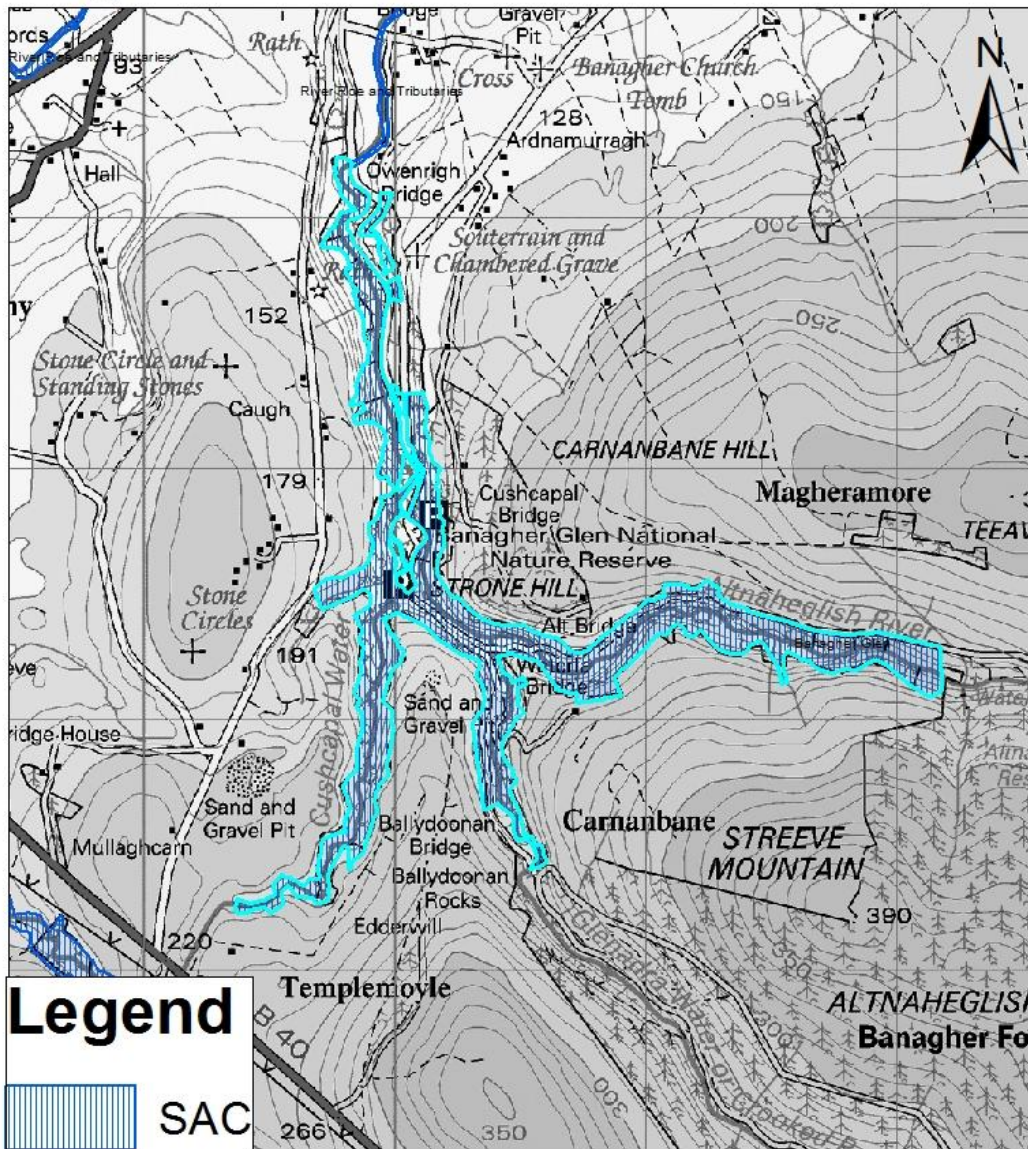
**Date:** 06 June 2014  
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### Map 3 Banagher Glen SAC

Coordinates: 267,499 , 404,557



Title: **NAP HRA**

Scale: **1:20,524**

Drawn by:

Date:

Description:

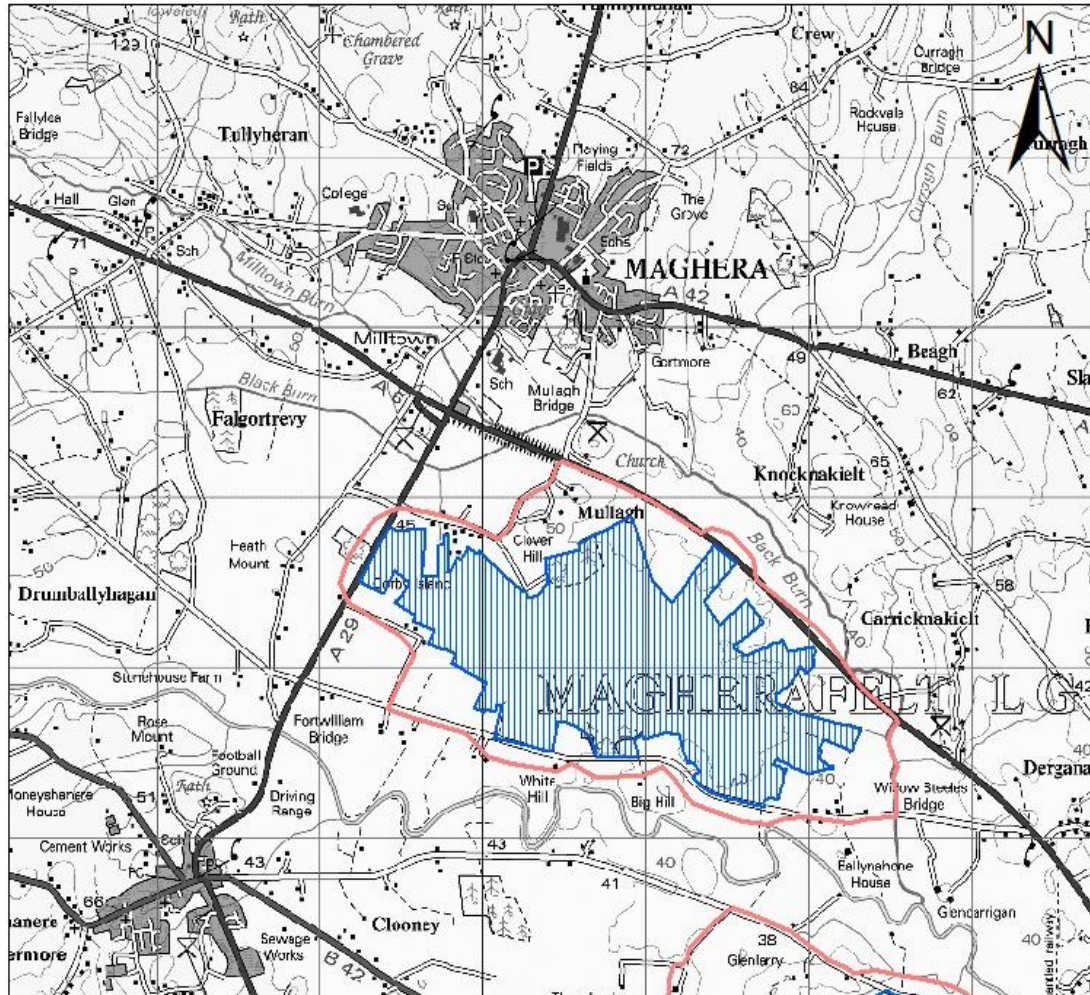
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# Map 4 Ballynahone Bog SAC

Coordinates: 285,425 , 398,978



**Legend**

- Consultation\_Zones
- SAC



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**NAP HRA**

**Title:**  
**Scale: 1:33,776**

**Drawn by:**

**Date:**

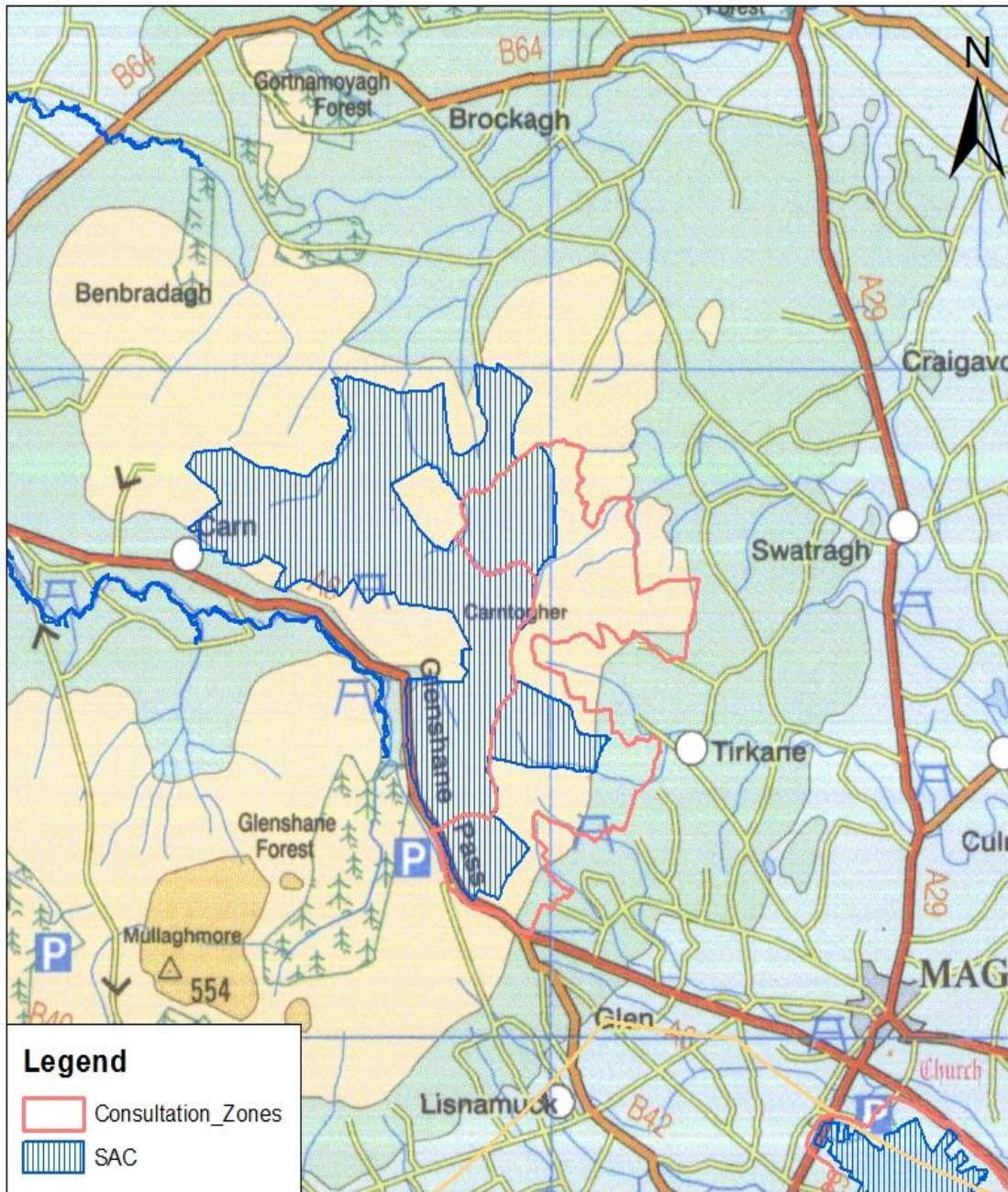
**Description:**

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# Map 5 Carn Glenshane Pass SAC

Coordinates: 279,319 , 406,610



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Title: **NAP HRA**

Scale: **1:80,000**

Drawn by:

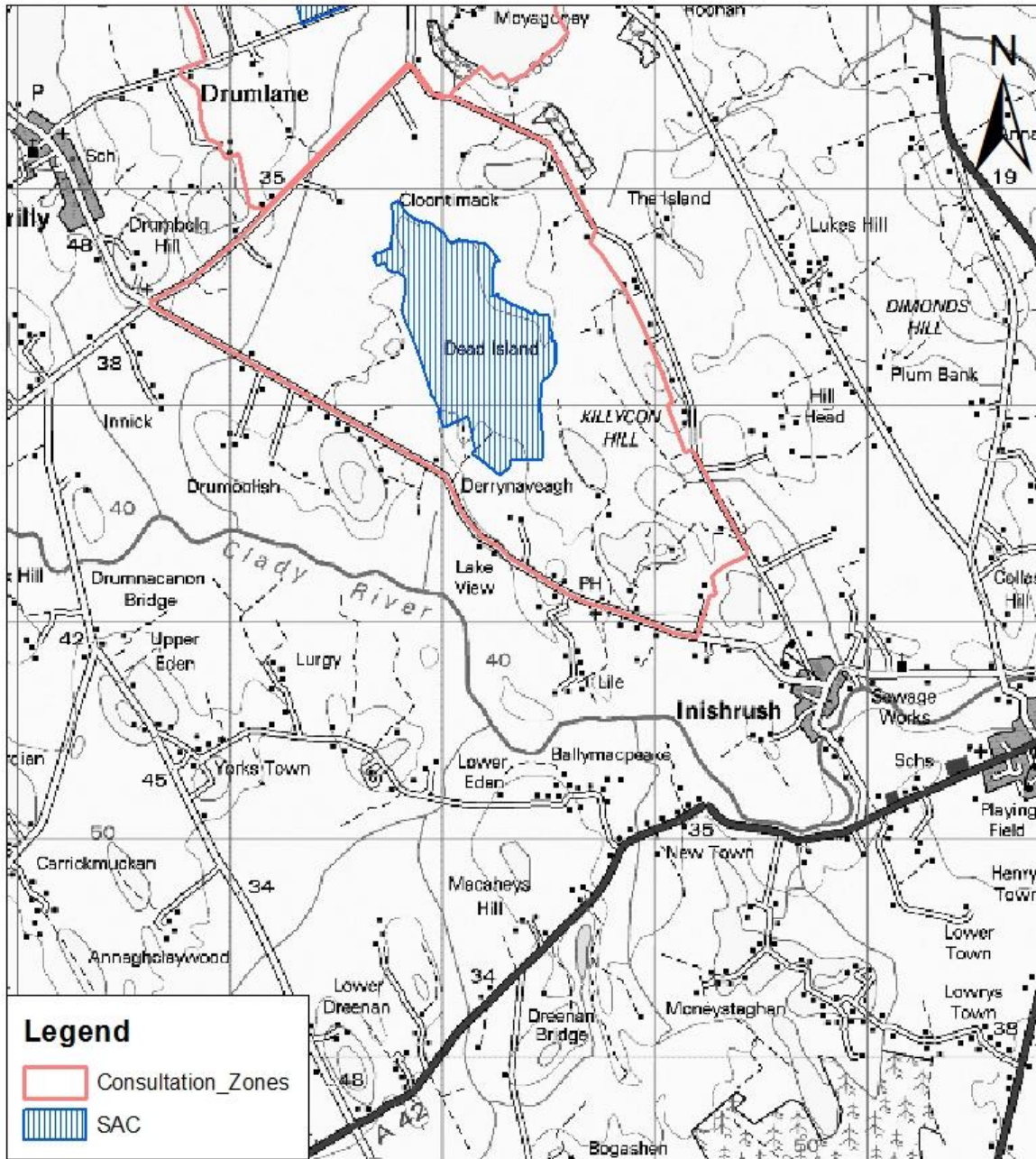
Date:

Description:

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## Map 6 Dead Island Bog SAC

Coordinates: 293,373 , 404,181



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### NAP HRA

Title:  
Scale: **1:24,000**

Drawn by:

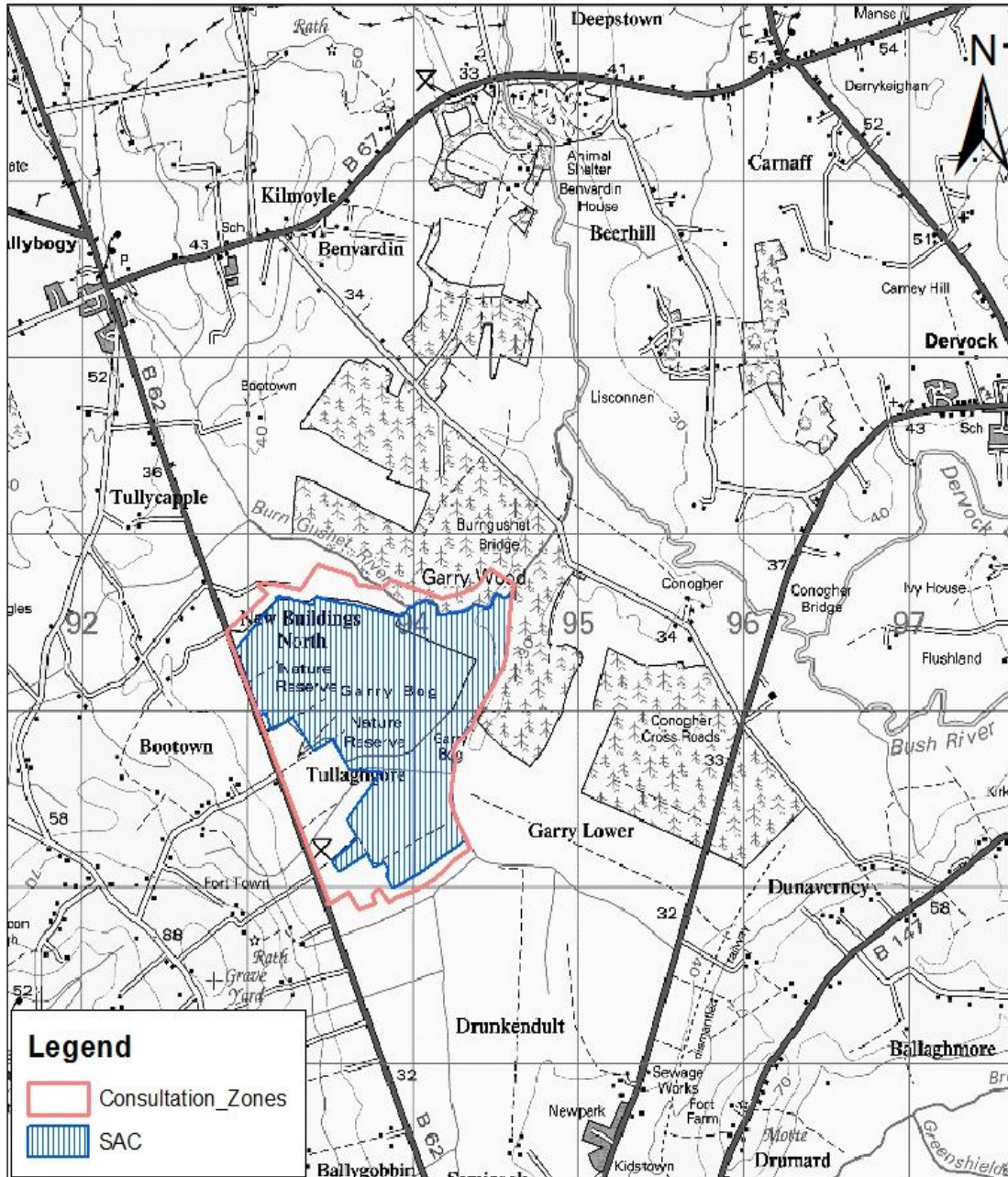
Date:

Description:

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# Map 7 Garry Bog SAC

Coordinates: 294,586 , 430,676



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**NAP HRA**

**Title:**  
**Scale: 1:30,000**

**Drawn by:**

**Date:**

**Description:**

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**Map 8**  
**Main Valley Bogs SAC**

Coordinates: 303,917 , 418,436



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**Drawn by:**

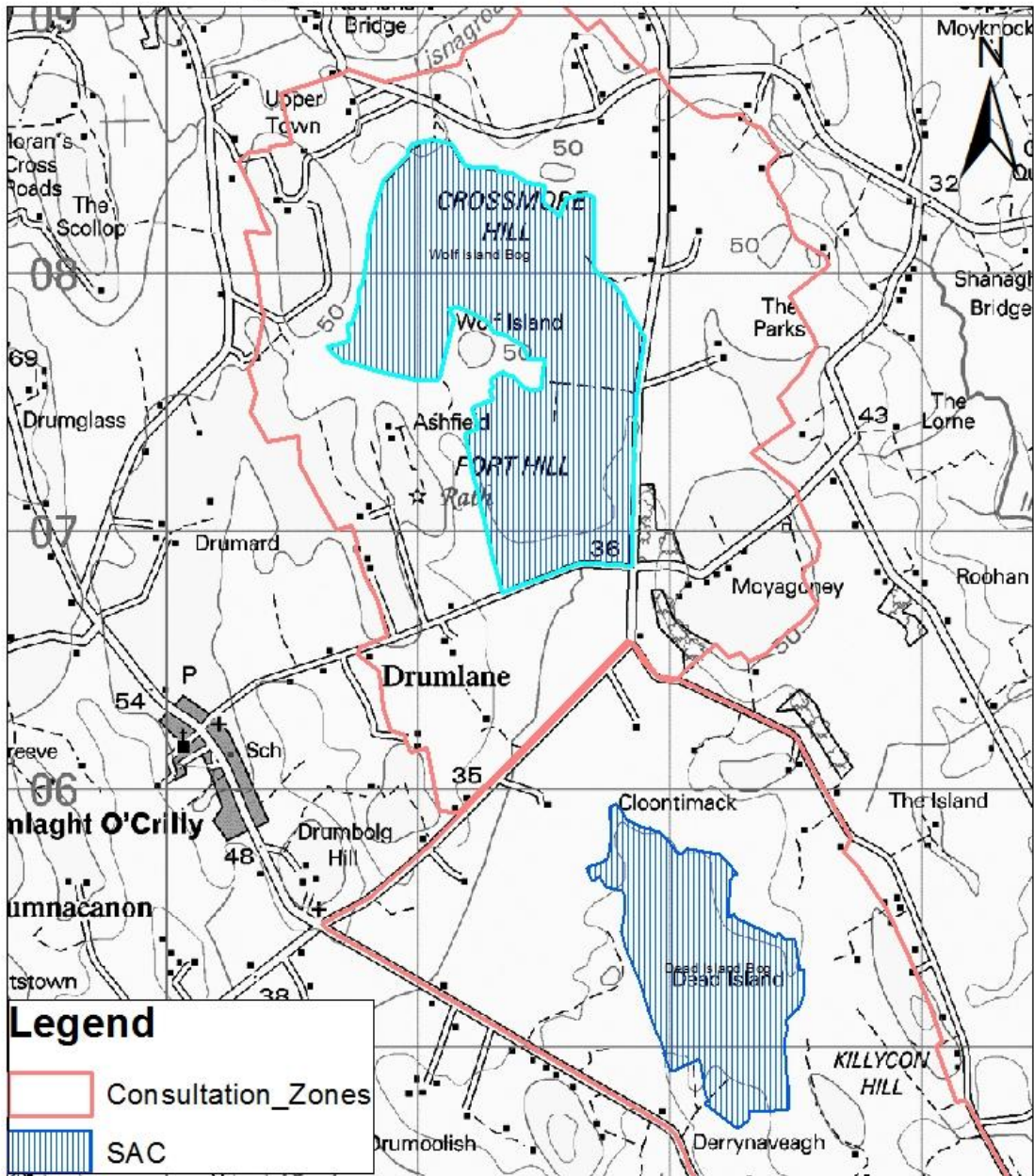
**Date:**

**Description:**

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## Map 9 Wolf Island Bog SAC

Coordinates: 292,405 , 406,758



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**NAP HRA**

Title:

Scale: **1:20,524**

Drawn by:

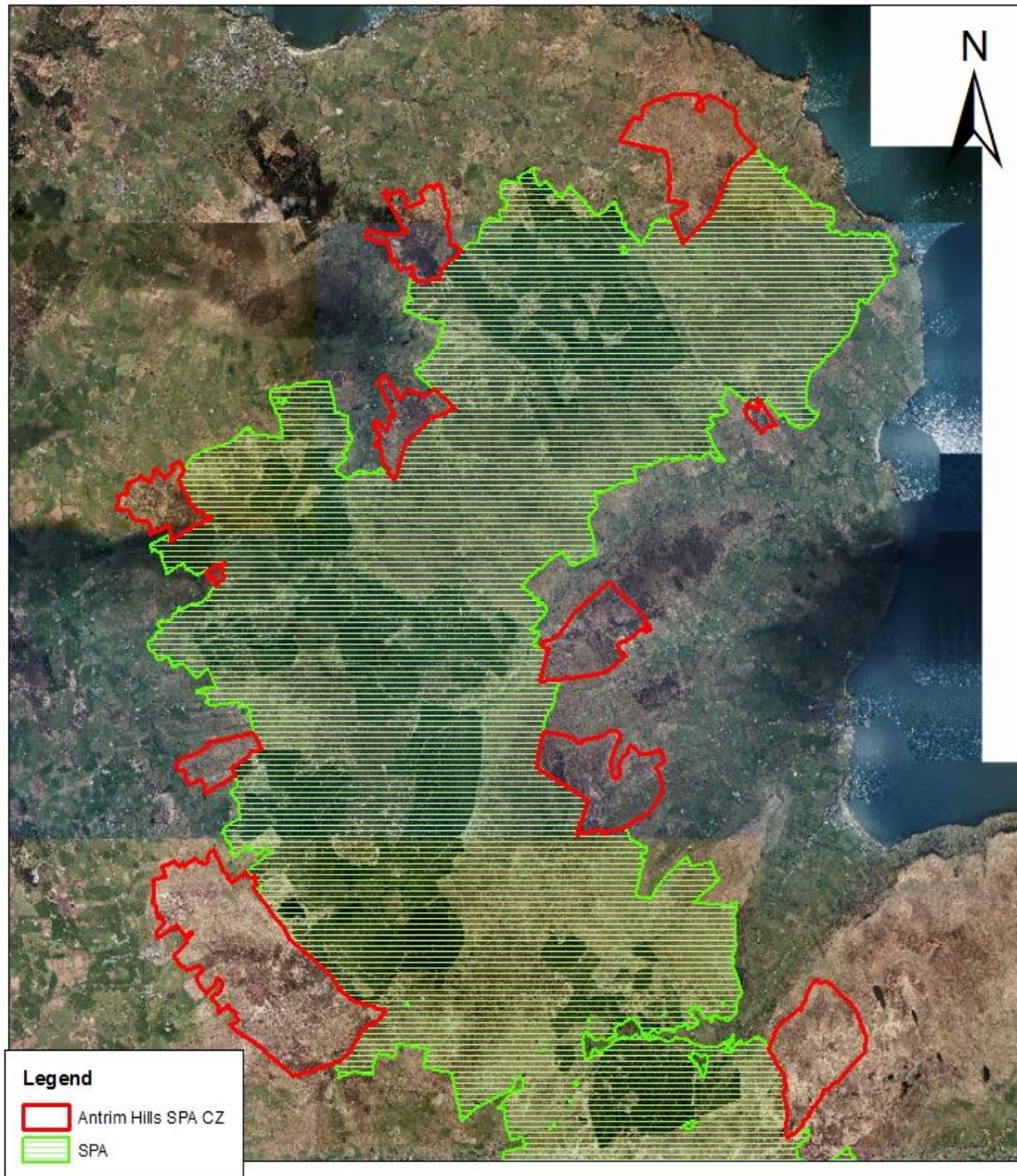
Date:

Description:

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# Map 10 Antrim Hills SPA Consultation Zones

Coordinates: 317,137 , 430,135



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**Title: NAP HRA**

**Scale: 1:107,663**

**Drawn by:**

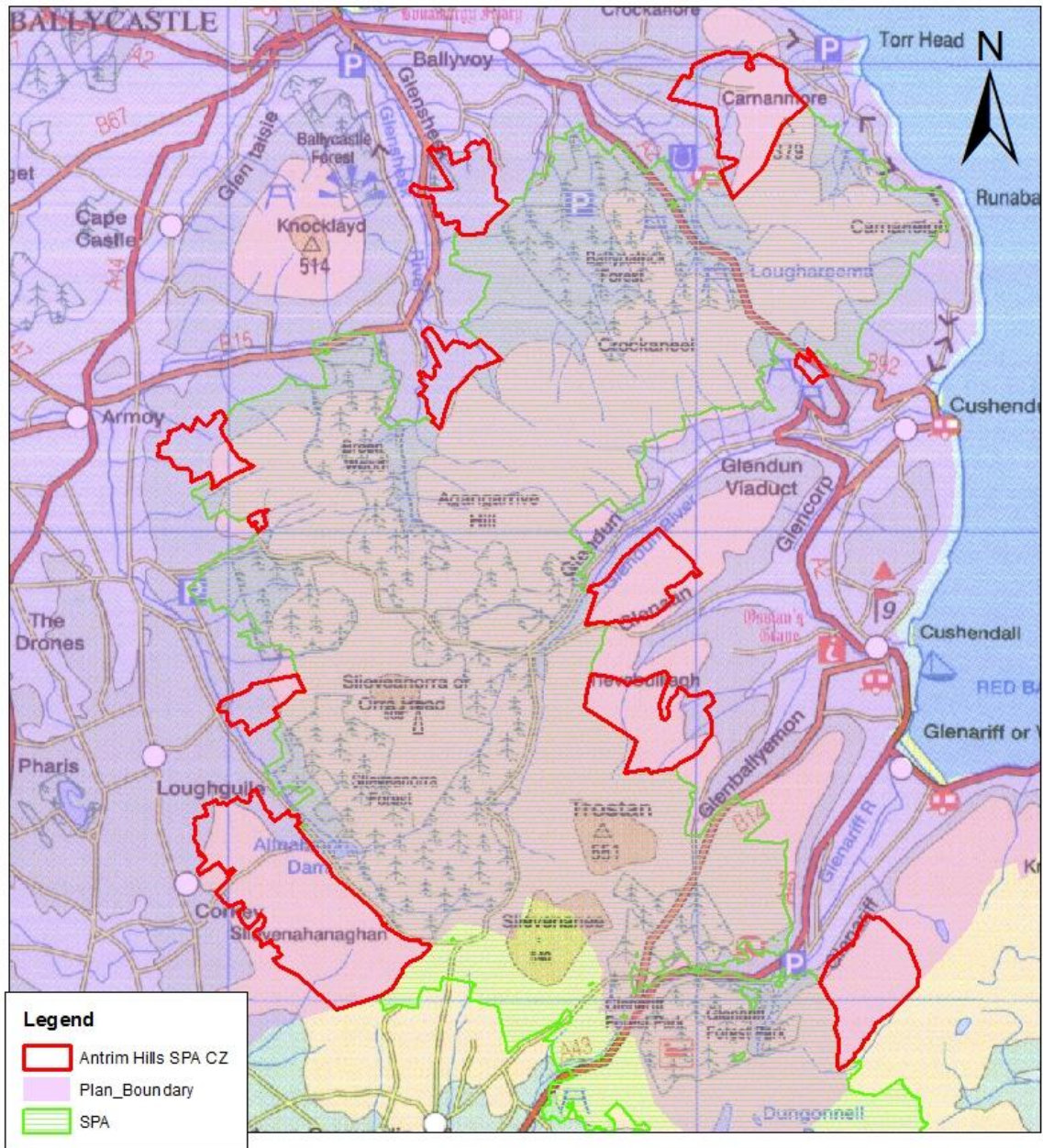
**Date:**

**Description:**

ENTER MAP DESCRIPTION

# Map 11 Antrim Hills SPA Consultation Zones

Coordinates: 316,312 , 429,277



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Northern Ireland Environment Agency  
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**Title: NAP HRA**

**Scale: 1:107,663**

**Drawn by:**

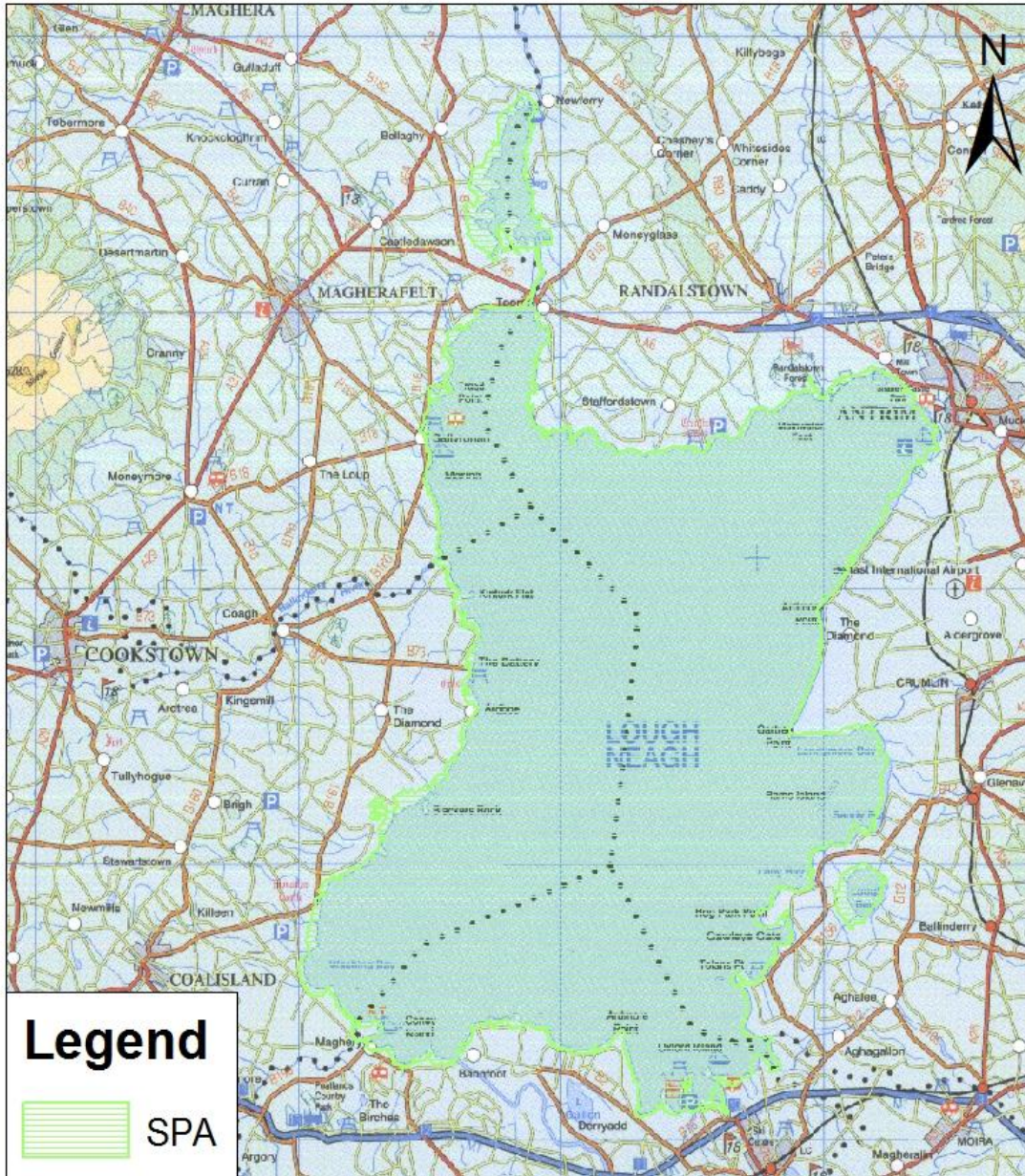
**Date:**

**Description:**

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## Map 12 Lough Neagh and Lough Beg SPA

Coordinates: 298,336 , 379,952



**Title:** NAP HRA

**Scale:** 1:192,072

**Drawn by:**

**Date:**

**Description:**

ENTER MAP DESCRIPTION

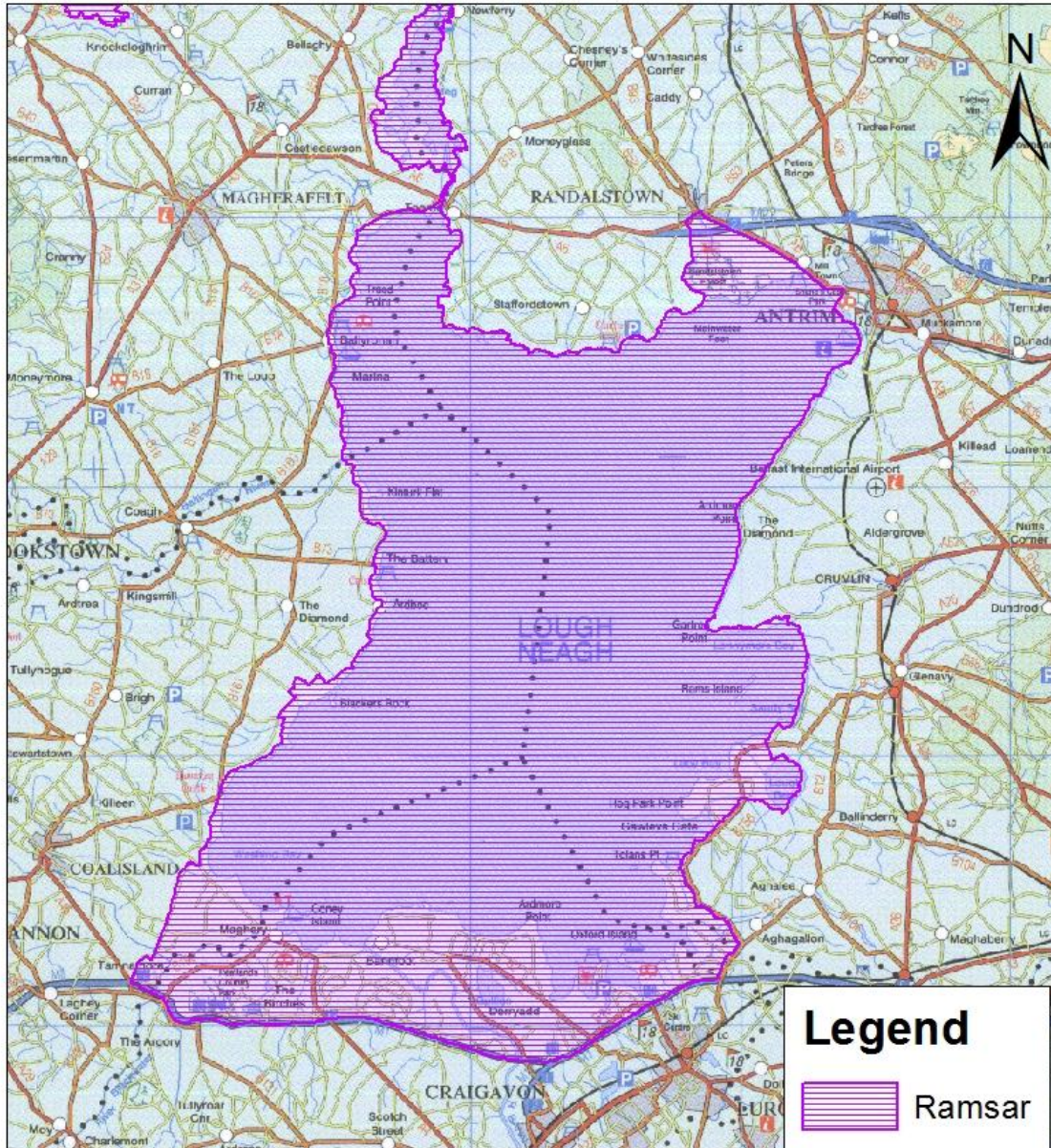
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## Map 13 Lough Neagh and Lough Beg Ramsar

Coordinates: 302,225 , 376,706



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**Title:** NAP HRA

**Scale:** 1:192,072

**Drawn by:**

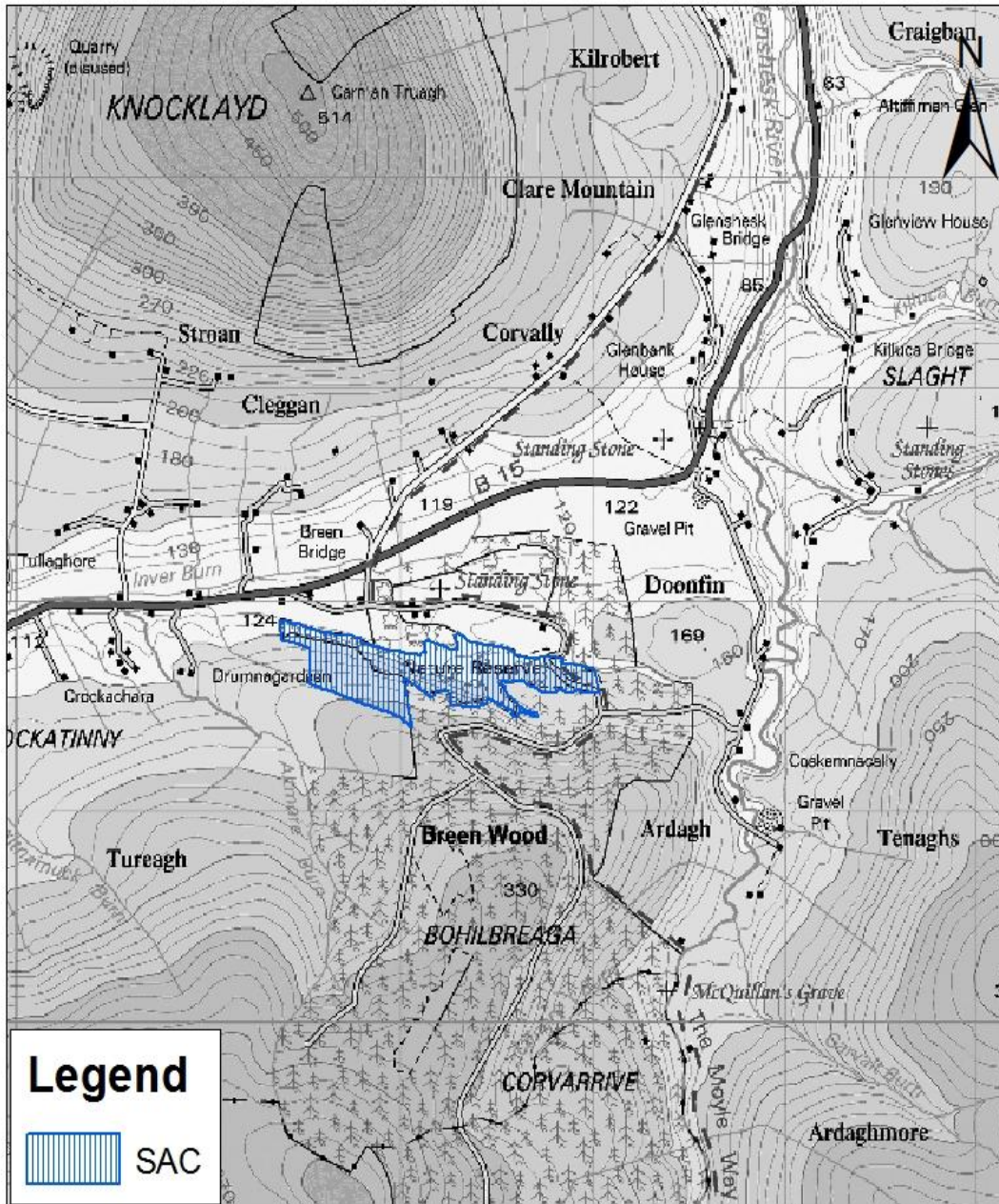
**Date:**

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## Map 14 Breen Wood SAC

Coordinates: 312,544 , 433,971



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**Title:** NAP HRA

**Scale:** 1:25,610

**Drawn by:**

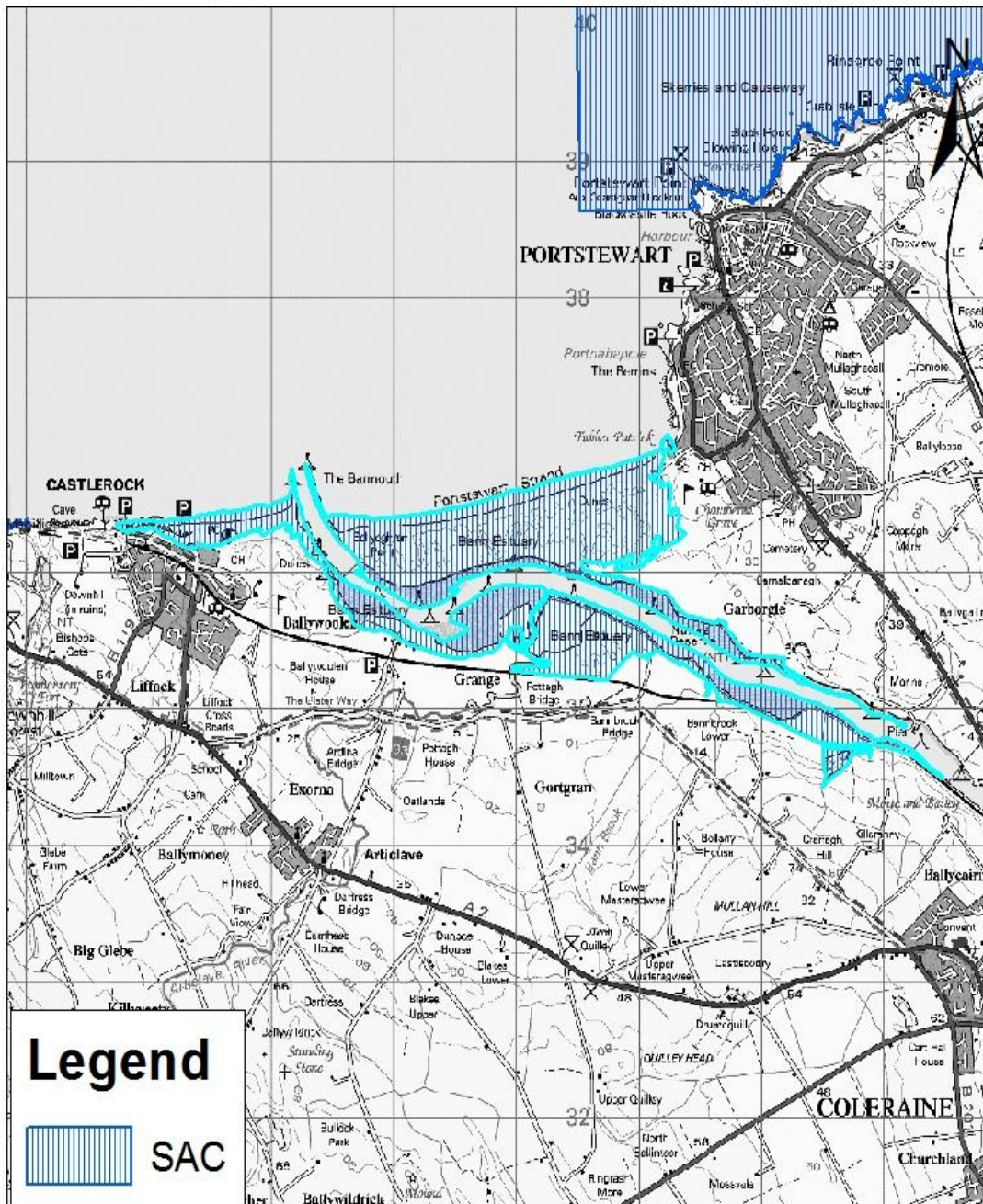
**Date:**

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# Map 15 Bann Estuary SAC

Coordinates: 279,854 , 435,746



**Title: NAP HRA**

**Scale: 1:39,590**

**Drawn by:**

**Date:**

**Description:**

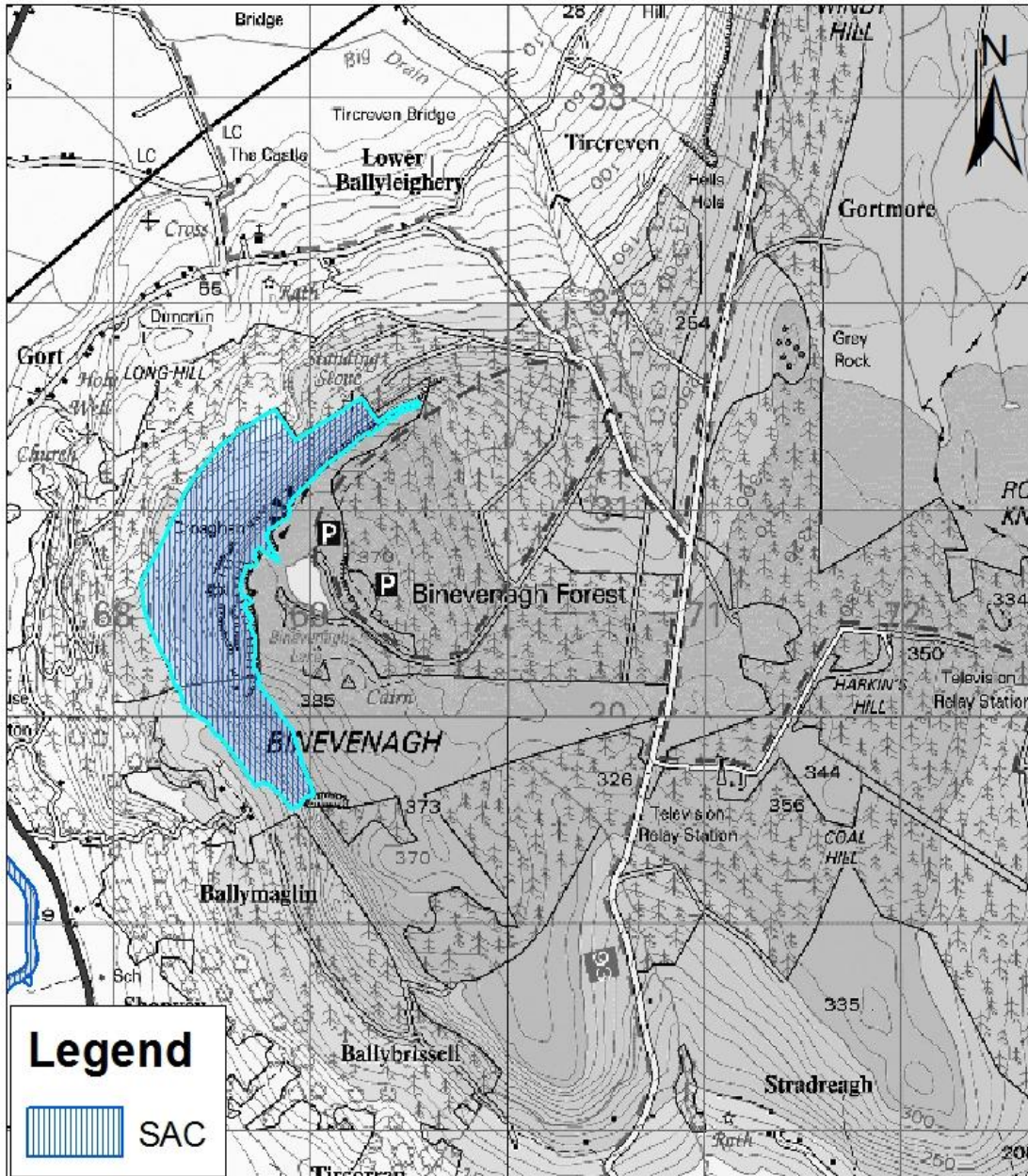
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**Map 16**  
**Binevenagh SAC**

Coordinates: 270,050 , 430,608



**Title: NAP HRA**

**Scale: 1:25,610**

**Drawn by:**

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**Description:**

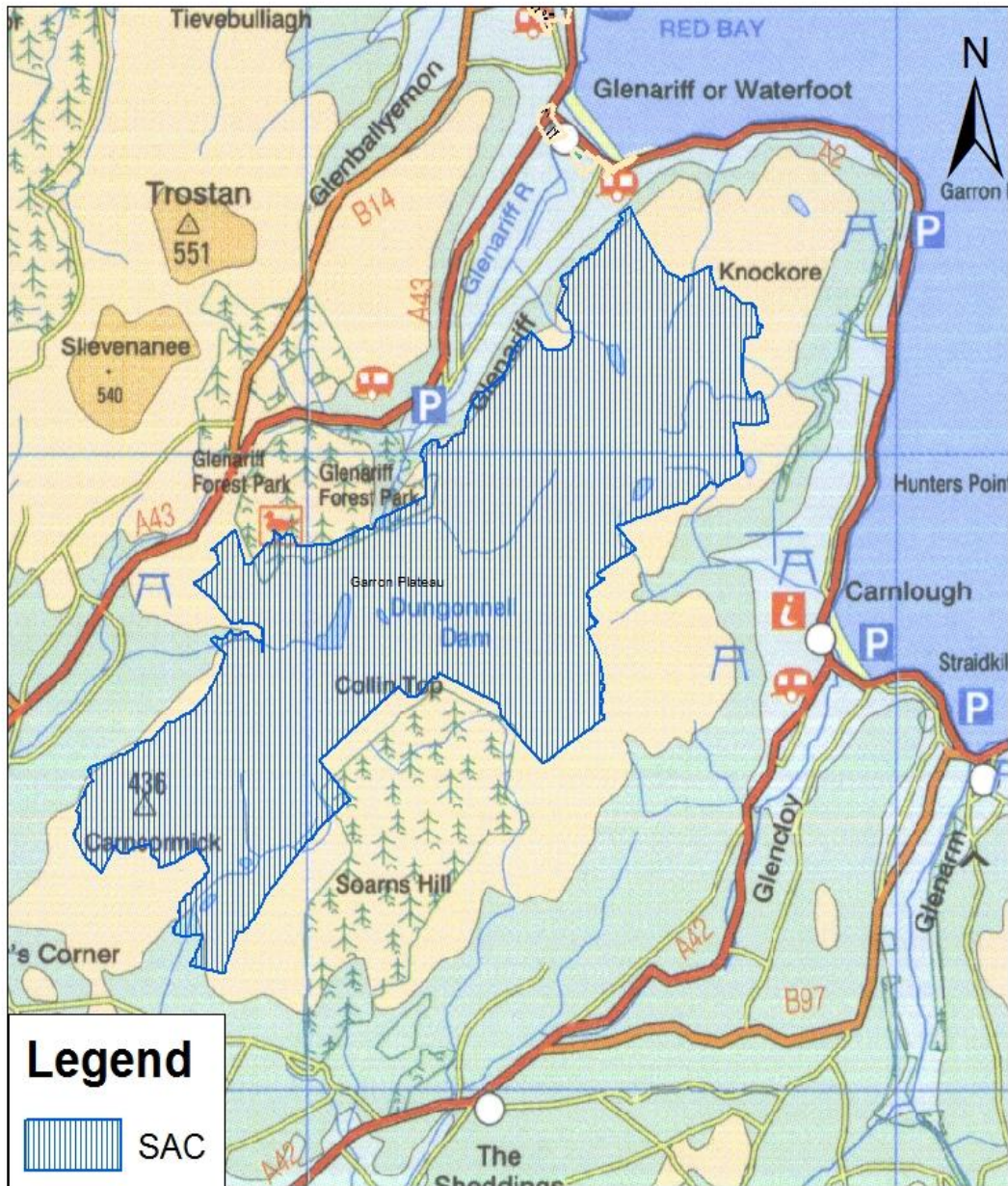
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## Map 17 Garron Plateau SAC and Ramsar

Coordinates: 323,377 , 417,821



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**Title: NAP HRA**

**Scale: 1:83,615**

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**Map 18**

Coordinates: 251,951 , 410,913

**River Faughan and tributaries SAC**



**Title: NAP HRA**

**Scale: 1:105,574**

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# Map 19: Sheep Island SPA

Coordinates: 304,893 , 445,387



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### NAP HRA

Title:

Scale: **1:26,215**

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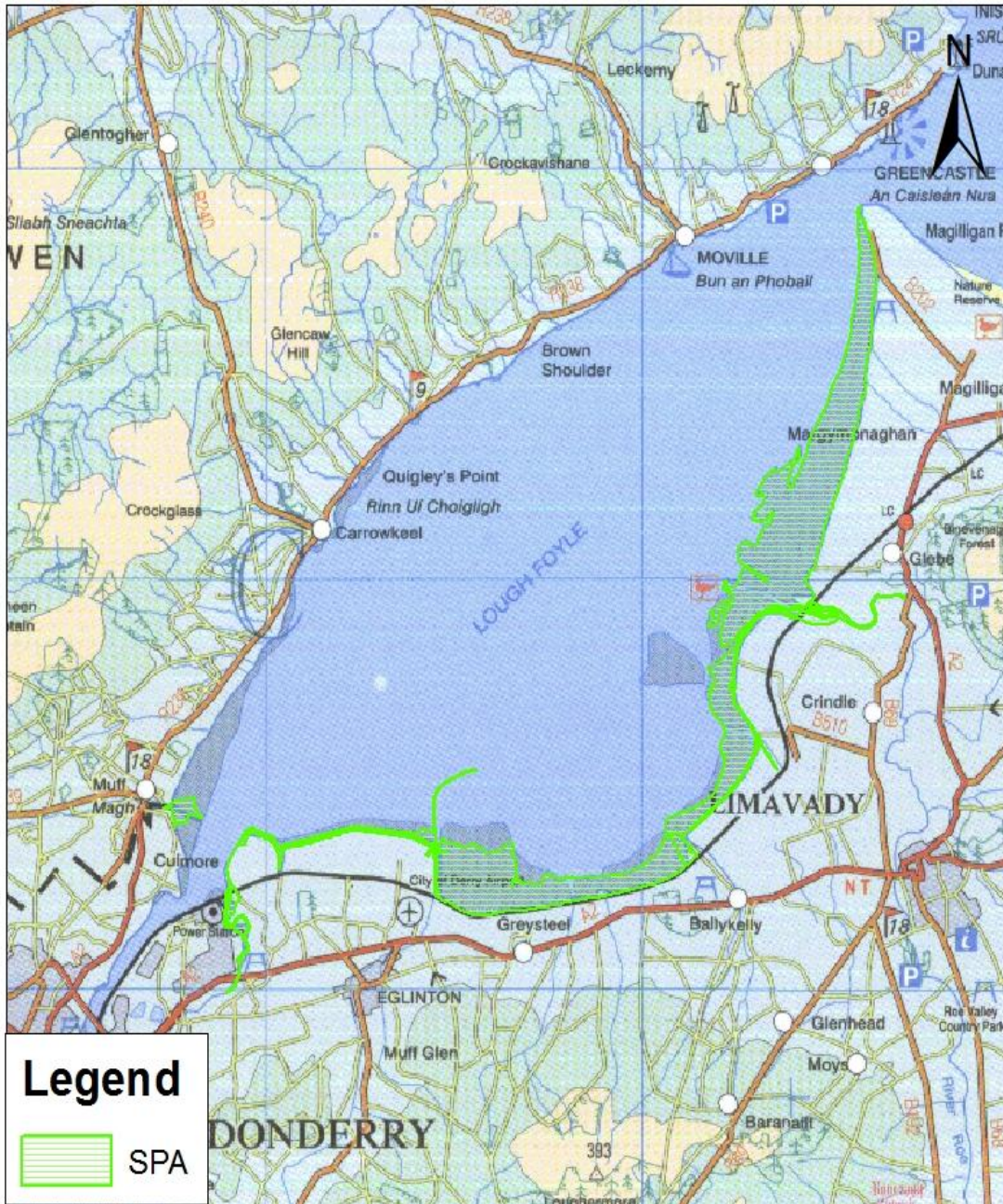
Date:

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Map 20: Lough Foyle SPA and Ramsar

Coordinates: 256,409 , 429,440



**Title: NAP HRA**

**Scale: 1:131,075**

**Drawn by:**

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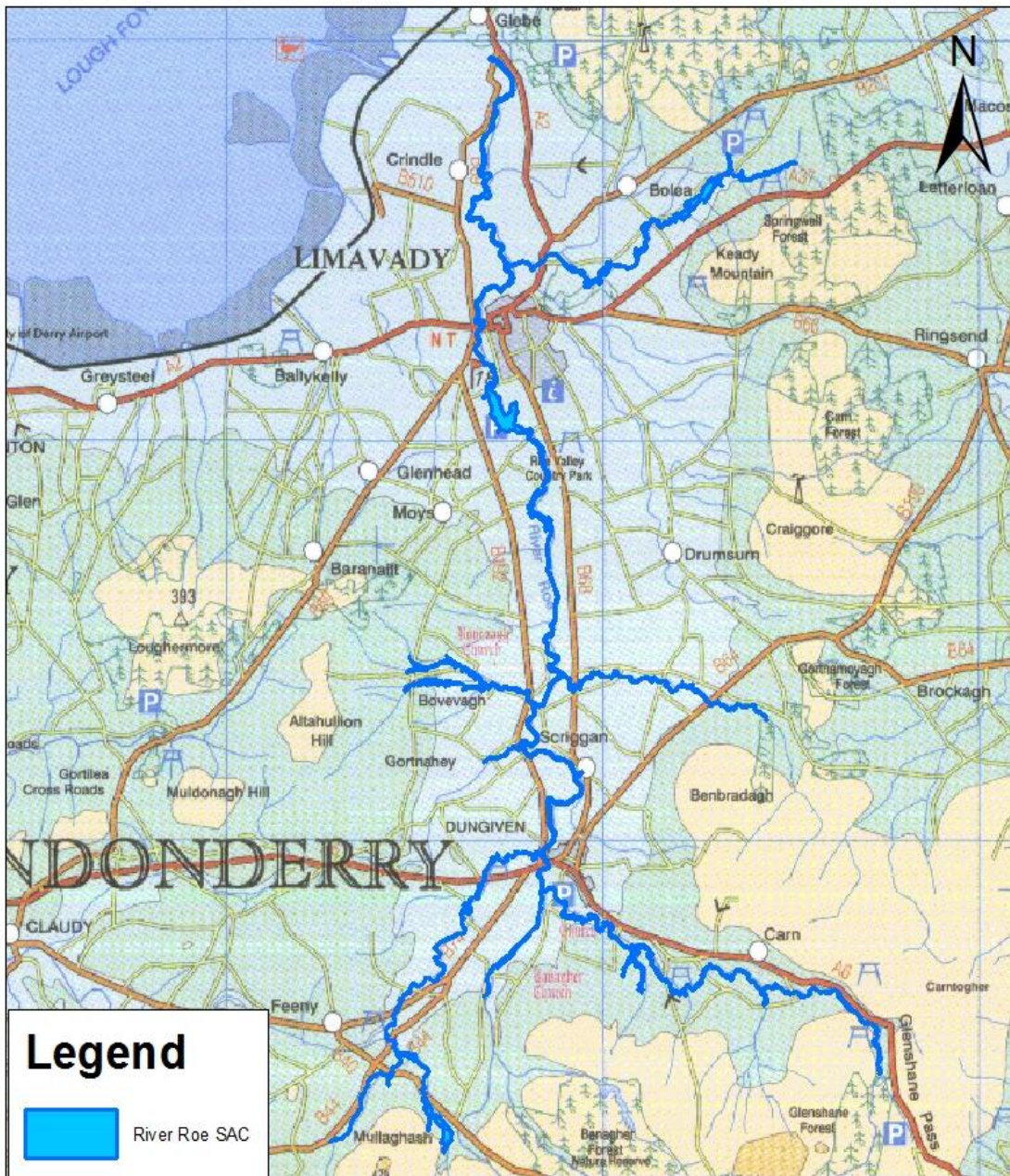
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# Map 21 River Roe and Tributaries SAC

Coordinates: 267,513 , 416,305



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**NAP HRA**

**Title:**  
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# Map 22 Magilligan SAC

Coordinates: 270,580 , 436,929



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Title: **NAP HRA**

Scale: **1:52,430**

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## Map 23 North Antrim Coast SAC

Coordinates: 298,572 , 444,310



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**Title:** NAP HRA

**Scale:** 1:53,416

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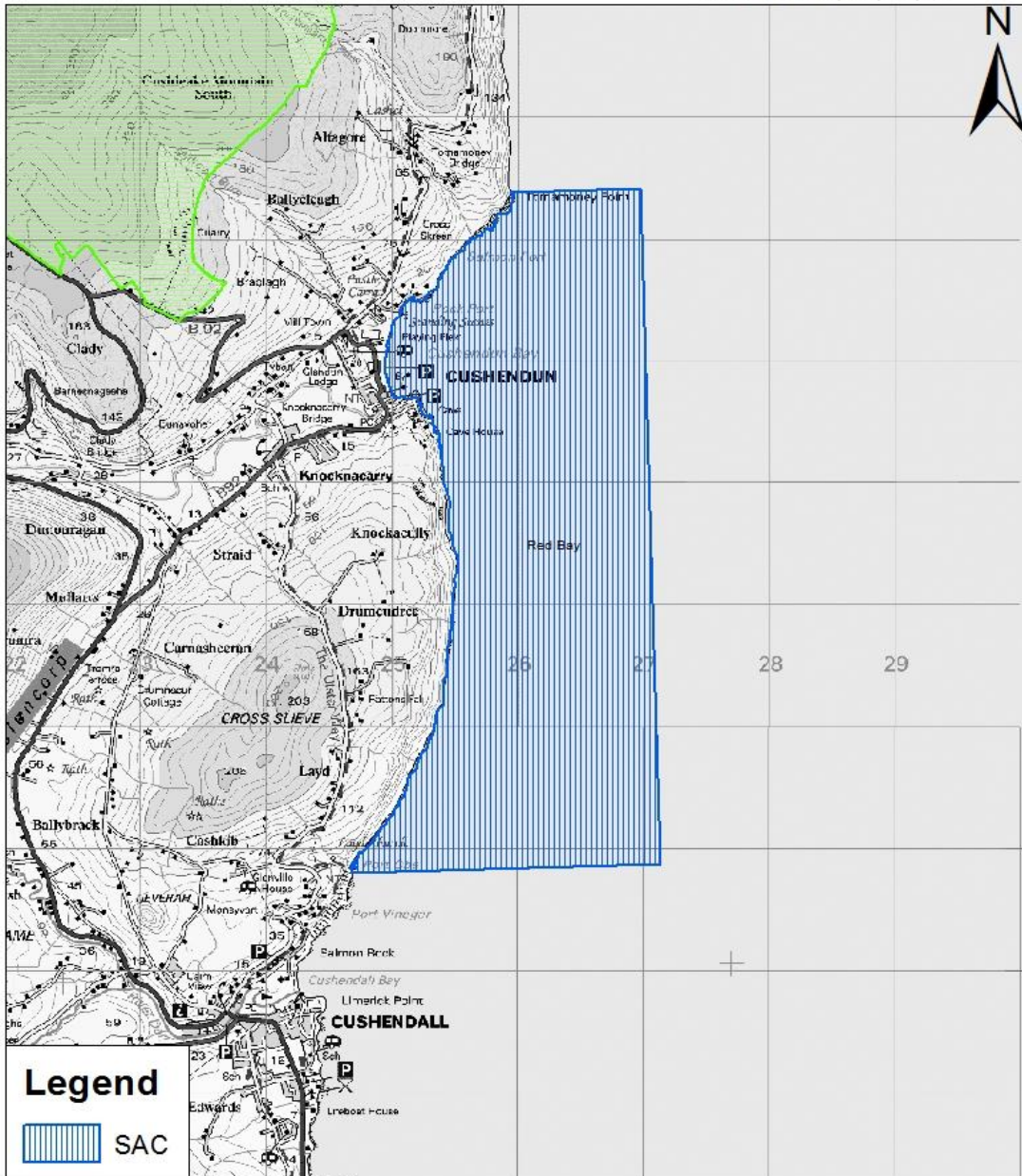
**Date:**

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### MAP 24 Red Bay SCI

Coordinates: 325,996 , 431,103



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**Scale: 1:39,910**  
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## MAP 25 Skerries and Causeway SCI

Coordinates: 289,536 , 448,063



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**Scale: 1:107,152**  
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**Map 26**  
**Rathlin Island SPA**

Coordinates: 311,914 , 447,968



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**Title: NAP HRA**

**Scale: 1:85,269**

**Drawn by:**

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## Map 27 Rathlin Island SAC

Coordinates: 311,914 , 447,968



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**NAP HRA**

**Title:**

**Scale: 1:85,269**

**Drawn by:**

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**Description:**

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## **Appendix: 4**

### **Note on Consultation Zones (CZs) in Northern Area Plan**

When CZs are referred to in the Habitats Regulation Assessment (HRA) in relation to European or Ramsar sites, what is meant is: **a minimal indicative area**, surrounding and including the site, within which certain proposed developments or operations will require consultation with Natural Environment Division, NIEA to determine whether a TOLS (to establish if an adverse effect is likely on the integrity or conservation objectives of that particular site) is required. Consultation Zone boundaries for the same site may vary over time if new scientific evidence comes to light.

In defining CZs for the HRA for designated sites within the Plan area, the boundaries have been drawn up to reflect certain Area Plan proposals/ policies which alone or in combination, have developments and/ or operations likely to cause an impact on a designated site and for which a consultation with NIEA under the Habitats Directive will be triggered.

It was deemed that seven European sites in the Plan Area required the designation of a CZ through this HRA.

#### **Antrim Hills SPA**

The consultation zones for Antrim Hills SPA have been drawn up to include all suitable foraging habitat for Hen Harrier within 2.5km of the SPA boundary.

#### **Ballynahone Bog SAC**

The consultation zone for Ballynahone Bog SAC has been drawn up to include the area surrounding the designated site within which proposed developments or operations could have an adverse effect on the hydrology of the site.

#### **Garn-Glenshane Pass SAC**

The consultation zone for Carn-Glenshane Pass SAC has been drawn up to include the area surrounding the designated site within which proposed developments or operations could have an adverse effect on the hydrology of the site.

#### **Dead Island Bog SAC**

The consultation zone for Dead Island Bog SAC has been drawn up to include the area surrounding the designated site within which proposed developments or operations could have an adverse effect on the hydrology of the site.

#### **Garry Bog SAC**

The consultation zone for Garry Bog SAC has been drawn up to include the area surrounding the designated site within which proposed developments or operations could have an adverse effect on the hydrology of the site.

#### **Main Valley Bogs SAC**

The consultation zone for Main Valley Bogs SAC has been drawn up to include the area surrounding the designated site within which proposed developments or operations could have an adverse effect on the hydrology of the site.

#### **Wolf Island Bog SAC**

The consultation zone for Wolf Island Bog SAC has been drawn up to include the area surrounding the designated site within which proposed developments or operations could have an adverse effect on the hydrology of the site.



## Appendix 5: WWTW Figures

<b>Name of works</b>	<b>AIR13 Design PE</b>	<b>2013 PE</b>	<b>AIR13 Actual PE for 2014</b>	<b>PE Status</b>	<b>Headroom</b>
<b>Cloughmills (WWTW)</b>	<b>1998</b>	<b>1711</b>	<b>1711</b>	<b>No Change</b>	<b>287</b>
<b>Limivady (WWTW)</b>	<b>20490</b>	<b>16669</b>	<b>16194</b>	<b>Decrease</b>	<b>4296</b>
<b>Dungiven (WWTW)</b>	<b>5742</b>	<b>4777</b>	<b>4759</b>	<b>Dcrease</b>	<b>983</b>
<b>Feeny (WWTW)</b>	<b>941</b>	<b>924</b>	<b>924</b>	<b>No Change</b>	<b>17</b>
<b>Bonnanaboigh (WWTW)</b>	<b>400</b>	<b>255</b>	<b>255</b>	<b>No Change</b>	<b>145</b>
<b>Cushendall (WWTW)</b>		<b>4006</b>	<b>4006</b>	<b>No Change</b>	
<b>Bushmills (WWTW)</b>	<b>8862</b>	<b>5545</b>	<b>5539</b>	<b>Decrease</b>	<b>3323</b>
<b>North Coast (WWTW)</b>	<b>107400</b>	<b>76266</b>	<b>76357</b>	<b>Increase</b>	<b>31043</b>

## Appendix: 6 List of Acronyms

AOCMD	Areas of Constraint on Mineral Development
AONB	Area of Outstanding Natural Beauty
AQMA	Air Quality Management Area
ASAI	Area of Significant Archaeological Interest
ASI	Area of Scientific Interest
ASSI	Area of Special Scientific Interest
ATC	Area of Townscape Character
CPA	Countryside Policy Area
CZ	Consultation Zone
DARD	Department of Agriculture and Rural Development
DOE	Department of the Environment
DRD	Department for Regional Development
EC	European Community
EIA	Environmental Impact Assessment
EU	European Union
HGI	Housing Growth Indicator
HGV	Heavy Goods Vehicle
HRA	Habitats Regulation Assessment
IPRI	Industrial Pollution and Radiochemical Inspectorate
KSR	Key Site Requirements
LCA	Landscape Character Areas
LGD	Local Government District
LLPA	Local Landscape Policy Areas
LNR	Local Nature Reserve
MAP	Magherafelt Area Plan
MNR	Marine Nature Reserve
NI	Northern Ireland
NIHE	Northern Ireland Housing Executive
NILCA	Northern Ireland Landscape Character Assessment 2000
NIW	Northern Ireland Water
NNR	National Nature Reserve

ODPM	Office of the Deputy Prime Minister
PPS	Planning Policy Statement
PSRNI	A Planning Strategy for Rural Northern Ireland
RDS	Regional Development Strategy
RTS	Regional Transportation Strategy
SAC	Special Area of Conservation
cSAC	Candidate Special Area of Conservation
SCA	Special Countryside Area
SCI	Site of Community Importance (Special Area of Conservation nearing Designation)
SCPA	Special Countryside Policy Area
SEA	Strategic Environmental Assessment
SLNCI	Sites of Local Nature Conservation Importance
SPA	Special Protection Area
TPO	Tree Preservation Order
WMU	Water Management Unit
WWTW	Waste Water Treatment Works

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