



**SCOTT WILSON**

**Evidence Gathering Report to Support the Habitat  
Regulations Assessment (HRA) of the Local  
Development Framework for Copeland Borough  
Council**

**D r a f t   R e p o r t**

*January 2009*



## **Scott Wilson Ltd.**

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### **Evidence Gathering Report to Support The Habitat Regulations Assessment (HRA) of the Local Development Framework for Copeland Borough Council**

#### **Draft Report**

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January 2009

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## 1. INTRODUCTION

### 1.1 Introduction

1.1.1 Scott Wilson Ltd has been appointed by Copeland Borough Council to prepare a Sustainability Appraisal (SA) Framework for the proposed Local Development Framework (LDF) for Copeland. The SA will incorporate Strategic Environmental Assessment (SEA) and Habitat Regulations Assessment (HRA) of the following proposed LDF Documents for Copeland:

- Core Strategy Development Plan Document (DPD);
- Site Allocations DPD;
- Development Management Policies DPD;
- Whitehaven Town Centre and Harbourside DPD; and,
- S106 Contributions Strategy SPD.

1.1.2 The above listed LDF documents will replace the existing Local Development Plan for Copeland. The LDF documents are currently being developed and as such, it is not possible to undertake a full HRA assessment at this stage.

### 1.2 Purpose and outline of this report

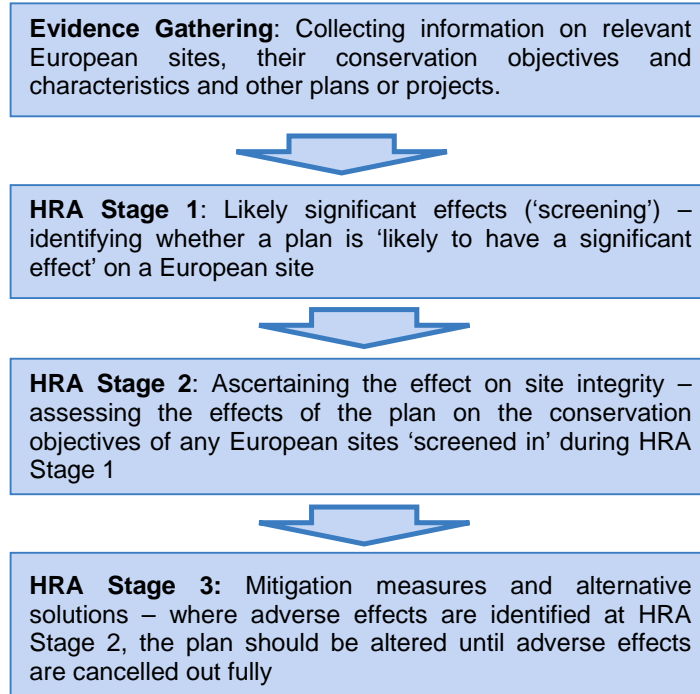
1.2.1 This purpose of this report is to complete the evidence gathering stage of the four stage approach to HRA, as detailed in Section 2: Methodology, of this report. As part of the SA and HRA iterative process, this information will be used by the planning team to inform the policy development for the LDF documents. Once completed, these documents will be reviewed by the ecology team to assess the potential for impacts on the Natura 2000 sites. Recommendations for reducing and avoiding impacts to the Natura 2000 sites will then be issued to the Planning team as part of the Stage 1 assessment (see table 1 below for the HRA process).

## 2. METHODOLOGY

### 2.1 Methodology overview

2.1.1 Table 1 illustrates the key principles which Scott Wilson will adhere to in the HRA. This report covers the Evidence Gathering phase of the four-stage Department for Communities and Local Government (DCLG) approach to HRA, which is outlined in Table 1.

**Table 1: Four-stage approach to Habitat Regulation Assessment (DCLG 2006)**



- 2.1.2 The Evidence gathering stage has involved the identification of Natura 2000 sites both within Copeland Borough and within 20km of the Copeland Borough Boundary. The vulnerability and pressures of each of these Natura 2000 sites has been identified and this information has been used to identify possible impacts on each of the Natura 2000 sites. At this stage, potential impacts are non-specific, given the lack of detailed planning policies.
- 2.1.3 It is understood that this information will be used to inform the development of the LDF documents, and where possible seek to avoid potential impacts on the Natura 2000 sites identified. Once draft policies are available for the LDF documents, a Stage 1 HRA will be carried out to identify the likely significant effects ('screening') of the new planning policies to identify whether the new policies are 'likely to have a significant effect' on a European site(s), as part of the SA.

## 2.2 Evidence gathering

- 2.2.1. The approach to evidence gathering was to:

- Develop a 'long list' of Natura 2000 sites;
- Gain an appropriate understanding of the Natura 2000 sites, including their vulnerability and pressures; and,
- Identify potential impacts on each of the Natura 2000 sites, arising from the development of new policies within Copeland Borough Boundary.

2.2.2 This information is presented in Table 2 below. The list of Natura 2000 sites identified is listed below.

2.2.3 Natura 2000 sites within Copeland Borough Boundary:

- **Wast Water** Special Area of Conservation (SAC);
- **Drigg Coast** SAC;
- **River Derwent and Bassenthwaite Lake** SAC;
- **River Ehen** SAC;
- **Lake District High Fells** SAC;
- **Duddon Mosses** SAC;
- **Duddon Estuary Special Protection Area** (SPA);
- **Duddon Estuary** Ramsar Site; and,
- **Morecambe Bay** SAC.

Natura 2000 sites within 20km of Copeland Borough Boundary:

- **Morecambe Bay** SPA;
- **Morecambe Bay** Ramsar Site;
- **Borrowdale Woodland Complex** SAC;
- **Ullswater Oakwoods** SAC;
- **North Pennine Meadows** SAC;
- **Subberthwaite, Blawith & Torver Low Commons** SAC;
- **Yew Barrow Woods** SAC;
- **Roudsea Wood and Mosses** SAC;
- **River Kent**; and,
- **Esthwaite Water** Ramsar Site.

**TABLE 2: SCREENING SUMMARY TABLE**

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
<b>European Sites within Copeland Borough Boundary</b>			
<p><b>Wast Water SAC</b></p> <p><b>Cumbria</b></p> <p>286.21ha</p> <p>Comprises: Wast Water SSSI</p>	<p>Annex I habitat:</p> <ul style="list-style-type: none"> <li>Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>.</li> </ul>	<p>There are no known threats, human pressures or otherwise, which will adversely affect the water quality of Wast Water. British Nuclear Fuels Limited abstract water from the lake, but it is not thought that present rates of abstraction adversely affect the special interest of the site. Eutrophication of the waters at the head of the lake are a concern due to diffuse pollution from agricultural processes and input of sediment from inappropriate land management. An increase in nutrient input would cause problems.</p>	<ul style="list-style-type: none"> <li>Further water abstractions may result in an adverse affect on the site;</li> <li>Increased air pollution including dust may result in changes in water quality due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;</li> <li>Changes in water quality may result in an adverse affect on the site. For Wast Water, this could occur through direct changes in the water quality of the lake or changes in the water quality of Lingmell Gill, which flows into Wast Water. Water quality can be affected by changes in water flow, contamination of groundwater sources, the use of chemicals and pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off;</li> <li>Physical disturbance. This will result if there is a direct impact on the European site;</li> <li>Non-physical disturbance. Species present within the site may be subject to higher levels of disturbance from adjacent land uses.</li> </ul>
<p><b>Drigg Coast SAC</b></p> <p><b>Cumbria</b></p>	<p>Annex I habitats:</p> <ul style="list-style-type: none"> <li>Estuaries.</li> <li>Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>).</li> </ul>	<p>The estuary and flats are still relatively natural and there is no threat at present.</p>	<ul style="list-style-type: none"> <li>Increased air pollution including dust may result in changes in water quality due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
<p>1397.44ha</p> <p>Contains: Drigg Coast SSSI Drigg Dunes and Gullery, Ravenglass Local Nature Reserve LNR</p>	<ul style="list-style-type: none"> <li>• Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>).</li> <li>• Mudflats and sandflats not covered by seawater at low tide.</li> <li>• Salicornia and other annuals colonising mud and sand.</li> <li>• Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>).</li> <li>• Embryonic shift dunes.</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes').</li> <li>• Fixed dunes with herbaceous vegetation ('grey dunes').</li> <li>• Humid dune slacks.</li> </ul>		<p>generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;</p> <ul style="list-style-type: none"> <li>• Changes in water quality may result in an adverse affect on the site. For Drigg Coast, this could occur through direct changes in the water quality of the estuary or changes in the water quality of the River Esk, River Irt, Broadoak Beck, Whitrow Beck, Eskmeals Pool and the River Mite, which flow into Drigg Coast SAC. Water quality can be affected by changes in water flow, pollution events, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off, dredging;</li> <li>• Physical disturbance. This will result if there is a direct impact on the European site which results in an actual loss of habitat;</li> <li>• Non-physical disturbance. Species present within the site may be subject to higher levels of disturbance from increased access to the site and adjacent land uses; and,</li> <li>• Noise and visual impacts if changes in landscape and activities near to the site.</li> </ul>
<p><b>River Derwent and Bassenthwaite Lake SAC</b></p> <p><b>Cumbria</b></p> <p>1832.96 ha</p> <p>Contains: River Derwent and its Tributaries SSSI Bassenthwaite Lake</p>	<p>Annex I habitat:</p> <ul style="list-style-type: none"> <li>• Oligotrophic to mesotrophic standing water with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>.</li> <li>• Watercourses of plain to montane levels with the <i>Ranunculion fluitantis</i> and</li> </ul>	<p>The Wildlife of the River Derwent system is dependent upon the maintenance of high quality water, particularly its naturally low level of nutrients. There are problems with sewage, acidification (from rainfall) and pollution with synthetic pyrethroid sheep dips (leading to losses of insect life, the food of the Annex II fish species). Flow regimes and sedimentation patterns in the rivers are important, not least in providing suitable spawning grounds for fish. These are affected by flood defence works and abstraction for water supplies. The management of the land in the</p>	<p>As stated in the vulnerability and pressures column, this site is dependent on maintenance of high water quality and a low nutrient load.</p> <ul style="list-style-type: none"> <li>• Changes in water quality may result in an adverse affect on the site. For the River Derwent and Bassenthwaite Lake, this could occur through direct changes in the water quality of the River Derwent or Bassenthwaite Lake or changes in the water quality of Collie-gate Beck, Smithy Beck, Scallow Beck, Smaithwaite Beck which flow into the River Derwent SAC. Water quality can be affected by changes in water flow, contamination of groundwater sources, the</li> </ul>



European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
SSSI Braithwaite Moss SSSI Buttermere SSSI Bassenthwaite Lake National Nature Reserve NNR	<p><i>Callitricho-Batrachion</i> vegetation.</p> <p>Annex II species:</p> <ul style="list-style-type: none"> <li>• Marsh fritillary butterfly (<i>Euphydryas aurinia</i>)</li> <li>• Sea lamprey (<i>Petromyzom marinus</i>)</li> <li>• Brook lamprey (<i>Lampetra planeri</i>)</li> <li>• River lamprey (<i>Lampetra fluviatilis</i>).</li> <li>• Atlantic salmon (<i>Salmo salar</i>)</li> <li>• Otter (<i>Lutra lutra</i>)</li> <li>• Floating water-plantain (<i>Luronium natans</i>)</li> </ul>	<p>catchment is also important. Much of the land is heavily drained for agriculture or forestry, which results in increased run-off.</p> <p>Soil erosion due to heavily grazed land is causing high sediment loads in the water courses.</p> <p>Phosphorous stripping is being undertaken on part of the site and it is expected that full recovery may take up to a decade or so.</p>	<p>use of chemicals and pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads, agricultural run-off, and surface water run off. In addition, for this site, changes in water quality are having a direct impact on the diversity and percentage of invertebrate populations within the waterbodies, which the Annex II listed fish species depend on;</p> <ul style="list-style-type: none"> <li>• Water abstractions works may result in an adverse effect on the site;</li> <li>• Increased air pollution including dust may result in changes in water quality due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;</li> <li>• Non-physical disturbance. Species present within the site may be subject to higher levels of disturbance from adjacent land uses;</li> <li>• Physical disturbance such as increased drainage into the river, barriers to fish movement, etc. This will result if there is a direct impact on the European site; and,</li> <li>• Noise and visual impacts if changes in landscape occur near to the site.</li> </ul>
<p><b>River Ehen SAC</b></p> <p><b>Cumbria</b></p> <p>24.39 ha</p> <p>Contains:</p>	<p>Annex II Species:</p> <ul style="list-style-type: none"> <li>• freshwater pearl mussel (<i>Margaritifera margaritifera</i>)</li> <li>• Atlantic Salmon (<i>Salmo salar</i>)</li> </ul>	<p>The freshwater mussel population are expected to be adversely affected by the apparent decline in salmonid fish populations and by major eutrophication of the river from sewage works and agricultural run off.</p> <p>Practices associated with sheep-dipping pose a potential threat at this site and are under investigation.</p>	<ul style="list-style-type: none"> <li>• Further water abstractions works may result in an adverse affect on the site.</li> <li>• Changes in water quality may result in an adverse affect on the site, directly affecting both the Annex II species, for which the site is designated. For the River Ehen this could occur through direct changes in the water quality of the River Ehen or through changes in</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
<p>River Ehen (Ennerdale Water to Keekle Confluence) SSSI</p>		<p>Possible issues arising from pearl fishing. Possible concerns over flows in the river due to abstraction.</p>	<p>water quality of Boughton Beck, Mere Beck, Hole Beck, Lingla Beck, Red Beck, Horse Gill, Gimelthwaite Gill, Banty Gill, Rowland Beck, Oxenstone Beck, Croasdale Beck, Mere Gill, Low Bridge Gill, Hole Gill and Grain Gill. which flow into the River Ehen SAC. Water quality can be affected by changes in water flow, contamination of groundwater sources, the use of chemicals and pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off;</p> <ul style="list-style-type: none"> <li>• Increased air pollution including dust may result in changes in water quality due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;</li> <li>• Non-physical disturbance. Species present within the site may be subject to higher levels of disturbance from adjacent land uses;</li> <li>• Physical disturbance such as increased drainage into the river, barriers to fish movement, etc. This will result if there is a direct impact on the European site; and,</li> <li>• Noise and visual impacts if the area changes in landscape near to the site.</li> </ul>
<p><b>Lake District High Fells SAC</b>  <b>Cumbria</b>  26999.36  Contains:</p>	<p>Annex 1 habitats:</p> <ul style="list-style-type: none"> <li>• Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>.</li> </ul>	<p>The European habitats on the site are threatened by grazing and more locally grazing combined with visitor pressure. A very high proportion of the site occurs on unfenced common land where control of grazing is difficult to achieve and pressure of sheep threatens to destroy or prevent favourable condition from being achieved. Siliceous scree is probably the least threatened</p>	<ul style="list-style-type: none"> <li>• The current pressures on the site are from visitors and grazing use. Changes in land use which may result in an increase in visitor numbers or an increase in grazing pressure, will adversely affect the site.</li> <li>• Water quality in the wet habitats within the SAC may be affected by changes in water flow, contamination of groundwater sources, the use of chemicals and</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
Pillar and Ennerdale Fells SSSI Helvellyn and Fairfield SSSI Wasdale Screes SSSI Scafell Pike SSSI Birk Fell SSSI Armboth Fells SSSI Buttermere Fells SSSI Force Crag Mine SSSI Honister Crag SSSI Skiddaw Group SSSI Shap Fells SSSI	<ul style="list-style-type: none"> <li>• Northern Atlantic wet heaths with <i>Erica tetralix</i></li> <li>• European dry heaths</li> <li>• Alpine and boreal heaths</li> <li>• <i>Juniperus communis</i> formations on heaths or calcareous grasslands</li> <li>• Siliceous alpine and boreal grasslands</li> <li>• <i>Hydrophilous</i> tall herb fringe communities of plains and of the montane to alpine levels</li> <li>• Blanket bogs</li> <li>• Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>).</li> <li>• Siliceous rocky slopes with chasmophytic vegetation.</li> <li>• Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles.</li> <li>• Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe).</li> <li>• Alkaline fens.</li> </ul>	habitat and is widespread, albeit in a modified state.	<p>pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off;</p> <ul style="list-style-type: none"> <li>• Increased air pollution including dust may result in changes in water quality within the wet habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;</li> <li>• Non-physical disturbance. Species present within the site may be subject to higher levels of disturbance from adjacent land uses;</li> <li>• Physical disturbance such as increased access, dog walking. This will result if there is a direct impact on the European site; and,</li> <li>• Noise and visual impacts if the area changes in landscape near to the site.</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
	<ul style="list-style-type: none"> <li>• Calcareous rocky slopes with <i>chasmophytic</i> vegetation.</li> </ul> <p>Annex 2 habitats:</p> <ul style="list-style-type: none"> <li>• Slender green feather-moss.</li> </ul>		
<p><b>Duddon Mosses SAC</b></p> <p><b>Cumbria</b></p> <p>313.07ha</p> <p>Contains: Duddon Mosses SSSI Duddon Mosses NNR</p>	<p>Annex 1 habitats:</p> <ul style="list-style-type: none"> <li>• Active raised bogs</li> <li>• Degraded raised bogs still capable of natural regeneration</li> </ul>	<p>Past drainage for peat extraction has lowered the water table and allowed scrub to spread across the mosses. The majority of landowners have management agreements with Natural England to allow restoration work. A programme of scrub removal and ditch-blocking is being undertaken with positive results.</p>	<ul style="list-style-type: none"> <li>• Potential impacts on the site may arise if changes in policies affect the restoration work, including the scrub removal and ditch blocking.</li> <li>• Water quality in the bog habitats within the SAC may be affected by changes in water flow, contamination of groundwater sources, the use of chemicals and pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off;</li> <li>• Water abstractions works may result in an adverse affect on the site;</li> <li>• Increased air pollution may result in changes in water quality within the bog habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes, recycling facilities which generate air-borne emissions;</li> <li>• Non-physical disturbance. Species present within the site may be subject to higher levels of disturbance from adjacent land uses</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
<p><b>Duddon Estuary SPA</b></p> <p><b>Cumbria</b></p> <p>6806.3ha</p> <p>Comprises: Sandscale Haws NNR North Walney NNR Duddon Estuary SSSI</p>	<p>Article 4.1 Qualification:</p> <ul style="list-style-type: none"> <li>• <i>Sterna sandvicensis</i> (1.5% of GB breeding population).</li> </ul> <p>Article 4.2 Qualification:</p> <ul style="list-style-type: none"> <li>• <i>Tringa Totanus</i> (0.9% of the wintering population).</li> <li>• <i>Anas acuta</i> (2.7% of the wintering population).</li> <li>• <i>Calidris canutus</i> (1.3% of the winter population).</li> </ul>	<p>The Duddon Estuary is a diverse estuarine system dependent on the physical processes that dominate the natural system: consequently the vulnerability of habitats is linked to changes in the physical environment. The intertidal zone is threatened by coastal squeeze as a result of land claim and coastal defense works as well as sea level rise and storm surges. Many of the saltmarshes are grazed by agricultural stock, sometimes as a high level. Waterfowl wintering on estuaries are vulnerable to loss of feeding areas through disturbance, land claim and development. The Duddon Estuary partnership is addressing some of the threats arising from recreational pressure and bait digging. There are various developments for housing, amenity and industry adjacent to the site, however to date there has been no significant effect on the nature conservation interest of the estuary.</p>	<ul style="list-style-type: none"> <li>• Physical disturbance. This will result if there is a direct impact on the European site.</li> <li>• Changes in water quality within the SPA may adversely affect the site. For Duddon Estuary SPA, this may be directly through changes in the water quality within Duddon Estuary or indirectly through changes in the water quality of Haverigg Pool, Pear Tree Beck, Cross Beck, Kirkby Pool, River Lickle, River Duddon, Black Beck and Soutergate Beck which flow into Duddon Estuary. Water quality within Duddon Estuary SPA may be affected by changes in water flow, contamination of groundwater sources, the use of chemicals and pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off;</li> <li>• Increased air pollution including dust may result in changes in water quality within the wet habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;</li> <li>• Non-physical disturbance. Species present within the site may be subject to higher levels of disturbance from adjacent land uses;</li> <li>• Physical disturbance from increased access, bait digging, etc. This will result if there is a direct impact on the European site; and,</li> <li>• Noise and visual impacts from increased access and change in landscape near to the site.</li> </ul>
<p><b>Duddon Estuary</b></p>	<p>Ramsar Criterion 2:</p>	<p>None stated within the citation.</p>	<p>As above for Duddon Estuary SPA. Changes in water</p>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
<p><b>Ramsar Site</b></p> <p><b>Cumbria</b></p> <p>6806.3ha</p> <p>Comprises: Sandscale Haws NNR North Walney NNR Duddon Estuary SSSI</p>	<ul style="list-style-type: none"> <li>Supports nationally important numbers of natterjack toad (<i>Bufo calamita</i>), near the northwestern edge of its range (an estimated 18-24% of the population). Supports a rich assemblage of wetland plants and invertebrates, at least one nationally scarce plant and at least two British Red Data List invertebrates.</li> </ul> <p>Ramsar Criterion 4: The site supports nationally important numbers of waterfowl during spring and autumn passage.</p> <p>Ramsar Criterion 5: Assemblages of birds of international importance.</p> <ul style="list-style-type: none"> <li>Peak Counts in winter of 26326 waterfowl (5 year peak mean 1998/99-2002/2003).</li> </ul> <p>Ramsar Criterion 6: Species/populations occurring at levels of international importance including:</p> <ul style="list-style-type: none"> <li>Northern pintail</li> <li>Red knot (<i>Calidris canutus islandica</i>).</li> </ul>		<p>quality, increased access, or adjacent land use may adversely impact the populations of natterjack toad, breeding birds, invertebrates and wetland plants for which the site is designated.</p>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
	<ul style="list-style-type: none"> <li>Common redshank (<i>Tringa totanus totanus</i>).</li> </ul>		
<b>European Sites Within 20km of Copeland Borough Boundary</b>			
<p><b>Morecambe Bay SAC</b></p> <p><b>Cumbria, Lancashire.</b></p> <p>61506.22ha</p> <p>Contains: Duddon Estuary SSSI South Walney and Piel Channel Flats SSSI Lune Estuary SSSI Sandscale Haws NNR North Walney NNR Wyre Estuary SSSI Roudesa Woods and Mosses SSSI Morecambe Bay SSSI</p>	<p>Annex 1 habitats:</p> <ul style="list-style-type: none"> <li>Estuaries.</li> <li>Mudflats and sandflats not covered by seawater at low tide.</li> <li>Large shallow inlets and bays.</li> <li>Perennial vegetation of stony banks.</li> <li>Salicornia and other annuals colonising mud and sand.</li> <li>Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>).</li> <li>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes').</li> <li>Fixed dunes with herbaceous vegetation ('grey dunes').</li> <li>Humid dune slacks.</li> <li>Sandbanks which are slightly covered by sea water all the time.</li> <li>Coastal lagoons.</li> <li>Reefs.</li> </ul>	<p>There are a wide range of pressures on Morecambe bay but the site is relatively robust and many of these pressures have only slight or local effects on its interest. The interests depend largely upon the coastal processes operating within the bay, which have been affected historically by human activities including coastal protection and flood defence works. The saltmarsh is traditionally grazed and generally in favourable condition for its bird interest. Most of the saltmarsh is traditionally grazed and is utilised by breeding, wintering and migrating birds for feeding, roosting and nesting purposes. Positive management is being secured through NGO Reserve Management Plans, Natural England Site Management Statements and Coastal Wildlife Enhancement Scheme, the European Marine Site Management Schemes for the Duddon Estuary and Morecambe Bay, and the Duddon Estuary and Morecambe Bay Partnerships. These aim for the sustainable use of the site, taking account of other potential threats to the site including commercial fisheries, aggregate extraction, gas exploration, recreation and other activities.</p>	<p>The site is outside the Copeland Borough Boundary and therefore impacts on the site will be indirect, along identified pathways.</p> <ul style="list-style-type: none"> <li>Water quality within the SAC may be affected by changes in water flow, contamination of groundwater sources, the use of chemicals and pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off;</li> <li>Increased air pollution including dust may result in changes in water quality within the wet habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;</li> <li>Physical disturbance from increased access, dog walkers, bait digging, etc. This will result if there is a direct impact on the European site; and,</li> <li>Noise and visual impacts from increased access and if the area changes in landscape near to the site.</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
	<ul style="list-style-type: none"> <li>Embryonic shifting dunes.</li> <li>Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>).</li> <li>Dunes with <i>Salix repen</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>).</li> </ul> <p>Annex II species:</p> <ul style="list-style-type: none"> <li>Great crested newt (<i>Triturus cristatus</i>).</li> </ul>		
<p><b>Morecambe Bay SPA</b></p> <p><b>Cumbria and Lancashire</b></p> <p>37404.6 ha</p> <p>Contains: South Walney and Piel Channel Flats SSSI Morecambe Bay SSSI Leighton Moss SSSI Lune Estuary SSSI Wyre Estuary SSSI</p>	<p>Article 4.1 Qualification:</p> <ul style="list-style-type: none"> <li><i>Strena sandvicensis</i> (3% of GB breeding population).</li> </ul> <p>Article 4.2 Qualification:</p> <ul style="list-style-type: none"> <li><i>Anas acuta</i> (4.7% of north-western European population).</li> <li><i>Anser brachyrhynchus</i> (1.1% of the world population).</li> <li><i>Arenaria interpres</i> (2.4% of the East Atlantic flyway population).</li> <li><i>Calidris alpina alpina</i> (3.8% of the East Atlantic flyway population).</li> <li><i>Calidris canutus</i> (8.5% of the East Atlantic flyway population).</li> </ul>	<p>The site is subject to a wide range of pressures such as land-claim for agriculture, overgrazing, dredging, over-fishing, industrial uses and unspecified pollution. However, overall the site is relatively robust and many of those pressures have only slight to local effects and are being addressed throughout management plans. The breeding tern interest is very vulnerable and the colony has recently moved to the adjacent Duddon Estuary.</p>	<p>As above for Morecambe Bay SAC. The breeding bird assemblages are vulnerable to changes in water quality which may impact on food assemblages and quantity. Avoidance of disturbance of the bird populations is also important to avoid by not increasing access, etc.</p>



European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
	<ul style="list-style-type: none"> <li>• <i>Haematopus ostralegus</i> (5.4% of the East Atlantic flyway population).</li> <li>• <i>Limosa lapponica</i> (2.6% of the East Atlantic flyway population).</li> <li>• <i>Numenius arquata</i> (3.9% of the East Atlantic flyway population).</li> <li>• <i>Pluvialis squatarola</i> (1.1% of the East Atlantic flyway population).</li> <li>• <i>Tadorna tadorna</i> (2.1% of the East Atlantic flyway population).</li> <li>• <i>Tringa totanus</i> (3.6% of the East Atlantic flyway population).</li> <li>• <i>Charadrius hiaticula</i> (1.5% of the international population).</li> </ul>		
<p><b>Morecambe Bay Ramsar Site</b></p> <p><b>Cumbria</b></p> <p>37404.6ha</p> <p>Contains: South Walney and Piel Channel Flats</p>	<p>Ramsar Criterion 4:</p> <ul style="list-style-type: none"> <li>• The site is a staging area for migratory waterfowl including internationally important numbers of passage of ringed plover (<i>Charadrius hiaticula</i>).</li> </ul> <p>Ramsar Criterion 5: Assemblages of</p>	<p>None listed within the citation.</p>	<p>As above for Morecambe Bay SAC.</p>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
SSSI Cockerham Marsh SSSI Morecambe Bay SSSI Leighton Moss SSSI Lune Estuary SSSI Wyre Estuary SSSI	international importance. Species peak count in winter is 223709 waterfowl. Ramsar Criterion 6: Species/populations occurring at levels of international importance including. Including species regularly supported during the breeding bird season including; <ul style="list-style-type: none"> <li>• Lesser black-backed gull (<i>Larus fuscus graellsii</i>).</li> <li>• Herring gull (<i>Larus argentatus argentatus</i>);</li> <li>• Sandwich tern.</li> </ul> Species with peak counts in spring/autumn including; <ul style="list-style-type: none"> <li>• Great cormorant (<i>Phalacrocorax carbo carbo</i>).</li> <li>• Common shelduck, (<i>Tadorna tadorna</i>).</li> <li>• Nothern pintail (<i>Anas acuta</i>).</li> <li>• Common eider (<i>Somateria mollissima mollissima</i>).</li> <li>• Eurasian oystercatcher (<i>Haematopus ostralegus</i>).</li> </ul>		

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
	<ul style="list-style-type: none"> <li>• Ringed plover;</li> <li>• Grey plover (<i>Pluvialis squatarola</i>).</li> <li>• Sanderling (<i>Calidris alba</i>).</li> <li>• Eurasian curlew (<i>Numenius arquata arquata</i>).</li> <li>• Common redshank (<i>Tringa totanus totanus</i>);</li> <li>• Ruddy turnstone (<i>Arenaria interpres interpres</i>).</li> <li>• Lesser black-backed gull (<i>Larus fuscus graellsii</i>).</li> </ul> <p>Species with peak counts in winter include:</p> <ul style="list-style-type: none"> <li>• Great crested grebe (<i>Podiceps cristatus cristatus</i>).</li> <li>• Pink-footed goose (<i>Anser brachyrhynchus</i>).</li> <li>• Eurasian pigeon (<i>Anas penelope</i>).</li> <li>• Common goldeneye (<i>Bucephala clangula</i>);</li> <li>• Red-breasted merganser (<i>Mergus serrator</i>).</li> <li>• European golden plover (<i>Pluvialis apricaria apricaria</i>).</li> </ul>		

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
	<ul style="list-style-type: none"> <li>Northern lapwing (<i>Vanellus vanellus</i>).</li> <li>Red knot (<i>Calidris canutus islandica</i>).</li> <li>Dunlin (<i>Calidris alpina alpina</i>).</li> <li>Bar-tailed godwit (<i>Limosa lapponica lapponica</i>).</li> </ul>		
<p><b>Borrowdale Woodland Complex SAC</b></p> <p><b>Cumbria</b></p> <p>667.83ha</p> <p>Contains: Scales Wood SSSI Seatoller Wood, Sourmilk Gill &amp; Seathwaite Graphite Mine SSSI Johnny Wood SSSI Stonethwaite Woods SSSI Lodore-Troutdale Woods SSSI Great Wood SSSI</p>	<p>Annex 1 habitats:</p> <ul style="list-style-type: none"> <li>Old sessile oak woods with Ilex and Blechnum in the British Isles.</li> <li>Bog woodland.</li> <li>Siliceous rocky slopes with <i>chasmophytic</i> vegetation.</li> </ul>	<p>There has been little regeneration of native woodland tree species to ensure the long-term survival of the woodlands, due to grazing pressures from domestic livestock.</p>	<p>The site is outside the Copeland Borough Boundary and therefore potential impacts on the site will be indirect.</p> <ul style="list-style-type: none"> <li>Increased air pollution including dust may result in changes in water quality within the bog habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by industrial processes and waste management facilities.</li> </ul>
<p><b>Ullswater Oakwoods SAC</b></p> <p><b>Cumbria</b></p>	<p>Annex 1 habitats:</p> <ul style="list-style-type: none"> <li>Old sessile oak woods with Ilex and Blechnum in the British Isles.</li> </ul>	<p>In recent decades there has been little natural regeneration of native woodland species to ensure the long-term survival of the woodlands. This is due to grazing pressures from domestic livestock and more recently Red deer in Low</p>	<p>The site is outside the Copeland Borough Boundary and therefore potential impacts on the site will be indirect.</p> <ul style="list-style-type: none"> <li>Increased air pollution including dust may result in changes in water quality within the bog habitats due to</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
Contains: Hallinagh Wood SSSI Glencoyne Wood SSSI Low Wood SSSI		Wood. However, the levels of grazing are important to maintain the bryophyte flora.	increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by industrial processes and waste management facilities.
<b>North Pennine Meadows SAC</b>  <b>Cumbria</b>  497.09ha  Contains: The site comprises 58 SSSIs, however, only one is within 20km of the Copeland Borough Boundary:  Wilson Place meadows SSSI	Annex 1 Habitats: <ul style="list-style-type: none"> <li>• Mountain hay meadows.</li> <li>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)</li> </ul>	These grasslands are dependent upon traditional agricultural management, with hay-cutting and no or minimal use of agrochemicals.	The site is outside the Copeland Borough Boundary and therefore potential impacts on the site will be indirect. <ul style="list-style-type: none"> <li>• Increased levels of dust caused by construction, industrial processes and waste management facilities.</li> </ul>
<b>Subberthwaite, Blawith &amp; Torver Low Commons SAC</b>	Annex 1 habitats: <ul style="list-style-type: none"> <li>• Transition mires and quaking bogs.</li> <li>• Depressions on peat</li> </ul>	The district comprises over 200 discrete mires set within agriculturally unimproved landscape. The mires are at or near favourable condition and would only be threatened by intensification of	The site is outside the Copeland Borough Boundary and therefore impacts on the site will be indirect. <ul style="list-style-type: none"> <li>• Water quality within the SAC may be affected by changes in water flow, contamination of groundwater</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
<p><b>Cumbria</b></p> <p>1865.17ha</p> <p>Contains: Subberthwaite, Blawith &amp; Torver Low Commons SSSI</p>	<p>substrates of the <i>Rhynchosporion</i>.</p>	<p>land-use on the surrounding commons or by interference with the site hydrology. Lowland heath is not listed as a SAC feature due to its degraded, unfavourable condition.</p>	<p>sources, the use of chemicals and pesticides in treatment processes, urbanisation, land management and development, leachate, treatment of waste water, increased pollutant loads and surface water run off;</p> <ul style="list-style-type: none"> <li>Increased air pollution including dust may result in changes in water quality within the bog habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by industrial processes and waste management facilities.</li> </ul>
<p><b>Yewbarrow Woods SAC</b></p> <p><b>Cumbria</b></p> <p>112.89ha</p> <p>Contains: Yewbarrow Woods SSSI</p>	<p>Annex I habitats:</p> <ul style="list-style-type: none"> <li><i>Taxus baccata</i> woods of the British Isles</li> <li><i>Juniperus communis</i> formations on heaths or calcareous grasslands</li> <li>Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles.</li> </ul>	<p>Although lack of regeneration is a problem resulting from browsing deer, woodland grants have been given in recent years to encourage years to encourage regeneration of native trees, together with funding for stockproof fencing.</p>	<p>The site is outside the Copeland Borough Boundary and therefore impacts on the site will be indirect.</p> <ul style="list-style-type: none"> <li>Increased air pollution. Increased levels of dust are caused by construction, industrial processes and waste management facilities.</li> </ul>
<p><b>Roudsea Wood and Mosses SAC</b></p> <p><b>Cumbria</b></p> <p>470.45ha</p> <p>Contains: Roudsea Wood and Mosses SSSI</p> <p>Roudsea Wood and</p>	<p>Annex 1 habitats</p> <ul style="list-style-type: none"> <li>Active raised bogs</li> <li>Degraded raised bogs still capable of natural regeneration</li> <li><i>Tilio-Acerion</i> forests of slopes, screes and ravines</li> <li><i>Taxus baccata</i> woods of the British Isles</li> </ul>	<p>Much of the site is overgrown with scrub, but ongoing management of the National Nature Reserve has resulted in much of the scrub been cleared from Deer Dyke Moss. Ditches across the site have been blocked to allow regeneration of bog vegetation.</p>	<p>The site is outside the Copeland Borough Boundary and therefore impacts on the site will be indirect.</p> <ul style="list-style-type: none"> <li>Increased air pollution including dust may result in changes in water quality within the bog habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by industrial processes and waste</li> </ul>

European site	Qualifying features	Vulnerability/pressures	Potential Impacts on Natura 2000 Sites (These are non-specific given lack of proposals)
Mosses NNR			management facilities.
<b>River Kent SAC</b>  <b>Cumbria</b>  109.12ha  Contains: River Kent and Tributaries SSSI	Annex 1 Habitats • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. Annex 1 species: • White-clawed (or Atlantic stream) crayfish ( <i>Austropotamobius pallipes</i> ) • Freshwater pearl mussels Bullhead ( <i>Cottus gobio</i> ).	Some areas of the site suffer from poor habitat quality. A particular problem within the River Kent and affecting white-clawed crayfish is the use of pyrethroid sheep-dip pollution of water courses. The population of freshwater pearl mussels is also reducing.	The site is outside the Copeland Borough Boundary and therefore impacts on the site will be indirect. • Increased air pollution including dust may result in changes in water quality within the bog habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;
<b>Esthwaite Water Ramsar Site</b>  <b>Cumbria</b>  137.4ha	Ramsar Criterion 1: Esthwaite Water is a good example of a mesotrophic lake, with a well developed hydrosere at the northern end. Ramsar Criteria 2: The lake supports a rich assemblage of pondweed species and is the only known locality in England and Wales for slender naiad <i>Najas flexilis</i> . The diverse aquatic fauna includes a number of species with restricted distributions in Britain.	The site condition is unfavourable because of eutrophication, occurring as a result of pollution from aquaculture and domestic sewage. Recent surveys have shown significant deterioration of the aquatic macrophyte flora as well as adverse changes in water chemistry.	The site is outside the Copeland Borough Boundary and therefore impacts on the site will be indirect. • Increased air pollution including dust may result in changes in water quality within the bog habitats due to increased levels of nitrogen, sulphur dioxide and ammonia. Increases in these toxic gases are caused by domestic and commercial road use, road transport, public power generation using fossil fuels and combustion in industrial processes. Increased levels of dust are caused by construction, industrial processes and waste management facilities;