Northumberland County Council

ACOMB

NEIGHBOURHOOD PLAN:

SUBMISSION PLAN MARCH 2018

HABITATS REGULATIONS

ASSESSMENT REPORT

APRIL 2018

Northumberland County Council

Contents

1. Introduction

Purpose of the Habitats Regulations Assessment Report

1.1 Acomb Parish Council are leading the preparation of a neighbourhood development plan (the Plan) to provide locally specific planning policies intended to address issues identified as being important to the local community, particularly where those issues are perceived as not being adequately addressed through existing planning policies.

1.2 As the 'competent authority' under the Conservation of Habitats and Species Regulations 2017, Northumberland County Council is required to assess its policies and plans through the Habitats Regulations Assessment (HRA) process. The purpose of a HRA is to assess possible effects of the plan or policy on the nature conservation interests of sites designated under the Habitats and Wild Birds Directives. These sites consist of Special Areas of Conservation, Special Protection Areas (including Marine Special Protection Areas) and also include Ramsar Sites. The integration of the HRA process as part of the preparation of the Neighbourhood Plan is fundamental to the plan making process as policies in the plan can potentially affect designated sites.

Format of the Habitats Regulations Assessment Report

1.3 This HRA Report concerns the Acomb Neighbourhood Plan Submission Plan (March 2018). The HRA Report includes the following:

- Scope of the HRA and work undertaken to date. HRA requirements and process;
- Stage 1A: Identifies the European sites;
- Stage 1B: Identifies the Trend Analysis;
- Stage 1C: Analysis of proposals and polices in the Whittington Neighbourhood Plan - Identification of Likely Significant Effects;
- Conclusion;
- Bibliography;
- Formal response from Natural England following consultation on HRA Screening Opinion.

Habitats Regulation Assessment Consultation

1.4 It is a requirement of the Habitats Regulations to consult the appropriate nature conservation statutory body (Natural England). Consultation has taken place and Natural England confirm their agreement with the County Council, in their letter dated 26the April 2018, that the Acomb Neighbourhood Plan can be screened out of further stages of assessment.

1.5 This HRA report will be issued to Acomb Parish Council to assist in supporting the submission of their Plan to the County Council and to assist the independent examination of the Plan in due course.

2. Habitats Regulations Assessment Requirements and Process

2.1 As a member of the European Union, the UK is bound by the terms of the Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) and the Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna (the Habitats Directive). These are implemented in the UK through the Conservation (Natural Habitats &c) Regulations which provide for the protection of areas of European importance for wildlife, in the form of Special Areas of Conservation (SACs), designated under the Habitats Directive, and Special Protection Areas (SPAs), designated under the Birds Directive. Collectively, these are termed European sites, and the overall network of European sites is termed Natura 2000.

2.2 The UK is also a signatory to the Convention on wetlands of international importance especially as waterfowl habitat, which was signed in Ramsar, Iran in 1971. Areas designated under this Convention are called Ramsar sites. Although Ramsar sites are not European sites as a matter of law, the Government has chosen as a matter of policy to protect and manage them by applying the same procedures to them. Consequently, Ramsar sites are treated as European sites in practice.

2.3 Articles 6(3) and 6(4) of the Habitats Directive states the following concerning European sites:

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

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted."

2.4 For some time, it was the view of the UK Government that land-use plans did not require appropriate assessment. However in October 2005, the European Court of Justice (ECJ) ruled that land-use plans should be subject to appropriate assessment

under the Habitats Directive. The implications of the ECJ ruling were communicated to Local and Minerals Planning Authorities in a letter from the Government in March 2006, and in 2007 the Habitats Regulations were amended accordingly. The Conservation of Habitats and Species Regulations 2017 states that:

"Where a land use plan -

(a) is likely to have a significant effect on a European site in Great Britain or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of the site,

the plan-making authority for that plan shall, before the plan is given effect, make an appropriate assessment of the implications for the site in view of that site's conservation objectives."

2.5 The purpose of a HRA is to demonstrate that a land-use plan (or other plan or project) will not have any adverse effects on the integrity of any European sites. The assessment determines whether the plan would adversely affect the integrity of any European site in terms of its conservation objectives. Where adverse effects are identified alternative solutions should be identified and the plan modified to avoid any adverse effects. The Planning Authority can adopt the plan only after having ascertained that it will not adversely affect the integrity of a European site.

2.6 When preparing a suite of development plan documents, it is important that the HRA is undertaken in a way that is proportionate to the level of the document. This was noted in the Advocate General's opinion which informed the European Court of Justice in the 2005 judgement that confirmed that land use plans should be subject to HRA. This stated that:

"The United Kingdom Government is admittedly right in raising the objection that an assessment of the implications of the preceding plans cannot take account of all the effects of a measure. Many details are regularly not settled until the time of the final permission. It would also hardly be proper to require a greater level of detail in preceding plans or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure."[1]

2.7 The European Commission's own guidance on the application of the test of likely significant effect accepts that policies in a plan that are no more than general policy

[1] Opinion of Advocate General Kokott, 9th June 2005, Case C-6/04. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland , paragraph 49. http://curia.europa.eu/juris/document/document.jsf?docid=58359&doclang=EN

statements or which express the general political will of an authority cannot be likely to have a significant effect on a site.[2]

2.8 This issue has also been addressed in the High Court case of Feeney, in which the judge stated that:

> *"A core strategy is a high level strategic document and the detail falls to be worked out at a later stage. Each appropriate assessment must be commensurate to the relative precision of the plans at any particular stage and no more. There does have to be an appropriate assessment at the Core Strategy stage, but such an assessment cannot do more than the level of detail of the strategy at that stage permits"* [3]

2.9 Therefore, there is a balance to be struck between being sufficiently rigorous in the assessment of potential effects, and undertaking a lot of unnecessary work or even causing a plan to fail the appropriate assessment test of 'adverse effect on site integrity' on the basis of risks that are more hypothetical than real, or risks that are too poorly defined at this stage of Development Plan preparation.

2.10 The Feeney case has also provided helpful guidance concerning the role of protective policies for European sites or protective wording within policies. It is clear that a general protective policy in itself cannot be regarded as adequate mitigation for any significant effects, because planning applications must be determined in accordance with the Development Plan. Therefore relying too heavily on a general protective policy can just create internal conflicts with other policies within the Plan.

2.11 However, an element of a policy that safeguards European sites or a policy qualifying a particular proposal so as to avoid likely significant effect has been found to be permissible[4], as has adopting something in principle that will not actually happen if the protective condition or qualification is not being satisfied[5]. However, it is essential that such safeguards are sufficiently specific that they are not just general safeguards apply to a range of European sites and a range of effects.

Assessment Methodology to meet the requirements of the Habitats Directive

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[2] European Commission, 2000, *Managing Natura 2000 Sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC* section 4.3.2 at http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

[3] Sean Feeney v Oxford City Council and the Secretary of State CLG para 92 of the judgment dated 24 October 2011 Case No CO/3797/2011, Neutral Citation [2011] EWHC 2699 Admin http://www.oxford.gov.uk/Library/Documents/Barton%20AAP/Barton%20AAP%20CD%207.20.1%20Appendix%20Feeney%20v%20OCC%202011.pdf

[4] Feeney; paragraphs 88, 90 and 92

[5] Feeney; paragraph 96

2.12 The Council has adopted the following assessment methodology to meet the requirements of the Habitats Directive:

Stage One – Screening

This comprises an initial analysis to determine whether the Acomb Neighbourhood Plan is likely to have a significant effect on any European sites. The Neighbourhood Plan will require appropriate assessment unless it is certain that it will not have a significant effect on any European sites.

- **Stage 1A:** Identification of European sites relevant to the assessment, and analysis of them in terms of reasons for designation, factors affecting their integrity and trends affecting them;
- **Stage 1B:** Identification of underlying trends that could affect the integrity of sites;
- **Stage 1C:** Analysis of the Neighbourhood Plan objectives, proposals and proposed policies in terms of their possible adverse effects on the integrity of European sites, examination of options and alternatives to avoid or reduce these effects;
- **Stage 1D:** Identification of other plans and projects relevant to the assessment, to identify any likely in-combination effects. Article 6(3) of the Habitats Directive requires that plans and projects likely to have a significant effect on a European site alone or in combination with other plans or projects shall be subject to appropriate assessment.

3. Stage 1A: Identification of European sites

3.1 The following European sites are wholly or partly within Northumberland (including the National Park[6]) or are considered to have the potential to be affected by the Neighbourhood Plan, and so are within the scope of the Habitats Regulations Assessment:

Special Areas of Conservation wholly or partly within Northumberland:

- Berwickshire and North Northumberland Coast;
- Border Mires, Kielder – Butterburn;
- Ford Moss;
- Harbottle Moors;
- Newham Fen;
- North Northumberland Dunes;
- North Pennine Dales Meadows;
- North Pennine Moors;
- River Eden;
- River Tweed;
- Roman Wall Loughs;
- Simonside Hills;
- Tweed Estuary;
- Tyne and Allen River Gravels

Special Areas of Conservation outside of Northumberland:

- Bolton Fell Moss (candidate SAC), Cumbria;
- Borders Woods, Scottish Borders;
- Durham Coast, Durham;
- Moor House – Upper Teesdale, Durham;
- St Abb's Head to Fast Castle, Scottish Borders;
- Tyne and Nent, Cumbria;
- Thrislington, Durham;
- Castle Eden Dene, Durham

Special Protection Areas wholly or partly within Northumberland:

- Coquet Island;
- Farne Islands;
- Holburn Lake and Moss;
- Lindisfarne;
- North Pennine Moors;

[6] Details of the European sites within the Northumberland National Park can be found at: http://www.northumberlandnationalpark.org.uk/__data/assets/pdf_file/0018/144450/ldf_08_core_strategy_appropriate_assessment.pdf

- Northumbria Coast;
- Northumberland Marine SPA

Special Protection Areas outside of Northumberland

- Langholm – Newcastleton Hills;
- St Abb's Head to Fast Castle, Scottish Borders;
- Teesmouth and Cleveland Coast

Ramsar Sites wholly or partly within Northumberland

- Holburn Lake and Moss;
- Irthinghead Mires;
- Lindisfarne;
- Northumbria Coast

Ramsar Sites outside of Northumberland

- Teesmouth and Cleveland Coast.

Stage 1A: Site Analysis

3.2 This stage of the assessment details the reasons that relevant European sites have been designated (the qualifying features), the objectives intended to be achieved by designating and managing the sites, and the environmental conditions that are key to maintaining the integrity of the site. Guidance from the European Commission states that 'a site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required' (EC, 2000; para 4.6.3). An asterisk * beside a qualifying feature indicates that the feature is listed as a priority habitat on Annex I of the Habitats Directive.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Berwickshire and North Northumberland Coast SAC	Large shallow inlets and bays Intertidal mudflats and sandflats Reefs Submerged or partially submerged sea caves Grey seal	Subject to natural change, to maintain in (or restore to) favourable condition the – Extent, distribution, diversity and species richness of reef communities. Diversity of sea cave communities and their characteristic zonation. The extent of eelgrass and mussel communities and the diversity of infaunal communities in the intertidal mud and sandflats Grey seal habitats, especially the extent and suitability of breeding habitat on the Farne Islands	Reefs – no significant change in water clarity (e.g. due to increases in suspended material), temperature or salinity, or in the distribution of rocky shore communities. Sea caves – no significant change in water clarity (e.g. due to increases in suspended material), temperature or salinity, or in the distribution of sea cave biotypes. Intertidal mud or sandflats – no reduction in extent, no significant change in sediment character (particle size composition, organic content) ensuring no increase in the extent of algal mats or significant changes in the distribution and abundance of eelgrass beds, mussel beds or distribution of infaunal biotopes. Grey seal habitats – human disturbance low enough to avoid reduction in numbers or displacement from key areas; no reduction in extent of rocky and coarse sediment shores used for breeding and hauling out.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Border Mires Kielder – Butterburn SAC	Blanket bogs * Petrifying springs with tufa formation* European dry heaths Northern Atlantic wet heaths with Erica tetralix Transition mires and quaking bogs	To maintain the qualifying features in favourable condition (or restore them to favourable condition)	Blanket bog – high water table, low grazing levels, absence of burning, absence or low levels of human activity that cause erosion (e.g. military activities, recreational pressure), no peat extraction, absence of plantation conifers from hydrological unit or self-seeded conifers from peat body, low atmospheric or aquatic nutrient inputs. Petrifying springs – active tufa deposition from very base-rich water, low fertility, no damage to tufa from human or livestock trampling. Dry heath – grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs. Wet heath – grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs. Transition mires – high water table, balance between seepage and surface water maintained, enriched water from land drainage or surface run-off excluded, low atmospheric nutrient inputs.
Ford Moss SAC	Active raised bog *	To maintain in (or restore to) favourable condition the active raised bog	High water table, infrequent scrub or bracken, low atmospheric or aquatic nutrient inputs.
Harbottle Moors SAC	European dry heaths	To maintain in (or restore to) favourable condition the dry heathland.	Grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs.
Newham Fen SAC	Alkaline fens	To maintain in (or restore to) favourable condition the alkaline fen, with particular reference to the M13 mire.	Flow of spring water sufficient to maintain high water levels at all times of year, spring water of low nutrient status.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
North Northumberland Dunes SAC	Fixed dunes with herbaceous vegetation * Dunes with creeping willow Embryonic shifting dunes Humid dune slacks Shifting dunes with marram Petalwort	Subject to natural change, to maintain in (or restore to) favourable condition the listed habitats. To maintain in (or restore to) favourable condition, the habitats for the population of Petalwort.	Fixed dunes – appropriate grazing levels to maintain species and structural diversity, no increase in area occupied by invasive species e.g. Dunes with creeping willow – maintain active successional processes. Embryonic shifting dunes – sufficient area between high water mark and stable dunes to allow development of embryonic dunes, presence of beach plain at low tide to supply blown sand Humid dune slacks – maintenance of hydrological regime Shifting dunes with marram -sufficient area between high water mark and stable dunes to allow development of embryonic dunes, presence of beach plain at low tide to supply blown sand, no increase in linear extent or area constrained by introduced structures or landforms, no increase in area where vegetation establishment is prevented by human activity. Petalwort – maintenance of very short vegetation in dune slacks
North Pennine Dales Meadows SAC	Mountain hay meadows Molinia meadows	To maintain in (or restore to) favourable condition the mountain hay meadows.	Low nutrient inputs from farmyard manure only; sufficient removal of biomass, low level of poaching.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
North Pennine Moors SAC	Alkaline fens Blanket bogs * Calaminarian grasslands Calcareous rocky slopes with chasmophytes European dry heaths Juniper Northern atlantic wet heaths Old sessile oak woods Petrifying springs with tufa formation* Dry grassland and scrub on calcareous substrates Montane acid grasslands Siliceous rocky slopes with chasmophytic vegetation Siliceous scree Marsh saxifrage	To maintain in (or restore to) favourable condition the qualifying features.	Blanket bog – high water table, low grazing levels, absence of burning, absence or low levels of human activity that cause erosion (e.g. military activities, recreational pressure), low atmospheric or aquatic nutrient inputs. Petrifying springs – active tufa deposition from very base-rich water, low fertility, no damage to tufa from human or livestock trampling. Dry heath – grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs. Wet heath – grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs. Alkaline fens – maintenance of high piezometric head and low fertility, low levels of disturbance by livestock trampling or vehicles. Chasmophytic vegetation and scree – low levels of trampling by humans or livestock. Calaminarian grassland – very low nutrient inputs, appropriate grazing levels, continuation of extreme conditions of toxicity and drought stress. Old oak woods – browsing/grazing by native/non-native/agricultural ungulates low enough to permit regeneration and avoid undesirable shifts in stand composition or structure, low levels of pollution including eutrophication from adjacent farmland.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
River Eden SAC	Floating formations of water crowfoot Oligotrophic to mesotrophic standing waters Residual alluvial forests Atlantic salmon Bullhead Brook lamprey River lamprey Sea lamprey White-clawed crayfish Otter	To maintain in (or restore to) favourable condition the: Floating formations of water crowfoot Oligotrophic to mesotrophic standing waters Residual alluvial forest To maintain in (or restore to) favourable condition, the habitats for the populations of: Atlantic salmon Bullhead Brook lamprey River lamprey Sea lamprey White-clawed crayfish Otter	Water crowfoot – near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels, low phosphorus, characteristic river form maintained Atlantic salmon - near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels, bankside trees with submerged roots maintained, characteristic river form maintained, no obstructions to migration, no stocking of salmonids. Bullhead - near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels Lampreys - near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels, extensive riparian vegetation, characteristic river form, no artificial barriers to migration. White-clawed crayfish - near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels, little fish stocking, none from plague rivers Otter - near-natural baseflows and flushing flows, high water quality, low suspended solids, undisturbed areas with dense riparian vegetation and vegetated islands, good fish populations. Alluvial woodland – grazing pressure low enough to maintain characteristic ground flora and permit regeneration

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
River Tweed SAC	Floating formations of water crowfoot Atlantic salmon Brook lamprey River lamprey Sea lamprey Otter	To maintain in (or restore to) favourable condition the river as a habitat for the qualifying interest features	Water crowfoot – near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels, low phosphorus, characteristic river form maintained Atlantic salmon - near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels, bankside trees with submerged roots maintained, characteristic river form maintained, no obstructions to migration, no stocking of salmonids. Lampreys - near-natural baseflows and flushing flows, high water quality, low suspended solids, clean gravels, extensive riparian vegetation, characteristic river form, no artificial barriers to migration Otter - near-natural baseflows and flushing flows, high water quality, low suspended solids, undisturbed areas with dense riparian vegetation and vegetated islands, good fish populations.
Roman Wall Loughs SAC	Naturally eutrophic lakes with pondweed vegetation	To maintain in (or restore to) favourable conservation status the qualifying features	Water quality maintained within appropriate parameters, sedimentation rates not increased by primary productivity being elevated by anthropogenic eutrophication.
Simonside Hills SAC	Blanket bogs * European dry heaths	To maintain in (or restore to) favourable condition the qualifying features	Blanket bog – high water table, low grazing levels, absence of burning, absence or low levels of human activity that cause erosion (e.g. military activities, recreational pressure), low atmospheric or aquatic nutrient inputs. Dry heaths - grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs.
Tweed Estuary SAC	Estuaries Intertidal mudflats and sandflats River lamprey Sea lamprey	Subject to natural change, to maintain in (or restore to) favourable condition the estuaries and intertidal mud and sandflats To maintain in (or restore to) favourable condition the habitats for the populations of river and sea lampreys.	Nutrient inputs maintained within appropriate levels (large arable catchment) No coast protection works undertaken that would cause adverse impacts on qualifying features. Dredging in Tweed Dock undertaken without causing adverse impacts on qualifying features.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Tyne and Allen River Gravels SAC	Calaminarian grassland	To maintain in (or restore to) favourable condition the Calaminarian grassland	Appropriate grazing levels to maintain key species and bare ground, continuation of extreme conditions of toxicity and drought stress.
Bolton Fell Moss cSAC	Active raised bogs* Degraded raised bogs still capable of regeneration	To maintain in favourable condition the active raised bog, and to restore to favourable condition the degraded raised bogs.	High water table, infrequent scrub or bracken, low atmospheric or aquatic nutrient inputs.
Borders Woods SAC	Tilio-Acerion forests of slopes, screes and ravines*	To maintain in (or restore to) favourable condition the qualifying features	No reduction in area, reduction in abundance of introduced sycamore
Durham Coast SAC	Vegetated sea cliffs	To maintain in (or restore to) favourable condition the qualifying features	No increase in area constrained by introduced structures or landforms. Maintenance of natural processes, especially exposure to salt spray, erosion and slippage of soft magnesium limestone bedrock and overlying glacial drifts, localised flushing by calcareous water.
St Abb's Head to Fast Castle SAC	Vegetated sea cliffs of the Atlantic and Baltic coasts	To maintain in (or restore to) favourable condition the qualifying features	Continued visitor management to prevent recreational damage, maintenance of vegetation structure and composition.
Tyne and Nent SAC	Calaminarian grasslands	To maintain in (or restore to) favourable condition the Calaminarian grassland	Appropriate grazing levels to maintain key species and bare ground, continuation of extreme conditions of toxicity and drought stress.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Moor House – Upper Teesdale SAC	Oligo-mesotrophic waters with Chara spp. Alpine and boreal heaths Alkaline fens Blanket bogs * Calaminarian grasslands Calcareous rocky slopes with chasmophytic vegetation European dry heaths Juniper scrub Petrifying springs with tufa formation* Dry grassland and scrub on calcareous substrates Siliceous rocky slopes with chasmophytic vegetation Siliceous montane screes Siliceous alpine and boreal	To maintain in (or restore to) favourable condition the qualifying features	Blanket bog – high water table, low grazing levels, absence of burning, absence or low levels of human activity that cause erosion (e.g. military activities, recreational pressure), low atmospheric or aquatic pollution or nutrient inputs. Petrifying springs – active tufa deposition from very base-rich water, low fertility, no damage to tufa from human or livestock trampling. Dry heath – grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs. Wet heath – grazing pressure not limiting dwarf shrub cover, mosaic of small burns and unburnt areas if burnt, low atmospheric or aquatic nutrient inputs. Alkaline fens – maintenance of high piezometric head and low fertility, low levels of disturbance by livestock trampling or vehicles. Chasmophytic vegetation and scree – low levels of trampling by humans or livestock. Calaminarian grassland – very low nutrient inputs, appropriate grazing levels, continuation of extreme conditions of toxicity and drought stress. Oligo-mesotrophic waters - water quality maintained within appropriate parameters, sedimentation rates not increased by primary productivity being elevated by anthropogenic eutrophication. Mountain hay meadows and Molinea meadows - low nutrient inputs from farmyard manure only; sufficient removal of biomass, low level of poaching.

Moor House – Upper Teesdale SAC	grasslands Molinia meadows Hydrophilous tall herb fringe communities Mountain hay meadows Alpine pioneer formations of the Caricion bicoloris-atrofuscae * Calcareous montane screes Limestone pavements * Round-mouthed whorl snail Marsh saxifrage		
St Abb's Head to Fast Castle SAC	Vegetated sea cliffs of the Atlantic and Baltic coasts	To maintain in (or restore to) favourable condition the qualifying features	Continued visitor management to prevent recreational damage, maintenance of vegetation structure and composition.
Tyne and Nent SAC	Calaminarian grasslands	To maintain in (or restore to) favourable condition the Calaminarian grassland	Appropriate grazing levels to maintain key species and bare ground, continuation of extreme conditions of toxicity and drought stress.
Coquet Island SPA	Populations of Annex 1 species of European importance: Arctic tern Sandwich tern Common tern Roseate tern	To maintain in (or restore to) favourable condition the habitats for the populations of migratory species; arctic tern, common tern, roseate tern and sandwich tern.	Little or no human disturbance No significant reduction in breeding productivity due to predation by large gulls, mixture of bare ground/short vegetation and longer vegetation, open terrain

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Farne Islands SPA	Populations of Annex 1 species of European importance: Arctic tern Sandwich tern Common tern	To maintain in (or restore to) favourable condition the habitats for the breeding populations of sandwich tern, common tern, arctic tern.	Little or no human disturbance No significant reduction in breeding productivity due to predation by large gulls, mixture of bare ground/short vegetation and longer vegetation, open terrain.
Holburn Lake and Moss SPA	Wintering greylag goose roost	To maintain in (or restore to) favourable condition the raised mire and dry heathland used by greylag goose	Human disturbance absent or at very low levels, no significant reduction in view lines in roosting area.
Lindisfarne SPA	Populations of Annex 1 species of European importance: Little tern, Roseate tern,Whooper swan Golden plover Regularly occurring migratory species of European importance: Purple sandpiper Turnstone, Greylag goose, Light-bellied Brent goose, Widgeon Ringed plover, Bar-tailed godwit Redshank Wintering wildfowl assemblage of European importance	To maintain in (or restore to) favourable condition the intertidal mudflats and sandflats, saltmarsh, eelgrass beds and sand dunes for the populations of Annex 1 species; To maintain in (or restore to) favourable condition rocky shores with boulder and cobble beaches, intertidal mudflats and sandflats, saltmarsh and eelgrass beds for the regularly occurring migratory species; To maintain in (or restore to) favourable condition the intertidal sandflats and mudflats, saltmarsh, eelgrass beds and rocky shores for the wintering wildfowl.	All features – no significant increase in human disturbance Annex 1 species – extent and quality of feeding habitat - eelgrass beds and saltmarsh (for whooper swan), mudflats and sandflats (for golden plover), no increase in obstructions to viewlines (whooper swan and golden plover); maintenance of sparsely vegetated dunes for nesting (little tern). Migratory species – extent and quality of rocky shore feeding and roosting habitat (purple sandpiper and turnstone), no increase in obstructions to existing viewlines (all geese and waders), extent and quality of eelgrass beds (light bellied Brent goose and widgeon), extent and quality of sandflats and mudflats (roosting for many species, feeding especially for ringed plover, bar tailed godwit and redshank),

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
North Pennine Moors SPA	Internationally important breeding populations of Annex 1 species: Hen harrier Merlin Peregrine Golden plover	To maintain in (or restore to) favourable condition the upland moorland for the populations of Annex 1 species.	Low levels of human disturbance (heather burning, vehicles, livestock, dogs, people), especially between April and mid-July, and no illegal persecution or egg collection. Abundance of small birds and day-flying moths; areas of tall heather and scattered 0.5 -2ha tree clumps especially on slopes (merlin) Abundance of small mammals and small–medium sized birds; tall heather especially on slopes for nesting and grassland and grass-heath mosaics for feeding (hen harrier) Abundance of small-medium sized birds (peregrine) Abundance of earthworms, leatherjackets, beetles and spiders; maintenance of areas of short grassland, grassland with bracken and burnt heather especially on flatter plateaux, with extensive unobstructed views (golden plover)
Northumbria Coast SPA	Internationally important breeding population of little tern Internationally important wintering populations of purple sandpiper and turnstone	To maintain in (or restore to) favourable condition the sand dunes for the breeding population of little tern; To maintain in (or restore to) favourable condition rocky shores with boulder and cobble beaches for wintering purple sandpiper and turnstone.	All features – no significant increase in human disturbance or that caused by off-lead dogs. Maintenance of sparsely vegetated dunes for nesting (little tern). Extent and quality of rocky shore feeding and roosting habitat (purple sandpiper and turnstone)

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Northumberland Marine pSPA	Internationally important breeding populations of Annex 1 species: Sandwich tern Roseate tern Common tern Arctic tern Little tern Common guillemot Atlantic puffin An internationally important seabird assemblage of over 20,000 birds	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; The extent and distribution of the habitats of the qualifying features The structure and function of the habitats of the qualifying features The supporting processes on which the habitats of the qualifying features rely The population of each of the qualifying features, and, The distribution of the qualifying features within the site.	Not available yet
Langholm – Newcastleton Hills SPA	Internationally important population of Annex 1 species: Hen harrier	To maintain in (or restore to) favourable condition the upland moorland for the populations of Annex 1 species	Low levels of human disturbance (heather burning, vehicles, livestock, dogs, people), especially between April and mid-July, and no illegal persecution or egg collection. Abundance of small mammals and small–medium sized birds; tall heather especially on slopes for nesting and grassland and grass-heath mosaics for feeding

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
St Abb's Head to Fast Castle SPA	Annex 1 breeding species: Common Guillemot Internationally important assemblage of breeding seabirds: Fulmar Cormorant Shag Herring Gull Kittiwake Guillemot Razorbill Puffin	To maintain in (or restore to) favourable condition the site for the populations of Annex 1 species and species included in the internationally important assemblage of species.	Continued visitor management to prevent recreational disturbance.
Holburn Lake and Moss Ramsar Site	Lowland raised bog Winter roost for internationally important numbers of greylag goose Inland roost for mallard, widgeon and teal during unfavourable weather.	To maintain in (or restore to) favourable condition the raised bog To maintain in (or restore to) favourable condition the habitats for the roosting wildfowl populations	High water table, infrequent scrub or bracken, low atmospheric or aquatic nutrient inputs (raised bog). Human disturbance absent or at very low levels, no significant reduction in view lines in roosting area (roosting wildfowl).

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Irthinghead Mires Ramsar Site	Active blanket bog Notable variety of Sphagnum mosses Rare species: Carex magellanica Sphagnum imbricatum S. pulchrum S. magellanicum Eboria caliginosa	To maintain in (or restore to) favourable condition the blanket bog.	High water table, low grazing levels, absence of burning, absence or low levels of human activity that cause erosion (e.g. military activities, recreational pressure), no peat extraction, absence of plantation conifers from hydrological unit or self-seeded conifers from peat body, low atmospheric or aquatic nutrient inputs.
Lindisfarne Ramsar Site	Extensive intertidal flats, saltmarsh and major sand dune system with well-developed dune slacks. Wintering waterfowl assemblage of international importance. Internationally important migratory/wintering populations of Light-bellied Brent goose, Widgeon Ringed plover Redshank, Greylag goose, Bar-tailed godwit. Rare plants: Petalwort Lindisfarne helleborine (endemic on Lindisfarne)	To maintain in (or restore to) favourable condition intertidal mudflats and sandflats, saltmarsh and eelgrass beds for the regularly occurring migratory and wintering species. Subject to natural change, to maintain in (or restore to) favourable condition the sand dune system. To maintain in (or restore to) favourable condition, the habitats for the populations of Petalwort and dune helleborine.	No significant increase in human disturbance, no increase in obstructions to existing viewlines (all species), extent and quality of eelgrass beds (light bellied Brent goose and widgeon), extent and quality of sandflats and mudflats (roosting for many species, feeding especially for ringed plover, bar tailed godwit and redshank). Fixed dunes – appropriate grazing levels to maintain species and structural diversity, no increase in area occupied by invasive species e.g. pirri-pirri bur. Dunes with creeping willow – maintain active successional processes. Embryonic shifting dunes – sufficient area between high water mark and stable dunes to allow development of embryonic dunes, presence of beach plain at low tide to supply blown sand Humid dune slacks – maintenance of hydrological regime Shifting dunes with marram -sufficient area between high water mark and stable dunes to allow development of embryonic dunes, presence of beach plain at low tide to supply blown sand, no increase in linear extent or area constrained by introduced structures or landforms, no increase in area where vegetation establishment is prevented by human activity. Petalwort – maintenance of very short vegetation in dune slacks

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Northumbria Coast Ramsar Site	Internationally important breeding population of little tern Internationally important wintering populations of purple sandpiper and turnstone	To maintain in (or restore to) favourable condition the sand dunes for the breeding population of little tern; To maintain in (or restore to) favourable condition rocky shores with boulder and cobble beaches for wintering purple sandpiper and turnstone.	All features – no significant increase in human disturbance maintenance of sparsely vegetated dunes for nesting (little tern). extent and quality of rocky shore feeding and roosting habitat (purple sandpiper and turnstone)

4. Stage 1B: Analysis of Trends

4.1 Trends are influences on a European site other than other plans and projects, which have influenced it and are likely to continue to influence it. It is important that relevant trends are considered alongside the plan that is subject to Habitats Regulations Assessment and other plans and projects, in order to identify the factors which, in combination, may be affecting a European site.

4.2 The following trends have been identified as being relevant to this Habitats Regulations Assessment:

- Air quality;
- Water quality and hydrology;
- Tourism and recreation;
- Large scale development;
- Climate change;
- Non-native invasive species

Air Quality

4.3 The most significant pollutants in the UK are as follows:

Sulphur Dioxide SO2

4.4 The main sources of SO2 are power stations and industrial combustion processes burning large quantities of fossil fuels.

4.5 Wet and dry deposition of SO2 acidifies soils and fresh waters, thereby altering the composition of plant communities by causing a decline in species intolerant of more acid conditions. The significance of impacts depends on the levels of deposition and the buffering capacity of the receiving environment; basic environments have a higher buffering capacity while acid soils and waters have a much lower buffering capacity and so are more severely affected.

Nitrogen Oxides NOx (nitrate (NO2), nitrogen oxides (NO3) and nitric acid (HNO3)

4.6 NOx is mainly produced by combustion, with about a quarter of UK emissions from power stations, half from vehicle exhausts and the rest from industrial and domestic combustion.

4.7 Deposition of NOx can lead to acidification of soils and freshwater. As with SO2, the degree of harm depends on the level of deposition and on the buffering capacity of these environments. NOx can also lead to the eutrophication of soils and waters, leading to the competitive exclusion of sensitive species as more vigorous ones take advantage of the increased nutrient levels.

Ammonia (NH3)

4.8 Ammonia is released during the decomposition of animal wastes, and adverse effects are caused by eutrophication, mainly within or near intensive livestock rearing environments in the lowlands.

4.9 Levels have been greatly increased by the development of intensive livestock rearing systems during the twentieth century. However recent agricultural policy reforms and the introduction of agri-environment schemes are likely to facilitate a reverse in this trend.

Low Level Ozone O3

4.10 A secondary pollutant generated by photochemical reactions from NOx and volatile organic compounds.

4.11 Concentrations of O3 exceeding 40 ppb are toxic to humans and wildlife, altering the species composition of semi-natural habitats.

Underlying Trends in Air Pollution

4.12 The National Expert Group on Transboundary Air Pollution report of 2001 Transboundary Air Pollution: Acidification, Eutrophication and Ground-Level Ozone in the UK reported the following findings:
Total SO2 emissions have decreased substantially in recent decades due to a decline in heavy industry, a decreasing contribution of coal burning in electricity generation, selection of lower sulphur coals for this purpose and cleaner burning of fossil fuels in power stations. Direct effects on vegetation have been virtually eliminated
Critical loads for acidification were exceeded in 71% of UK ecosystems in 1997, but this is forecast to drop to 47% by 2010, by which time NOx will have replaced SO2 as the major contributor.
Critical loads for eutrophication were exceeded in 25% of sensitive grasslands and 55% of heathland in 1995-97. This is expected to drop to 20% and 40% respectively, due to decreasing NH3 and NH4 emissions.
Overall, current deposition of nitrogen is probably changing the composition of vegetation in many nutrient-poor (acidic) habitats, and these changes may not be readily reversible.

4.13 Although technological advances have reduced NOx emissions from vehicle engines, increasing traffic levels are likely to cause NOx levels to start to increase again, and NOx levels are identified as a problem for sensitive sites adjacent to major transport routes.

4.14 Vehicle use is likely to continue to increase in Northumberland for a number of reasons; rising levels of car ownership, increasing levels of economic activity, increasing levels of tourism, population growth (albeit at a very modest level). The Design Manual for Roads and Bridges includes an equation describing the characteristic decrease in pollutant concentrations with increasing distance from roads. Based on this and other research, it is considered that NOx emissions generated within 200m of a European site which has interest features which are vulnerable to nitrogen deposition need to be considered in Habitats Regulations Assessments.

European sites currently receiving acid deposition, nitrogen deposition or both above their critical loads

4.15 Based on the UK Air Pollution Information System (APIS) and the Environment Agency study Impact of atmospheric emissions from JEP coal and oil-fired power stations on sites protected by the Habitats Directive (February 2006), the following table shows European sites where acid deposition, nitrogen deposition or ozone are above their critical loads. The figures show air pollution levels divided by the critical load that the site can carry, so a figure in excess of 1.0 shows that the critical level is being exceeded.

European Site	Acid Deposition	Nitrogen Deposition	Ozone	Features most sensitive to N and acid deposition	Largest non-agricultural source
Border Mires SAC	4.97	2.67	0.91	Blanket bog	Acid – Large Combustion Plants (LCP) N - Transport
Borders Woods SAC	0.24	1.86	0.86	Tilio-Acerion forests of slopes, screes and ravines	Acid – LCP N - Transport
Harbottle Moors SAC	14.2	0.99	0.88	European dry heaths	Acid – LCP N - Transport
Ford Moss SAC	14.2	2.05	0.92	Active raised bogs	Acid – LCP N - Transport
Moor House – Upper Teesdale SAC	3.45	2.20	0.99	Alpine and boreal heaths	Acid – LCP N - Transport
North Northumberland Dunes SAC	0.25	1.01	0.90	Fixed dunes Embryonic shifting dunes	Acid – LCP N - LCP
North Pennine Dales Meadows SAC	2.89	1.51	0.90	Mountain hay meadows	Acid – LCP N - Transport
North Pennines Moors SAC	26.7	1.86	0.98	European dry heaths	Acid – LCP N - Transport

European Site	Acid deposition	Nitrogen deposition	Ozone	Features most sensitive to N and acid deposition	Largest non-agricultural sources
North Pennines Moors SAC	26.7	3.72	0.98	Blanket bogs	Acid – LCP N - Transport
Simonside Hills SAC	14.2	0.99	0.94	European dry heaths	Acid - LCP N - Transport
Simonside Hills SAC	14.2	1.97	0.94	Blanket bogs	Acid – LCP N - Transport
Tyne and Allen River Gravels SAC	Fig not available, not exceeded	1.18	Fig not available	Calaminarian grasslands	Acid – LCP N - Transport
Tyne and Nent SAC	Fig not available, not exceeded	1.3	Fig not available	Calaminarian grasslands	Acid – LCP N - Transport
Castle Eden Dene SAC	2.42	2.72	1.18	Ash and yew woodland	Acid – LCP N - Transport
Thrislington SAC	0.43	1.54	0.85	Calcareous grassland	Acid – LCP N - Transport
Langholm – Newcastleton Moors SPA	2.15	1.1	0.808	Moorland habitats supporting hen harrier	Acid – LCP N - Transport
North Pennines Moors SPA	1.32	2.71	0.94	Moorland habitat supporting golden plover, hen harrier	Acid – LCP N - Transport

NB

Marine and intertidal features were not considered to be at risk due to the buffering effects of seawater.

Information was not available for freshwater sites, but the risk presented from atmospheric nitrogen was considered to be de minimus compared to inputs from surface and groundwater runoff.

4.16 The table shows that the most significant excedences of critical loads of acid deposition occur in heathland and mire communities, and are especially severe in the North Pennines SAC, Simonside Hills SAC, Harbottle Moors SAC, Border Mires SAC, and Moor House-Upper Teesdale SAC. Excedences of critical loads of nitrogen deposition are less extreme but occur in all of the above habitats. Ozone levels are mostly close to, but not above the critical load being exceeded.

Water Quality

4.17 Maintaining high water quality is central to the wellbeing of a number of European sites in Northumberland; most obviously the Roman Wall Loughs SAC, the River Eden SAC and the River Tweed SAC. However, other sites such as Newham Fen SAC and Ford Moss SAC could be adversely affected by raised nutrient inputs from agricultural fertilizer and manure or sewage, reaching these sites via aquatic pathways. Parts of rural Northumberland are not served by mains sewerage, resulting in the usage of non-mains systems such as septic tanks and package treatment plants. Their proper functioning is dependent on appropriate maintenance by their owners, which isn't always kept up, potentially resulting in a large number of small sources of pollution that can be hard to trace and manage.

4.18 The situation regarding the Tyne and Allen River Gravels SAC and the Tyne and Nent SAC is complex, in that maintenance of the Calaminarian grassland plant communities that form the interest features of these sites is dependent on the ongoing deposition of heavy metals such a lead and zinc, which are washed out of historic mine workings upstream of these sites. In other contexts, these heavy metals are pollutants, and so there can be a tension between a need to improve water quality in these river systems by ameliorating the discharges from historic mining sites in the North Pennines, and maintaining the conditions required by the Calaminarian grassland sites.

4.19 Increased algal growth is of concern in Budle Bay, where it is adversely affecting the intertidal sand and mudflats which are an interest feature of the Berwickshire and North Northumberland Coast SAC and, by displacing eelgrass beds, adversely affecting Lindisfarne SPA by reducing the quality and quantity of feeding habitat of grazing wildfowl such as light-bellied Brent goose, widgeon and whooper swan. The reasons for the increased algal growth in this area have not been clearly determined; however, nutrient input from diffuse agricultural pollution in the Tweed catchment is likely to be a significant factor.

Hydrology

4.20 The supply of water in Northumberland is divided into two water resource zones, Kielder WRZ and Berwick and Fowberry WRZ. The Kielder WRZ serves most of the population of Northumberland and is supplied via river systems and reservoirs. For the most part, there are no water availability issues within this WRZ, primarily due to the very substantial supplies at Kielder Reservoir; however, both the rivers Coquet and Font have been identified as experiencing water availability issues. The Berwick and Fowberry WRZ is supplied primarily from an underlying aquifer, and supply shortages have been experienced during periods of high demand. Water abstraction for agriculture occurs from the Tweed catchment rivers, potential impacts on the SAC are being managed through abstraction licence reviews.

Tourism and Recreation

4.21 Tourism is concentrated in certain areas of the county, especially the coast, although the Hadrian's Wall corridor is being increasingly promoted as a tourist destination, as is Northumberland National Park (a separate local planning authority area) and, to a lesser extent, the North Pennines AONB. Disturbance can be a significant impact arising from coastal recreation, with potential adverse impacts on nesting and feeding tern species, feeding and roosting migratory and winter waders and wildfowl and on fragile dune communities. Disturbance of breeding birds caused by increasing levels of recreational access can also be an issue away from the coast, especially in upland SPAs, where breeding populations of golden plover, merlin and hen harrier all require low levels of disturbance. Dogs, especially off-lead animals, increase the effect of casual disturbance of birds by walkers.

4.22 European sites at particular risk of disturbance impacts include the Northumbria Coast SPA and Ramsar Site, Lindisfarne SPA and Ramsar Site and the North Northumberland Dunes SAC. European sites vulnerable to disturbance from increasing visitor numbers include the North Pennines SPA. The Tyne and Allen River Gravels SAC is vulnerable to damage from the Pennine Way and from riverside caravan and camping sites.

4.23 Improvements in treatment of sewage arising from coastal settlements in order to meet Urban Waste Water Treatment Directive obligations will help to ensure that increasing visitor numbers do not contribute to the eutrophication of intertidal and subtidal habitats.

Large Scale Development

4.24 Development of land is occurring at a comparatively modest pace in Northumberland, with the bulk of housing and industrial development occurring in and adjacent to the settlements of south-east Northumberland, on the periphery of the Tyneside conurbation. New development causes a range of impacts that can affect European sites, including increased or changing patterns of air pollution from changing or increasing vehicle uses, and increases in water demand and in waste arisings. Urban expansion can also cause loss of or increased disturbance to land which is used as high tide and night time roosts by bird species which are key features of the coastal SPAs, and it can increase disturbance within these SPAs, for example through increased recreational use of the intertidal zone and through light pollution. Recreational disturbance such as dog walking can be a particular problem when new residential development occurs close to the Northumbria Coast SPA and Ramsar Site; feeding opportunities for turnstone and purple sandpiper are already restricted by the tides and the limited daylight of winter, so lost feeding time and increased energy use evading perceived predators could be significant. Some high tide and night time roost sites used by these species are known to occur in close proximity to development, but overall knowledge of the location of roost sites is incomplete. There is currently a high degree of uncertainty about the breeding locations of the golden plover that winter on the

Northumberland Coast; however, adverse effects on the wintering populations could affect the integrity of the North Pennines Moors SPA or other SPAs that they breed in.

4.25 Demand for particular types of building stone, for markets within and outwith Northumberland, can create demand for particular sites to be quarried. In Northumberland, demand for dimensional building stone is generally for sandstone, with a low likelihood of significant effects on European sites.

4.26 The highest quality concreting sands and gravels in Northumberland are derived from igneous rocks, and so occur in the north of the county, in valleys of rivers which are within the River Tweed SAC. Potential significant effects include releases of silt or pollutants to the watercourses and hydrological changes arising from water abstraction for processing.

Climate Change

4.27 Changes in climate arising from increasing levels of atmospheric CO2 are very complex and difficult to predict. However, increasingly warm dry summers and mild, stormy winters along with rising sea levels seem to be the most likely trends. Possible impacts on European sites include the following:

- coastal squeeze, as habitats such as saltmarshes and sand dunes are caught in a decreasing amount of space between rising sea levels on their seaward side and human land uses on their landward side. This is likely to affect all coastal European sites, but effects will be felt first and most severely on European sites with intertidal habitats and dunes, which are Berwickshire and North Northumberland Coast SAC, Tweed Estuary SAC, North Northumberland Dunes SAC, Lindisfarne SPA and Ramsar Site, Northumbria Coast SPA and Ramsar Site. Increased depths of water due to sea level rise may also affect coastal reefs and caves in the Berwickshire and North Northumberland Coast SAC;
- increasing wildfires affecting combustible plant communities such as heaths and bogs, affecting upland sites such as the North Pennines Moors SAC, North Pennines Moors SPA, Harbottle Moors SAC, Simonside Hills SAC, Border Mires Kielder-Butterburn SAC, Moor House – Upper Teesdale SAC, Irthinghead Mires Ramsar Site and Langholm – Newcastleton Hills SPA;
- rivers and wetlands increasingly affected by low flows in summer and floods in winter, for example the River Tweed SAC, River Eden SAC, Tyne and Allen River Gravels SAC, Tyne and Nent SAC;
- distribution patterns of many species affected by shifts in their ‘climate space’ (the geographic area which has the appropriate climate for that species), predominately towards higher latitudes and higher altitudes. This may affect arctic-alpine communities in the North Pennines Moors SAC and Moor House-Upper Teesdale SAC especially severely;
- increasing rates of colonisation by new species, including pests and diseases;

- higher summer water temperatures, with consequent decrease in levels of dissolved oxygen and increases in levels of primary productivity and decay processes.

4.28 Measures likely to assist in reducing the impacts of or in adapting to climate change include habitat restoration to improve 'ecosystem services', and land use change to facilitate the movement of communities and species. Examples of ecosystem services include the hydrological functioning of blanket bogs in absorbing large quantities of water from rainfall and gradually releasing it to watercourses, and the flood storage function of river floodplains. The hydrological function of blanket bogs in the uplands of Northumberland and surrounding areas has been adversely affected by the excavation of drainage ditches, especially during the 1950s – 1970s, and through afforestation. Projects to block ditches and restore afforested bogs are underway in the North Pennines and the Border Uplands, but are of a small scale compared to the areas affected. The area of functional floodplain in Northumberland has been greatly reduced over a long time period as flood defences have been put in place for settlements and farmland; however, increasingly severe winter storms will increase the need for it. Coastal realignment (the setting back of coastal defences) has the potential to allow coastal habitats such as saltmarsh to migrate landwards rather than being lost to coastal squeeze; projects are currently underway at Alnmouth and Goswick through the Northumberland Foreshores Project which will demonstrate the potential of this approach, although again these are of very limited scale compared to the problem.

4.29 The issue of facilitating the movement of communities and species in response to movements in their climate space is complex, as they vary greatly in their ability to make such movements and they requirements that they have in order to do so; accordingly such changes are likely to be chaotic rather than simple, with more adaptable species and less specialist communities faring much better than more demanding and specialist ones. It is unclear whether beneficial land management practices can be initiated on a significant enough scale to assist in this process; however, those activities that are most likely to have a beneficial effect in this respect include restoring existing habitats to good condition to maximise their resilience, and increasing ecological connectivity by increasing the overall extent of semi-natural vegetation in the wider countryside; reinforcing and expanding features that act as links and corridors such as watercourses and their associated riparian habitats; increasing the density of networks of habitats such as wetlands, semi-natural grasslands and native woodlands; and managing farmland in a way that integrates food production and wildlife conservation. This requires that nature conservation is planned and implemented at a landscape scale, rather than on the traditional site-by-site basis.

Invasive Species

4.30 Thousands of non-native species have become established in the UK, having been brought here either intentionally or accidently by people. A small proportion of non-native plants have become highly invasive, displacing native vegetation and forming dense single-species stands of little value to wildlife. Similarly, a few such animals are displacing native species, either directly or via pests or diseases that they have brought with them. Significant problems within European sites are as follows:

- Pirri-pirri bur is adversely affecting dune grassland within the North Northumberland Dunes SAC;
- Spartina (a saltmarsh grass) is adversely affecting mudflats within the Berwickshire and North Northumberland Coast SAC and Lindisfarne SPA;
- Japanese knotweed and giant hogweed is displacing native riparian vegetation in the River Tweed SAC, a problem which is being addressed through the Tweed Invasives Project;
- Crayfish plague, associated with the introduced signal crayfish, is spreading in northern England, and so the integrity of the River Eden SAC is at risk.

5. Stage 1C: Analysis of the Acomb Neighbourhood Plan and identification of Likely Significant Effects

5.1 The objectives and policies contained within the Acomb Neighbourhood Plan have been evaluated to identify where there could be a likely significant effect on the interest features of European sites.

5.2 The NPPF states that the presumption in favour of sustainable development does not apply to development proposals that require Appropriate Assessment. As such, were any developments proposed which may have a likely effect on European sites (by virtue of inter alia size, resource use, or indirect effects such as increased disturbance) these effects would be assessed as part of a detailed policy or planning process at that stage.

5.3 At present, there are no policies or proposals within this Neighbourhood Plan which would cause significant effects on European sites, or act as drivers to proposals which may cause significant effects.

5.4 The nearest European sites to the Neighbourhood Plan boundary are:

- 1.6km west from Tyne and Allen River Gravels SAC
- 5.8km south west North Pennine Moors SAC
- 5.8km south west North Pennines Moor SPA
- 10.6km west from Border Mires Kielder-Butterburn SAC
- 10.7km west from Roman Wall Loughs

5.5 The Tyne and Allen River Gravels SAC lies 1.6km west from the site boundary. The Tyne and Allen River Gravels SAC is complex, in that maintenance of the Calaminarian grassland plant communities that form the interest features of these sites is dependent on the ongoing deposition of heavy metals such a lead and zinc, which are washed out of historic mine workings upstream of these sites. Therefore policies and projects within the neighbourhood plan are unlikely to affect this site.

5.6 The North Pennine Moors Special Area of Conservation and North Pennine Moors Special Protection Area lies 5.8km south west of the Neighbourhood Plan area at its nearest point. This is just within the 6km zone of influence for upland sites. There are no policies or projects within the Neighbourhood Plan which will affect the interest features of those sites buy increasing disturbance to those areas.

5.7 The other sites are well beyond the 6 to 10km zone of influence for activities that could cause recreational disturbance, and there are no other adverse effects arising from development of this nature that could cause a significant effect over these distances. As there are no likely significant effects, it follows that in-combination effects cannot occur and so is unnecessary to move to stage 1D.

Objectives

5.7 **Objective 1 - Community Facilities and Local Green Space;**
This objective is a general statement of policy/general aspiration and is therefore not likely to have a significant effect on a European Site.

5.8 **Objective 2: Flooding**
This objective is a general statement of policy/general aspiration and is therefore not likely to have a significant effect on a European Site.

5.9 **Objective 3: Traffic, Walking and Cycling in Acomb**
This objective is a general statement of policy/general aspiration and is therefore not likely to have a significant effect on a European Site.

5.10 **Objective 4: Housing**
This objective is a general statement of policy/general aspiration and is therefore not likely to have a significant effect on a European Site.

5.11 **Objective 5: Local Employment and Business**
This objective is a general statement of policy/general aspiration and is therefore not likely to have a significant effect on a European Site.

5.12 **Objective 6 - Heritage, Conservation, Buildings and Design** This objective is a general statement of policy/general aspiration and is therefore not likely to have a significant effect on a European Site.

Policies

5.12 **Policy 1: Local Green Spaces**
This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.13 **Policy 2: Community Facilities**
This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.14 **Policy 3: Flooding**
This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.15 **Policy 4: Walking, Cycling and Horse-riding**

This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.16 **Policy 5: Howford Quarry**

This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.17 **Policy 6: New Housing**

This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.18 **Policy 7: Local Economy**

This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.19 **Policy 8: Acomb Conservation Area**

This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.20 **Policy 9: Non-designated Heritage Assets**

This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.21 **Policy 10: Design in New Development**

This policy is a general criterion for testing the acceptability or sustainability of proposals, there is no likely significant effect on European Sites.

5.35 **Community Projects**

These are not part of the statutory plan and form the basis of a Community Action Plan to bring forward projects which support the community. There is no likely significant effect on European Sites.

6. Conclusion

6.1 This is a record of the determination as to whether the Acomb Neighbourhood Plan Submission Plan is likely to have a significant effect on any European sites, as required under Regulation 105 of the Conservation of Habitats and Species Regulations 2017.

6.2 Northumberland County Council provides the following screening opinion for the purposes of the Habitats Regulations:

Acomb Neighbourhood Plan Submission Plan is not likely to have a significant effect on any European Sites for the reasons identified in Section 5 of this Report.

6.3 As there are no effects which are more than *de minimus*, there is no requirement to consider impacts arising in combination with other plans and projects, and accordingly the Habitats Regulations Assessment process can be concluded at this point, without progressing to stage 2 appropriate assessment.

6.4 In accordance with Regulation 105 of the Conservation of Habitats and Species Regulations 2017, Northumberland County Council concludes that the Acomb Neighbourhood Plan Submission Plan will not have an adverse effect on the integrity of any European sites.

6.5 Natural England have been consulted and confirmed their agreement with the content of this report. A copy of Natural England's formal response to this Screening Opinion is included at Appendix A of this Report.

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Appendix A: Natural England formal response to HRA Screening Opinion

Date: 26 April 2018
Our ref: 245164
Your ref: Acomb Neighbourhood Plan HRA screening

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Northumberland County Council
Development Management
County Hall
Morpeth
NE61 2EF

BY EMAIL ONLY

Dear Sir/Madam

Planning consultation: Acomb Neighbourhood Plan HRA screening
Location: Northumberland

Thank you for your consultation on the above dated 23 April 2018 which was received by Natural England on the same date.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017

Acomb Neighbourhood Plan – Habitats Regulations Assessment (HRA)
Natural England concurs with the conclusion of the Habitats Regulations Assessment (dated April 2018) that the Acomb Neighbourhood Plan Submission Plan is not likely to have a significant effect on any European Sites alone or in-combination with other plans and projects.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us.

For any queries relating to the specific advice in this letter only please contact Ellen Bekker on 0208 225 7091 or ellen.bekker@naturalengland.org.uk. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.
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Yours faithfully

Ellen Bekker
Lead Adviser
Sustainable Development
Northumbria Area