



Northumberland
County Council

**NORTHUMBERLAND LOCAL PLAN
(REGULATION 19)**

HABITATS REGULATIONS ASSESSMENT

DECEMBER 2018

Contents

1. Introduction	3
Purpose of the Habitats Regulations Assessment Report	3
Format of the Habitats Regulations Assessment Report	3
Habitats Regulations Assessment Consultation	3
2. Habitats Regulations Assessment Requirements and Process	4
Assessment Methodology to meet the requirements of the Habitats Directive	6
3. Stage 1A: Identification of European sites	8
4. Stage 1B: Analysis of Trends	30
Air Quality	30
Water Quality	37
Hydrology	37
Tourism and Recreation	37
Large Scale Development	38
Climate Change	39
Invasive Species	40
5. Stage 1C: Analysis of proposals and policies in the Local Plan - Identification of Likely Significant Effects	41
Strategic Objectives	41
Policies	42
Identification of policies requiring appropriate assessment	55
6. Stage 1D: Consideration of Other Plans and Projects	57
7. Stage 2. Appropriate Assessment	85
Introduction	85
8. Assessment of whether there will be an adverse effect on the integrity of any European sites	86
Policy ECN 2 Blyth Estuary Strategic Employment Area – Increased disturbance in the Blyth estuary sectors of the Northumbria Coast SPA and Northumberland Marine SPA	86
Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 - Increased disturbance in the North Pennine Moors SPA and increased trampling damage in the North Pennine Moors SAC	87
Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 - Increased trampling damage to sensitive vegetation in the North Pennines Dales Meadows SAC	92
Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 - Increased trampling damage to sensitive vegetation in the Tyne and Allen River Gravels SAC	99

Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 - Increased disturbance affecting the Northumbria Coast SPA and Ramsar Site in respect of wintering purple sandpiper and turnstone and Lindisfarne SPA and Ramsar Site in respect of wintering and migratory waders and wildfowl ...	100
Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 - Increased disturbance to little tern breeding colonies (Northumbria Coast SPA and Ramsar Site and Lindisfarne SPA) and arctic tern breeding colony (Northumbria Coast SPA).....	106
Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 - Increased trampling damage to sensitive vegetation and spread of pirri-pirri bur in the North Northumberland Dunes SAC	107
The Northumberland Coastal Mitigation Service.....	109
Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 - Increased disturbance affecting Northumberland Marine SPA.....	114
Policies STP 1, HOU 1, HOU 2, HOU 8 and HOU 9 - Eutrophication from increased sewage discharge affecting the River Tweed SAC.....	115
Policies STP 1, HOU 1, HOU 2, HOU 8 and HOU 9 - Eutrophication from increased sewage discharge affecting the Tweed Estuary SAC.....	116
9. Conclusion.....	117
10. Bibliography	119
Appendix 1: Extracts from Natural England Conservation Advice for European Sites included in the Appropriate Assessment (where available)	124
Appendix 2: Results of North Northumberland Coastal Dog Walker Questionnaire Survey.....	146

1. Introduction

Purpose of the Habitats Regulations Assessment Report

- 1.1 Northumberland County Council is preparing its Local Plan. Once adopted the Northumberland Local Plan will be the overarching spatial plan for County, excluding the Northumberland National Park, guiding future development and land use planning decisions to 2036.
- 1.2 As the 'competent authority' under the Conservation of Habitats and Species Regulations 2017, Northumberland County Council is required to assess its Local Plan through the HRA process. The purpose of a HRA is to assess possible effects of the Local Plan 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 and also include Ramsar Sites. The HRA process is an iterative process and the integration of the HRA process as part of the preparation of the Local 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 establishes the scope of and the process for completing the HRA of the Northumberland Local Plan and undertakes an assessment of the Northumberland Local Plan – Publication Draft Plan (Regulation 19). The HRA Report includes the following:
 1. HRA requirements and process.
 2. Stage 1A: Identifies the European sites.
 3. Stage 1B: Identifies the Trend Analysis.
 4. Stage 1C: Analysis of proposals and policies in the Local Plan - Identification of Likely Significant Effects
 5. Stage 1D: Consideration of other plans and projects
 6. Stage 2A: Appropriate Assessment Introduction
 7. Stage 2b: Assessment of whether there will be an adverse effect on the integrity of any European sites
 8. Conclusion
 9. BibliographyAppendices

Habitats Regulations Assessment Consultation

- 1.4 It is a requirement of the Habitats Regulations to consult the appropriate nature conservation statutory body (Natural England).

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 1994 (consolidated in the Conservation of Habitats and Species Regulations 2017) 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 Regulation 105(1) of 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 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 statements or which express the general political will of an authority cannot be likely to have a significant effect on a site.¹
- 2.7 This issue has also been addressed in the High Court case of Feeney, in which the judge stated that:
- “A Local Plan 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 Local Plan stage, but such an assessment cannot do more than the level of detail of the strategy at that stage permits”²*
- 2.8 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 the Local Plan stage to be meaningfully assessed at this stage. Therefore some potential effects may be noted at this stage as requiring more detailed assessment during the development management process.
- 2.9 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

¹ 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

² 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>

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.

- 2.10 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 permissible³, as has adopting something in principle that will not actually happen if the protective condition or qualification is not being satisfied⁴. 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

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

Stage One – Screening

- 2.12 This comprises an initial analysis to determine whether the Northumberland Local Plan is likely to have a significant effect on any European sites. The Local 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 Local 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 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.

Stage Two – Appropriate Assessment

- 2.13 Determination of whether any proposals or policies in the Local Plan identified at the screening stage as having a likely significant effect would have an adverse effect on the integrity of any European sites, in view of the conservation objectives for those sites and the nature of the likely significant effect that has been identified. Modifications to those proposals or policies are identified to avoid any adverse effects on site integrity.

If mitigation is not possible and adverse effects on site integrity remain, the process must proceed to Stage Three.

³ Feeney; paragraphs 88, 90 and 92

⁴ Feeney; paragraph 96

Stage Three – Alternative Solutions

- 2.14 The identification of alternative solutions to the relevant proposals or policies so as to avoid adverse effects on the integrity of European sites. The plan must then be modified in light of these findings.

Stage Four – Imperative Reasons of Overriding Public Interest and Compensatory Measures

- 2.15 If a plan or project has adverse effects on the integrity of a European site which cannot be avoided or mitigated for and there are no alternative solutions, consideration must be given to whether there are imperative reasons of overriding public interest for proceeding with the plan or project. This stage involves central Government and must be notified to the European Commission. If there are imperative reasons of overriding public interest, compensatory measures must be identified to maintain and enhance the overall coherence of the Natura 2000 network. This will only be in exceptional circumstances and must be supported by strong justification.
- 2.16 The European Court of Justice provided a ruling to the Irish Courts in case C323/17⁵ (People over Wind) on 12th April 2018 in response to a request for a ruling to answer the following question:
‘Whether, or in what circumstances, mitigation measures can be considered when carrying out screening for appropriate assessment under Article 6(3) of the Habitats Directive?’

The ruling was:

Article 6(3).... Must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site.’

- 2.17 This ruling overturned existing practice in the UK, which was to consider the benefits of any proposed mitigation at the screening stage, when determining whether a proposal is likely to have a significant effect on any European sites. Full consideration has been given to this ruling in the preparation of this Habitats Regulations Assessment. Reliance has not been given to mitigation measures at the screening stage, and all policies likely to have a significant effect in the absence of mitigation have been taken forward to appropriate assessment. Consequently it is considered that this HRA is consistent with the ECJ ruling in Case C 323/17.

5

<http://curia.europa.eu/juris/document/document.jsf?jsessionid=0B015136ECA453B45E5BC9B13397F53A?text=&docid=200970&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=5349699>

3. Stage 1A: Identification of European sites

3.1 The following European sites are wholly or partly within Northumberland (including the National Park⁶) or are considered to have the potential to be affected by the Local 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 Abbs 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
- Northumbria Coast
- Northumberland Marine SPA

⁶ Details of the European sites within the Northumberland National Park can be found at:
http://www.northumberlandnationalpark.org.uk/_data/assets/pdf_file/0018/144450/1df_08_core_strategy_appropriate_assessment.pdf

Special Protection Areas outside of Northumberland

- Langholm – Newcastleton Hills
- St Abbs 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

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

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
			coarse sediment shores used for breeding and hauling out.
Border Mires Kielder – Butterburn SAC	Blanket bogs * Petrifying springs with tufa formation* European dry heaths Northern Atlantic wet heaths with <i>Erica tetralix</i> 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.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
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.
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	Mountain hay 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
SAC	<i>Molinia</i> meadows		
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	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

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
River Eden SAC	<p>Marsh saxifrage</p> <p>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</p>	<p>To maintain in (or restore to) favourable condition the: Floating formations of water crowfoot Oligotrophic to mesotrophic standing waters Residual alluvial forest</p> <p>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</p>	<p>including eutrophication from adjacent farmland.</p> <p>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</p>

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	regeneration 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.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
			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.
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 SAC	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	<i>Tilio-Acerion</i> 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.

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Moor House – Upper Teesdale SAC	Oligo-mesotrophic waters with <i>Chara</i> 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	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 <i>Molinea</i> meadows -

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
	montane screes Siliceous alpine and boreal grasslands <i>Molinia</i> meadows Hydrophilous tall herb fringe communities Mountain hay meadows Alpine pioneer formations of the <i>Caricion bicoloris-atrofuscae</i> * Calcareous montane screes Limestone pavements * Round-mouthed whorl snail Marsh saxifrage		low nutrient inputs from farmyard manure only; sufficient removal of biomass, low level of poaching.
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.
Castle Eden	Represents the	To maintain in favourable condition the	No loss of ancient semi-natural stands

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Dene SAC	<p>most extensive northerly native occurrence of yew <i>Taxus baccata</i> woods in the UK. Extensive yew groves are found in association with ash-elm <i>Fraxinus-Ulmus</i> woodland and it is the only site selected for yew woodland on Magnesium Limestone in north-east England.</p>	<p><i>Taxus baccata</i> wood</p>	<p>Site management to maintain current level of structural diversity (Age/size class variation within and between stands; presence of open space and old trees; dead wood lying on the ground; standing dead trees) Limited air pollution Limited grazing by ungulates where it leads to undesirable shifts in the composition/structure of the stand</p>
Thrislington SAC	<p>Semi natural dry grasslands and scrubland facies on calcareous substrates. Contains the largest of the few surviving strands of CG8 <i>Sesleria albicans</i> –</p>	<p>To maintain, in favourable condition, the unimproved calcareous grassland, with particular reference to semi-natural dry grasslands and scrubland facies on calcareous substrates (CG8 grasslands)</p>	<p>No reduction in extent Continuous management by seasonally-adjusted grazing No fertiliser input Control of invasive species Control of over grazing</p>

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
	<p><i>Scabiosa columbaria</i> grassland. This form of calcareous grassland is confined to the Magnesium Limestone of County Durham and Tyne and Wear, and is found mainly as small scattered strands.</p>		
Coquet Island SPA	<p>Populations of Annex 1 species of European importance: Arctic tern Sandwich tern Common tern Roseate tern An internationally important seabird assemblage of over 20,000 individuals</p>	<p>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.</p>	<p>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</p>
Farne Islands	Populations of	To maintain in (or restore to) favourable	Little or no human disturbance

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
SPA	Annex 1 species of European importance: Arctic tern Sandwich tern Common tern An internationally important seabird assemblage of over 20,000 individuals	condition the habitats for the breeding populations of sandwich tern, common tern, arctic tern.	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	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 wigeon), extent and quality of sandflats and mudflats (roosting for many

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
	Greylag goose Light-bellied Brent goose Wigeon Ringed plover Bar-tailed godwit Redshank Wintering wildfowl assemblage of European importance		species, feeding especially for ringed plover, bar tailed godwit and redshank),
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)

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
Northumbria Coast SPA	Internationally important breeding populations of little tern and arctic tern Internationally important wintering populations of purple sandpiper and turnstone	To maintain in (or restore to) favourable condition the sand dunes for the breeding populations of little tern and arctic 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)
Northumberland Marine SPA	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; <ul style="list-style-type: none"> • 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

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
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
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.
Teeside and Cleveland Coast pSPA	Internationally important numbers of Annex 1 species:	To maintain in (or restore to) favourable condition the habitats of the populations of Annex 1 species of international importance, with particular reference to:	No significant decrease in extent, subject to natural change (all habitats). No significant reduction in numbers or significant increase in displacement of birds due to disturbance

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
	<p>Little Tern (breeding) Common Tern (breeding) Avocet (breeding) Sandwich Tern (passage) Internationally important numbers of migratory species: Ringed Plover (passage) Knot Redshank (wintering) Ruff (wintering) Internationally important assemblage of wintering waterfowl: Sanderling, Lapwing, Shelduck, Cormorant, Redshank, Knot</p>	<p>Intertidal sand and mudflats, sand dunes and coastal waters, for little tern and sandwich tern. To maintain in (or restore to) favourable condition the habitats of the populations of migratory species of international importance, with particular reference to: Rocky shores, intertidal sand and mudflats, saltmarsh, sand dunes and freshwater marsh for redshank and knot. To maintain in (or restore to) favourable condition the habitats of the populations of waterfowl that contribute to the wintering waterfowl assemblage of European importance, with particular reference to: Intertidal sand and mudflats, saltmarsh, freshwater marsh, coastal waters, standing water and rocky shores.</p>	<p>(all species) No significant reduction in view-lines in feeding and roosting areas – redshank need areas with unrestricted views over 200m and an effective field size of over 10ha; lapwing need unrestricted views over 500m with an effective field size of 16ha (all habitats) No significant reduction in presence and abundance of food species, including <i>Hydrobia</i>, <i>Macoma</i>, <i>Corophium</i>, <i>Mytilus/Cerastoderma</i> spat and <i>Nereis</i> for redshank, knot and shelduck and <i>Salicornia</i> and <i>Atriplex</i> for teal (intertidal sand and mudflats, saltmarsh). No significant reduction in presence and abundance of food species, including crustacean, annelids, sand eels and clupeidae for little tern and sand eel and sprat for sandwich tern (coastal waters) No significant change in extent of open, short vegetation (<10cm) or bare ground in areas used for roosting by redshank, knot, lapwing, ringed plover (saltmarsh). No significant change in extent of open ground with sparse vegetation (<10% vegetation cover) and bare surfaces used for nesting and roosting by little tern (sand dunes) No significant change in vegetation height (<15cm) throughout areas used for feeding by lapwing (freshwater marsh) No significant reduction in presence and abundance</p>

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
			<p>of food species especially earthworms and leatherjackets for redshank and lapwing (freshwater marsh).</p> <p>No significant reduction in extent of shallow water in fields (<6cm over 20-40% of area for redshank and <10cm over 30-50% of area for lapwing) (freshwater marsh)</p> <p>No significant reduction in area of shallow water (<40cm for shelduck and <30cm for teal) (standing water)</p>
Holburn Lake and Moss Ramsar Site	<p>Lowland raised bog</p> <p>Winter roost for internationally important numbers of greylag goose</p> <p>Inland roost for mallard, wigeon and teal during unfavourable weather.</p>	<p>To maintain in (or restore to) favourable condition the raised bog</p> <p>To maintain in (or restore to) favourable condition the habitats for the roosting wildfowl populations</p>	<p>High water table, infrequent scrub or bracken, low atmospheric or aquatic nutrient inputs (raised bog).</p> <p>Human disturbance absent or at very low levels, no significant reduction in view lines in roosting area (roosting wildfowl).</p>
Irthinghead Mires Ramsar Site	<p>Active blanket bog</p> <p>Notable variety of <i>Sphagnum</i> mosses</p> <p>Rare species: <i>Carex</i></p>	<p>To maintain in (or restore to) favourable condition the blanket bog.</p>	<p>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.</p>

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
	<i>magellanica</i> <i>Sphagnum imbricatum</i> <i>S. pulchrum</i> <i>S. magellanicum</i> <i>Eboria caliginosa</i>		
Lindisfarne Ramsar Site	<p>Extensive intertidal flats, saltmarsh and major sand dune system with well-developed dune slacks.</p> <p>Wintering waterfowl assemblage of international importance.</p> <p>Internationally important migratory/wintering populations of</p> <p>Light-bellied Brent goose</p> <p>Wigeon</p> <p>Ringed plover</p> <p>Redshank</p> <p>Greylag goose</p> <p>Bar-tailed godwit</p>	<p>To maintain in (or restore to) favourable condition intertidal mudflats and sandflats, saltmarsh and eelgrass beds for the regularly occurring migratory and wintering species.</p> <p>Subject to natural change, to maintain in (or restore to) favourable condition the sand dune system.</p> <p>To maintain in (or restore to) favourable condition, the habitats for the populations of petalwort and dune helleborine.</p>	<p>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 wigeon), extent and quality of sandflats and mudflats (roosting for many species, feeding especially for ringed plover, bar tailed godwit and redshank).</p> <p>Fixed dunes – appropriate grazing levels to maintain species and structural diversity, no increase in area occupied by invasive species e.g. pirri-pirri bur.</p> <p>Dunes with creeping willow – maintain active successional processes.</p> <p>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</p> <p>Humid dune slacks – maintenance of hydrological regime</p> <p>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</p>

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
	Rare plants: Petalwort Lindisfarne helleborine (endemic on Lindisfarne)		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
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)
Teeside and Cleveland Coast Ramsar Site	Waterfowl assemblage of International importance. Internationally important numbers of redshank on passage and knot in winter.	To maintain in (or restore to) favourable condition the habitats of the populations of migratory species of international importance, with particular reference to: Rocky shores, intertidal sand and mudflats, saltmarsh, sand dunes and freshwater marsh for redshank and knot. To maintain in (or restore to) favourable condition the habitats of the populations of waterfowl that contribute to the wintering waterfowl assemblage of	No significant decrease in extent, subject to natural change (all habitats). No significant reduction in numbers or significant increase in displacement of birds due to disturbance (all species) No significant reduction in view-lines in feeding and roosting areas – redshank need areas with unrestricted views over 200m and an effective field size of over 10ha; lapwing need unrestricted views over 500m with an effective field size of 16ha (all habitats) No significant reduction in presence and abundance

Site	Qualifying Features	Conservation Objectives	Key Environmental Conditions to Support Site Integrity
		<p>European importance, with particular reference to: Intertidal sand and mudflats, saltmarsh, freshwater marsh, coastal waters, standing water and rocky shores.</p>	<p>of food species, including <i>Hydrobia</i>, <i>Macoma</i>, <i>Corophium</i>, <i>Mytilus/Cerastoderma</i> spat and <i>Nereis</i> for redshank, knot and shelduck and <i>Salicornia</i> and <i>Atriplex</i> for teal (intertidal sand and mudflats, saltmarsh). No significant change in extent of open, short vegetation (<10cm) or bare ground in areas used for roosting by redshank, knot, lapwing, ringed plover (saltmarsh). No significant change in vegetation height (<15cm) throughout areas used for feeding by lapwing (freshwater marsh) No significant reduction in presence and abundance of food species especially earthworms and leatherjackets for redshank and lapwing (freshwater marsh). No significant reduction in extent of shallow water in fields (<6cm over 20-40% of area for redshank and <10cm over 30-50% of area for lapwing) (freshwater marsh) No significant reduction in area of shallow water (<40cm for shelduck and <30cm for teal) (standing water)</p>

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 pollutants that have the most important impacts on important plant communities in the UK comprise nitrogen compounds causing eutrophication (excessive nutrient levels), and nitrogen and sulphur compounds causing acidification.

Nitrogen Deposition

- 4.4 Sources of oxidised nitrogen mainly comprise nitrate (NO₂), nitrogen oxides (NO₃) and nitric acid (HNO₃) and are together referred to as NO_x. They are mainly produced by combustion of fossil fuels from power stations, vehicle exhausts and industrial and domestic combustion. Reduced nitrogen comprises gaseous ammonia (NH₃) and fine particulate ammonium (NH₄⁺) and arises mainly from agricultural sources comprising animal waste and artificial fertilizers.
- 4.5 Nitrogen is a major plant nutrient, but many wild plants cannot assimilate excess nitrogen from deposition. Those that can (mainly larger grass species and large fast-growing forbs such as nettles and docks) rapidly outcompete other species through shading or competition for limiting resources. This leads to the loss of slower growing and more specialist species as more vigorous ones take advantage of the increased nutrient levels, causing profound changes in semi-natural plant communities.

Acid Deposition

- 4.6 The main sources of acid deposition are SO₂ from power stations and industrial combustion processes burning large quantities of fossil fuels, NO_x also from combustion and the transformation of ammonia from agriculture to acidifying nitrogen compounds. The contribution of SO₂ has declined hugely since the 1970s as emissions from large combustion plants have been tackled and sulphur levels in fuels have been reduced, and consequently nitrogen emissions are now the main sources of acid deposition.

- 4.7 Acid deposition causes direct and indirect effects. Direct effects comprise damage to sensitive vegetation, while indirect effects are caused mainly by changes to soil chemistry as the pH falls, such as the mobilisation of toxic aluminium ions and leaching of important base cations such as magnesium. These changes alter the composition of plant communities, as species intolerant of more acid conditions decline and are lost. 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.
- 4.8 Although technological advances have reduced NO_x emissions from vehicle engines, this benefit is offset by increasing traffic levels, and NO_x levels are identified as a problem for sensitive sites adjacent to major transport routes.
- 4.9 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 and increasing levels of tourism. The Design Manual for Roads and Bridges⁷ 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 NO_x 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.

⁷ <http://www.dft.gov.uk/ha/standards/dmr/vol11/section3/ha20707.pdf>

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

4.10 The following tables are based on data from the UK Air Pollution Information System (APIS)⁸. The ‘Site Relevant Critical Loads’ tool in APIS provides critical loads for nitrogen and acidity in all SACs and SPAs in the UK for which critical load data is available. It also provides deposition data for each site and apportionment information for major sources. A Critical Load is defined as a quantifiable estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge.

Nitrogen

Site	Most sensitive interest feature	Critical Load (kg N/ha/yr) ⁹	Deposition (kg N/ha/yr) ¹⁰			Source Attribution
			Max	Min	Mean	
Border Mires SAC	Blanket bog	5-10	24.78	13.44	18.89	Livestock 39% Fertilizer 7% Road vehicles 5%
Borders Woods SAC	Tilio-Acerion forests of slopes, screes and ravines	15-20	27.72	23.52	26.14	Livestock 38% Fertilizer 7% Road vehicles 6%
Harbottle Moors SAC	European dry heaths	10-20	18.5	16.5	16.9	Livestock 37% Fertilizer 7% Road vehicles 6%
Ford Moss SAC	Active raised bogs	5-10	14.1	14.1	14.1	Livestock 31% Fertilizer 10% Road vehicles 7%
Moor House – Upper Teesdale SAC	Blanket bog	5-10	24.2	15	19	Livestock 41% Fertilizer 6%

⁸ www.apis.ac.uk/srd accessed 07-09/11/18

⁹ A range is given to reflect the range of ecosystem responses to nitrogen inputs

¹⁰ Based on 3 year monitoring data for 2013-2015

						Road vehicles 5%
North Northumberland Dunes SAC	Fixed dunes with herbaceous vegetation (acid type)	8-10	15	8.1	10.5	Livestock 29% Fertilizer 10% Road vehicles 6%
North Pennine Dales Meadows SAC	Mountain hay meadows	10-20	34	14.1	23.5	Livestock 42% Fertilizer 6% Road vehicles 6%
North Pennines Moors SAC	Blanket bog	5-10	31.5	15	21.8	Livestock 42% Fertilizer 6% Road vehicles 6%
Simonside Hills SAC	Blanket bogs	5-10	15.8	14.8	14.9	Livestock 36% Fertilizer 8% Road vehicles 6%
Tyne and Allen River Gravels SAC	Calaminarian grasslands	15-25	19.5	15.8	18.2	Livestock 39% Fertilizer 6% Road vehicles 6%
Tyne and Nent SAC	Calaminarian grasslands	15-25	23.8	18.6	20.3	Livestock 38% Fertilizer 6% Road vehicles 6%
Castle Eden Dene SAC	Ash and yew woodland	5-15	30.7	26.6	30	Livestock 29% Fertilizer 9% Road vehicles 8%
Thrislington SAC	Calcareous grassland	15-25	18.6	18.6	18.6	Livestock 29% Fertilizer 10% Road vehicles 7%
North Pennines Moors SPA	Moorland habitat supporting golden plover, hen harrier	5-10	31.5	15	20.9	Livestock 42% Fertilizer 6% Road vehicles 6%
Langholm – Newcastleton Moors SPA	Moorland habitats supporting hen harrier	10-20	21.1	16.5	18.9	Livestock 41% Fertilizer 6% Road vehicles 6%

Acid Deposition

Site	Most sensitive interest feature	Critical Load ¹¹ (Nitrogen Sulphur keq H+/ha/yr)	Current Deposition (Nitrogen Sulphur keq H+/ha/yr) ¹²			Source Attribution
			Max	Min	Mean	
Border Mires SAC	Blanket bog; Transition mires and quaking bogs	Min 0.660 0.28 Max 0.919 0.598	1.77 0.43	0.96 0.2	1.35 0.31	Livestock 31% Fertilizer 5% Road vehicles 5% Industrial and residential combustion 5%
Borders Woods SAC	Tilio-Acerion forests of slopes, screes and ravines	Min 1.165 0.876 Max 8.382 8.240	1.98 0.39	1.68 0.23	1.87 0.32	Livestock 30% Fertilizer 5% Road vehicles 5% Industrial and residential combustion 5%
Harbottle Moors SAC	European dry heaths	Min 0.642 0.2 Max 0.857 1.8	1.32 0.32	1.17 0.29	1.2 0.29	Livestock 29% Fertilizer 6% Road vehicles 5% Industrial and residential combustion 5%
Ford Moss SAC	Active raised bogs	Min 0.321 0.185 Max 0.321 0.186	1.01 0.19	1.01 0.19	1.01 0.19	Livestock 23% Fertilizer 8% Road vehicles 5% Industrial and residential combustion 5%
Moor House – Upper Teesdale SAC	Alpine and boreal heaths	Min 0.178 0.170 Max 0.536 4.130	1.9 0.19	0.94 0.19	1.35 0.32	Livestock 32% Fertilizer 5%

¹¹ Calculating acidity critical loads is complex due to the range of nitrogen and sulphur compounds involved. However the minimum figure is an indication of the level that could cause harm to the interest feature in the most sensitive situation and the maximum figure is that likely to cause harm in any situation. Keq H+ is a measure of potential acidity resulting from deposition of sulphur and oxidised and reduced nitrogen.

¹² Based on 3 year monitoring data for 2013-2015

						Road vehicles 4% Industrial and residential combustion 6%
North Northumberland Dunes SAC	Fixed dunes with herbaceous vegetation (acid type)	Min 0.223 0.410 Max 0.438 4.700	1.07 0.21	0.57 0.14	0.75 0.17	Livestock 21% Fertilizer 8% Road vehicles 5% Industrial and residential combustion 6%
North Pennine Dales Meadows SAC	Mountain hay meadows	Min 0.223 0.663 Max 0.581 4.22	2.44 0.71	0.97 0.22	1.68 0.44	Livestock 31% Fertilizer 4% Road vehicles 4% Industrial and residential combustion 6%
North Pennines Moors SAC	Siliceous rocky slopes with chasmophytic vegetation	Min 0.536 4.220 Max 0.178 0.170	2.25 0.61	0.93 0.17	1.56 0.4	Livestock 32% Fertilizer 5% Road vehicles 4% Industrial and residential combustion 6%
Simonside Hills SAC	Blanket bogs	Min 0.321 0.291 Max 0.321 0.348	1.16 0.25	1.03 0.24	1.07 0.25	Livestock 28% Fertilizer 6% Road vehicles 5% Industrial and residential combustion 5%
Tyne and Allen River Gravels SAC	Calaminarian grasslands	Min 0.223 0.850 Max 0.438 1.660	1.48 0.31	1.12 0.21	1.3 0.28	Livestock 30% Fertilizer 5% Road vehicles 5% Industrial and residential combustion 6%
Tyne and Nent SAC	Calaminarian grasslands	Min 0.999 4.000 Max 1.214 4.000	1.7 0.41	1.33 0.3	1.45 0.34	Livestock 29% Fertilizer 5% Road vehicles 4% Industrial and residential

						combustion 6%
Castle Eden Dene SAC	Ash and yew woodland	Min 0.142 1.269 Max 0.357 2.377	2.21 0.43	1.88 0.33	2.14 0.35	Livestock 19% Fertilizer 6% Road vehicles 5% Industrial and residential combustion 15%
Thrislington SAC	Calcareous grassland	Min 0.856 4.000 Max 0.856 4.000	1.33 0.26	1.33 0.26	1.33 0.26	Livestock 20% Fertilizer 7% Road vehicles 6% Industrial and residential combustion 11%
Langholm – Newcastleton Moors SPA	Moorland habitats supporting hen harrier	Min 0.642 0.5000 Max 0.892 4.170	1.51 0.34	1.16 0.24	1.35 0.3	Livestock 32% Fertilizer 4% Road vehicles 5% Industrial and residential combustion 5%
North Pennines Moors SPA	Moorland habitat supporting golden plover, hen harrier	Min 0.178 0.170 Max 0.536 4.220	2.25 0.61	0.93 0.17	1.5 0.38	Livestock 31% Fertilizer 5% Road vehicles 4% Industrial and residential combustion 6%

- NB
1. Marine and intertidal features were not considered to be at risk due to the buffering effects of seawater.
 2. 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.

4.11 The table shows that the most significant exceedences 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. Exceedences of critical loads of nitrogen occur more widely across heathland, mire and grassland communities.

Water Quality

- 4.12 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.
- 4.13 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 as 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.
- 4.14 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, wigeon 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

- 4.15 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

- 4.16 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.

- 4.17 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.
- 4.18 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

- 4.19 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.
- 4.20 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.

- 4.21 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

- 4.22 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.
- 4.23 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.

- 4.24 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 their 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

- 4.25 Thousands of non-native species have become established in the UK, having been brought here either intentionally or accidentally 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.
 - Pacific oyster *Crassostrea gigas*, a non-native invasive species is currently being farmed within Lindisfarne SPA and Ramsar Site, Northumberland Marine SPA and the Berwickshire and North Northumberland Coast SAC.

5. Stage 1C: Analysis of proposals and policies in the Local Plan - Identification of Likely Significant Effects

5.1 As the Northumberland Local Plan policies and proposals have been drafted, they have been evaluated to identify where there could be a likely significant effect on the interest features of European sites. Where this was the case, the policy or proposal was reviewed to determine whether it could be modified to avoid such an effect. Where it proved impossible to avoid likely significant effects, a detailed appropriate assessment was made of the implications of the policy or proposal for the European site concerned. This process forms Stage 2: The Appropriate Assessment.

5.2 The following paragraphs provide a summary of this analysis together with recommendations, in bold, on the ways in which the likely significant effects could be mitigated.

Strategic Objectives

5.3 It is noted that the objectives are interlinked and are not in any form of priority order.

Spatial Vision

5.4 General aspiration – unlikely to have a significant effect and so can be screened out.

Economy and Jobs

5.5 General aspiration – unlikely to have a significant effect and so can be screened out.

Homes

5.6 General aspiration – unlikely to have a significant effect and so can be screened out.

Environment

5.7 General aspiration – unlikely to have a significant effect and so can be screened out.

Connections

5.8 General aspiration – unlikely to have a significant effect and so can be screened out.

Community Health and Wellbeing

5.9 General aspiration – unlikely to have a significant effect and so can be screened out.

Climate Change

5.10 General aspiration – unlikely to have a significant effect and so can be screened out.

Resources

- 5.11 General aspiration – unlikely to have a significant effect and so can be screened out.

Quality of Place

- 5.12 General aspiration – unlikely to have a significant effect and so can be screened out.

Policies

Policy STP 1 Spatial Strategy (Strategic Policy)

- 5.13 A number of the main towns and service centres in which the majority of new development will be focussed are adjacent or close to European sites, or have a significant linkage to them:
- North Pennine Moors SPA, North Pennine Moors SAC, Tyne and Allen River Gravels SAC, North Pennines Dales Meadows SAC (Allendale)
 - Northumbria Coast SPA and Ramsar Site, Northumberland Marine SPA (Amble, Blyth, Newbiggin-by-the-Sea, Seahouses, Seaton Sluice)
 - Tweed Estuary SAC (Berwick upon Tweed)
 - Berwickshire and North Northumberland Coast SAC (Berwick upon Tweed, Seahouses)
 - River Tweed SAC (Wooler)
- 5.14 **Given proximity and cumulative disturbance issues (especially for the coastal European sites) and given that the policy specifically directs development to these locations, it is necessary to proceed to appropriate assessment in relation to these European sites. Primary issues concern:**
- **increased disturbance to breeding birds (upland SPAs) and breeding, migratory and wintering birds (coastal SPAs);**
 - **impacts on functional land for breeding birds (upland SPAs);**
 - **increased trampling damage (upland and coastal SACs);**
 - **nutrient enrichment (River Tweed SAC, Tweed Estuary SAC).**

Policy STP 2 Presumption in Favour of Sustainable Development (Strategic Policy)

- 5.15 Screened out as the presumption in favour of sustainable development does not apply to development requiring appropriate assessment under the Birds or Habitats Directives, as highlighted in paragraph 4.40 of the supporting text.

Policy STP 3 Principles of Sustainable Development (Strategic Policy)

- 5.16 The policy reflects the environmental elements of sustainable development and so will be protective – screened out.

Policy STP 4 Climate Change Mitigation and Adaptation (Strategic Policy)

- 5.17 This policy is unlikely to have a significant impact on European sites given the nature of the policy and the protection contained within it, so it can be screened out.

- Policy STP 5 Health and Wellbeing (Strategic Policy)
5.18 No effects are likely due to the nature of the policy, and so it can be screened out.
- Policy STP 6 Green Infrastructure (Strategic Policy)
5.19 This policy is unlikely to have a significant impact on European sites given the nature of the policy and the protection contained within it, so it can be screened out.
- Policy STP 7 Strategic Approach to the Green Belt (Strategic Policy)
5.20 No effects are likely due to the nature of the policy, and so it can be screened out.
- Policy STP 8 Development in the Green Belt (Strategic Policy)
5.21 No effects are likely due to the nature of the policy, and so it can be screened out.
- Policy STP 9 Safeguarded Land (Strategic Policy)
5.22 This policy will not lead to development and so can be screened out.
- Policy ECN 1 Planning Strategy for the Economy (Strategic Policy)
5.23 This is a general statement of policy that is unlikely to have a significant effect on any European sites – screened out.
- Policy ECN 2 Blyth Estuary Strategic Employment Area (Strategic Policy)
5.24 **Protective wording is included regarding designated sites; however, given that this policy makes land allocations close to the Northumbria Coast SPA/Ramsar Site and the Northumberland Marine SPA it will need to proceed to appropriate assessment.**
- Policy ECN 3 West Hartford Prestige Employment Area (Strategic Policy)
5.25 Given the distance from European sites and the protective wording within the policy, it is unlikely to have a significant effect and can be screened out.
- Policy ECN 4 'Round 2' Enterprise Zones (Strategic Policy)
5.26 Given the distance from European sites and the nature of the uses permitted by the policy, it is unlikely to have a significant effect and can be screened out.
- Policy ECN 5 Large Scale Windfall Employment Development (Strategic Policy)
5.27 The policy establishes criteria for assessing applications for windfall employment development, including appropriate ecological protection. Therefore it is unlikely to have a significant effect on any European sites and can be screened out.
- Policy ECN 6 General Employment Land – Allocations and Safeguarding (Strategic Policy)
5.28 Given the distance from European sites and the protective wording within the policy, it is unlikely to have a significant effect and can be screened out.

- Policy ECN 7 Key General Employment Areas for B-Class Uses
- 5.29 This policy establishes criteria for different classes of employment uses on allocated employment land. Therefore it is unlikely to have a significant effect on any European sites and can be screened out.
- Policy ECN 8 Areas for Wider Employment-Generating Uses
- 5.30 This policy concerns the expansion of use classes on existing employment sites, subject to this being compatible with existing businesses and adjoining land uses. As such it is unlikely to have a significant effect on any European sites and can be screened out.
- Policy ECN 9 Additional Flexibility in General Employment Areas
- 5.31 This policy establishes criteria for different classes of employment uses on allocated employment land. Therefore it is unlikely to have a significant effect on any European sites and can be screened out.
- Policy ECN 10 Loss or Depletion of Employment Land
- 5.32 **This policy could increase net housing numbers within the coastal zone of influence for the Northumbria Coast SPA/Ramsar Site, Northumberland Marine SPA, Berwickshire and North Northumberland Coast SAC, Lindisfarne SPA and Ramsar Site and North Northumberland Dunes SAC, and so it will need to proceed to appropriate assessment.**
- Policy ECN 11 Employment Uses in Built-up Areas and Home Working
- 5.33 This policy is unlikely to have a significant impact on European sites given the nature of the policy and the protection contained within it, so it can be screened out.
- Policy ECN 12 A Strategy for Rural Economic Growth (Strategic Policy)
- 5.34 General aspiration – unlikely to have a significant effect and so can be screened out.
- Policy ECN 13 Meeting Rural Employment Needs (Strategic Policy)
- 5.35 Given the restricted nature and scale of employment supported by this policy significant effects on European sites are unlikely and the policy can be screened out.
- Policy ECN 14 Farm/Rural Diversification
- 5.36 This policy restricts the scale of potential development by requiring that it does not prejudice the operational needs of the host farm and includes protective wording concerning ecological impacts. Therefore it is unlikely to have a significant effect on any European sites and can be screened out.
- Policy ECN 15 Tourism and Visitor Development
- 5.37 While this policy focusses larger scale development within main towns and service centres, this still has the potential to have a significant effect, especially on the coast where such settlements are immediately adjacent to European sites, and in some upland areas such as the North Pennines. **Therefore this policy will need to**

go forward to appropriate assessment in relation to bird disturbance and trampling impacts for the following European sites:

**Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
North Pennine Moors SPA
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC**

Policy ECN 16 Green Belt and Tourism and Visitor Economy

- 5.38 The requirement to limit impacts on the green belt will constrain the nature and scale of development supported by this policy; however, significant effects arising from development supported by this policy cannot be ruled out. **Therefore this policy will need to go forward to appropriate assessment in relation to bird disturbance and trampling impacts for the following European sites:**

**Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
North Pennine Moors SPA
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC**

Policy ECN 17 Military Establishments

- 5.39 RAF Boulmer is the only military establishment in the Local Plan area located close to European sites and the nature of its operations is such that it is unlikely to have a significant effect on them. Other military sites in the Plan area are both distant from European sites and do not undertake operations likely to have a significant effect on them. Therefore the policy can be screened out.

Policy TCS 1 Hierarchy of Centres (Strategic Policy)

- 5.40 No effects are likely as this policy encourages the continuation of retailing within town centres in accordance with their existing roles, and so it can be screened out.

Policy TCS 2 Defining Centres in Main Towns (Strategic Policy)

- 5.41 This policy confirms the areas within which town centre uses should normally be located, and as such is unlikely to have a significant effect on any European sites and can be screened out.

Policy TCS 3 Maintaining and Enhancing the Role of Centres (Strategic Policy)

- 5.42 No effects are likely as this policy encourages the location of retailing within town centres in accordance with their existing roles, and so it can be screened out.

Policy TCS 4 Proposals Outside Centres

- 5.43 No effects are likely because this policy establishes sequential tests and criteria for town centre type uses outside of centres, and so it can be screened out.

Policy TCS 5 Keeping High Streets Vibrant

- 5.44 No effects are likely as this policy controls uses within key shopping frontages in town centres, and so it can be screened out.

Policy TCS 6 Hot Food Takeaways

- 5.45 No effects are likely as this policy controls the location of takeaways, and so it can be screened out

Policy HOU 1 Making the Best Use of Existing Buildings (Strategic Policy)

- 5.46 **This policy is primarily concerned with the efficient use of existing housing stock. However, it also permits conversion of other buildings to residential use subject to certain caveats and so could increase the net number of residential units within the coastal zone of influence. Accordingly this policy will need to go forward to appropriate assessment in relation to the following European sites:**

**Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC**

Policy HOU 2 Provision of New Residential Development (Strategic Policy)

- 5.47 **This policy provides for a minimum of 17,700 net additional dwellings over the plan period to meet identified needs and projections, in locations consistent with the Spatial Strategy and therefore with a focus on Main Towns and Service Centres. A number of Main Towns and Service Centres in Northumberland are adjacent to or close to European sites on the coast and to a lesser extent in the uplands. This policy will need to go forward to appropriate assessment in relation to the following European sites:**

**Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC
Tweed Estuary SAC
River Tweed SAC
North Pennine Moors SPA
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC**

Policy HOU3 Housing Requirements for Neighbourhood Plan Areas (Strategic Policy)

- 5.48 **This policy sets out indicative minimum housing requirements that Neighbourhood Plans should include to help meet Northumberland's overall housing requirement. A number of Neighbourhood Plan areas in Northumberland are adjacent to or close to European sites on the coast and to a lesser extent in the uplands.**

This policy will need to go forward to appropriate assessment in relation to the following European sites:

**Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC
Tweed Estuary SAC
River Tweed SAC
North Pennine Moors SPA
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC**

Policy HOU 4 Housing Development Site Allocations (Strategic Policy)

- 5.49 **While the scale of allocations is comparatively small, allocated sites are located within the zone of influence of the coastal European sites and those in the North Pennines, and so this policy should proceed to appropriate assessment alongside Policy HOU 2 in relation to the following European sites:**

**Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC
Tweed Estuary SAC
North Pennine Moors SPA
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC**

Policy HOU 5 Housing Types and Mix

- 5.50 As this policy only concerns the density and type of housing it will not have a significant effect on a European site alone or in-combination and so can be screened out.

Policy HOU 6 Affordable Housing Provision (Strategic Policy)

- 5.51 No significant effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy HOU 7 Exception Sites

- 5.52 No effects are likely due to the restrictive nature of the policy and the protective elements within it, and so it can be screened out.

Policy HOU 8 Residential Development in the Open Countryside

- 5.53 **This policy supports a net increase in residential dwellings in the open countryside in certain circumstances, and so will go forward to appropriate assessment in relation to the following European sites:**

Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC
Tweed Estuary SAC
River Tweed SAC
North Pennine Moors SPA
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC

Policy HOU 9 Residential Development Management

- 5.54 **This policy facilitates housing within settlements and in certain limited circumstances outside of settlements and so will need to go forward to appropriate assessment in relation to the following European sites:**

Northumbria Coast SPA and Ramsar Site
Northumberland Marine SPA
Lindisfarne SPA and Ramsar Site
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC
Tweed Estuary SAC
River Tweed SAC
North Pennine Moors SPA
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC

Policy HOU 10 Second and Holiday Homes

- 5.55 This policy concerns the nature of occupation rather than the location or extent of new housing and so is unlikely to have a significant effect on any European sites – screened out.

Policy HOU 11 Homes for Older and Vulnerable People (Strategic Policy)

- 5.56 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy HOU 12 Provision for Gypsy, Roma and Traveller Communities

- 5.57 No effects are likely due to the restrictive nature of the policy and the protective elements within it, and so it can be screened out.

Policy QOP 1 Design Principles (Strategic Policy)

- 5.58 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy QOP 2 Good Design and Amenity

- 5.59 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy QOP 3 Public Realm Design Principles

- 5.60 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy QOP 4 Landscaping and Trees

- 5.61 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy QOP 5 Sustainable Design and Construction

- 5.62 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy QUP 6 Delivering Well-Designed Places

- 5.63 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy TRA 1 Promoting Sustainable Connections (Strategic Policy)

- 5.64 This policy sets out how new development should promote accessibility, particularly by reducing the need to travel, and prioritising pedestrians, cyclists and public transport. Consequently it can be screened out.

Policy TRA 2 The Effects of Development on the Transport Network

- 5.65 This policy concerns highways standards around developments and could not affect European sites – screened out

Policy TRA 3 Improving Northumberland's Core Road Network

- 5.66 **This policy supports the improvement of Northumberland's core road network. While this will not in itself have a significant effect on any European sites as it is aspirational rather than prescriptive, its effects will need to be considered in-combination with other plans and policies concerning transport, including the Council's own Local Transport Plan, the Northumberland Economic Strategy and plans and projects developed by the North East Combined Authority and the Highways Agency.**

Policy TRA 4 Parking Provision in New Development

- 5.67 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy TRA 5 Rail Transport and Safeguarding Facilities

- 5.68 This policy is unlikely to have a significant effect because its purpose is only to safeguard land from development, so that it remains available for possible future public transport and rail freight. Therefore it can be screened out.

Policy TRA 6 Newcastle International Airport

- 5.69 This policy is restricted to maintaining a supply of land that could be available for any future development of airport facilities at Newcastle. This does not have direct implications for any European sites, and in the absence of any current expansion

plans it is not possible to identify any indirect effects. Consequently this policy can be screened out.

Policy TRA 7 Aerodrome Safeguarding Areas

- 5.70 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy TRA 8 Ports, Harbours and Beach Launch Facilities (Strategic Policy)

- 5.71 This policy includes specific protection for European sites and also requires a demonstration of no net loss of intertidal or subtidal habitats. Consequently it can be screened out.

Policy ICT 1 Planning for High Quality Communications Infrastructure

- 5.72 This policy is unlikely to have a significant impact on European sites given the protection contained within it and the nature and scale of relevant development, and so it can be screened out.

Policy ICT 2 New Developments and Infrastructure Alignment

- 5.73 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy ENV 1 Approaches to Assessing the Impact of Development on the Natural, Historic and Built Environment (Strategic Policy)

- 5.74 No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.

Policy ENV 2 Biodiversity and Geodiversity

- 5.75 No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.

Policy ENV 3 Landscape

- 5.76 No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.

Policy ENV 4 Tranquillity, Dark Skies and a Sense of Rurality

- 5.77 No effects are likely due to the nature of the policy, and so it can be screened out.

Policy ENV 5 Northumberland Coast Area of Outstanding Natural Beauty

- 5.78 No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.

Policy ENV 6 North Pennines Area of Outstanding Natural Beauty

- 5.79 No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.

Policy ENV 7 Historic Environment and Heritage Assets

- 5.80 No effects are likely due to the nature of the policy, and so it can be screened out.

- 5.81 Policy ENV 8 Frontiers of the Roman Empire – Hadrian’s Wall World Heritage Site
No effects are likely due to the nature of the policy, and so it can be screened out.
- 5.82 Policy ENV 9 Conservation Areas
No effects are likely due to the nature of the policy, and so it can be screened out.
- 5.83 Policy WAT 1 Water Quality
No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.
- 5.84 Policy WAT 2 Water Supply and Sewerage
No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.
- 5.85 Policy WAT 3 Flooding
No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.
- 5.86 Policy WAT 4 Sustainable Drainage Systems
No effects are likely due to the nature of the policy, and so it can be screened out.
- 5.87 Policy WAT 5 Coastal Erosion and Coastal Change Management
No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.
- 5.88 Policy POL 1 Unstable and Contaminated Land
No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.
- 5.89 Policy POL 2 Pollution and Air, Soil and Water Quality
Protective policy – can be screened out.
- 5.90 Policy POL 3 Agricultural Land Quality
No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.
- 5.91 Policy MIN 1 Environmental Criteria for Assessing Minerals Proposals (Strategic Policy)
No effects are likely due to the nature of the policy and the protective wording within it, and so it can be screened out.
- 5.92 Policy MIN 2 Criteria for Assessing the Benefits of Minerals Proposals (Strategic Policy)
No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.
- Policy MIN 3 Mineral and Landfill Site Restoration, Aftercare and After-use (Strategic Policy)

5.93 No effects are likely due to the nature of the policy and its requirement for net gains in biodiversity, and so it can be screened out.

Policy MIN 4 Safeguarding Mineral Resources (Strategic Policy)

5.94 No effects are likely due to the nature of the policy, and so it can be screened out.

Policy MIN 5 Safeguarding Minerals Related Infrastructure (Strategic Policy)

5.95 No effects are likely due to the nature of the policy, and so it can be screened out.

Policy MIN 6 Aggregate Minerals (Strategic Policy)

5.96 This is a criteria-based policy that includes a protective criterion for the environment, and so it can be screened out.

Policy MIN 7 Aggregate Mineral Site Allocations – Sand and Gravel (Strategic Policy)

5.97 This policy identifies preferred areas for sand and gravel extraction as follows:

Site	Size of reserve and area of land	European sites that could be affected
Preferred areas for sand and gravel extraction		
Anick Grange Haugh, Hexham	9 million tonnes, 90 ha	None
Wooperton Quarry east extension	1 million tonnes, 30 ha	River Tweed SAC 780m to the north east at closest point
West Wharmley	2 million tonnes, 46ha	Tyne and Allen River Gravels SAC is 500m east of the site at closest point

5.98 The site east of Wooperton Quarry does not have any watercourses connecting it to the SAC. The site is well outside of flood zones 2 and 3, being about 20m above channel level. Accordingly it can be screened out.

5.99 The northern edge of the site at West Wharmley is within Flood Zones 3 and 2, while the majority of the site is within Flood Zone 1. Accordingly, care will need to be taken in site design to avoid storing soils or chemicals such as fuels or lubricants within the flood zone. A flood could affect the northern margin of the site and so could mobilise silt and carry it downstream towards the SAC. However, the whole of the SAC is well within flood zones 2 and 3 and so in the event that the northern margin of the site floods, the SAC will already be inundated with heavily silt-laden flood water. Any silt from the site will be no different in its characteristics to the silt already being carried by the river, and the amount will be inconsequential compared to that already entrained in the water column. Accordingly it can be screened out.

5.100 Otherwise, the policy is a general statement to ensure a steady and adequate supply of aggregates, with criteria including appropriate environmental protection and so it can be screened out.

Policy MIN 8 Aggregate Mineral Site Allocations – Crushed Rock (Strategic Policy)

5.101 This policy identifies preferred areas for hard rock extraction for crushing as follows:

Site	Size of reserve and area of land	European sites that could be affected
Preferred areas for crushed rock extraction for aggregates		
Belford Quarry Extension	5 million tonnes , 30ha	Lindisfarne SPA and Ramsar Site and Berwickshire and North Northumberland Coast SAC are 1.5km east of the site
Divethill Quarry north and east extensions	6.6 million tonnes, 28.5ha	None
Longhoughton Quarry east extension	1.75 million tonnes, 20.5ha	Northumbria Coast SPA and Ramsar Site 2.3km to the east at the closest point
Northside	4 million tonnes, 28 ha	None

5.102 The distance between the site east of Longhoughton Quarry and the Northumbria Coast SPA and Ramsar Site is such that there is no risk of disturbance to SPA birds arising from the operation of the quarry, and so it can be screened out.

5.103 The distance between the site at Belford Quarry and the Lindisfarne SPA and Ramsar Site is such that there is no risk of disturbance to SPA or Ramsar Site birds arising from the operation of the quarry. There are no pathways by which the operation of the quarry could affect any of the features of the Berwickshire and North Northumberland SAC. Accordingly it can be screened out.

5.104 Otherwise, the policy is a general statement to ensure a steady and adequate supply of aggregates, with criteria including appropriate environmental protection and so it can be screened out.

Policy MIN 9 Coal (Strategic Policy)

5.105 This policy includes an overall criterion concerning environmental protection plus specific criteria that will be given particular weight in different sub-areas, including protection for European sites on the coast and in the uplands. Accordingly, significant effects are not likely as a result of this policy and so it can be screened out.

Policy MIN 10 Clays (Strategic Policy)

5.106 This policy lists the criteria by which proposals for clay extraction will be considered, including appropriate protective criteria, and so can be screened out.

Policy MIN 11 Natural Building and Roofing Stone (Strategic Policy)

5.107 This policy lists the criteria by which proposals for building stone extraction will be considered, including appropriate protective criteria, and so can be screened out.

Policy MIN 12 Conventional and Unconventional Oil and Gas (Strategic Policy)

- 5.108 This policy lists the criteria by which proposals for exploration, testing and exploitation of oil and gas will be considered, including appropriate protective criteria, and so can be screened out.

Policy MIN 13 Peat (Strategic Policy)

- 5.109 This policy will not affect any European sites because of its protective nature and so can be screened out.

Policy WAS 1 Principles for the Location of Waste Re-use, Recycling, and Recovery Facilities (Strategic Policy)

- 5.110 This policy only concerns locational considerations including sequential tests; environmental protection is considered in policy WAS02. Therefore it is unlikely to have a significant effect and can be screened out.

Policy WAS 2 Development Management Criteria for Waste Re-use, Recycling, and Recovery Facilities (Strategic Policy)

- 5.111 This policy lists the criteria by which proposals for waste sites will be considered, including appropriate protective criteria, and so can be screened out.

Policy WAS 3 Waste Disposal (Strategic Policy)

- 5.112 This policy confirms Ellington Road Landfill Site as the focus for ongoing disposal of waste that cannot be dealt with using solutions higher up the waste hierarchy, and sets out the criteria for assessing proposals for other sites. The operation of Ellington Road landfill Site does not cause any effect on European sites and the criteria for any other proposals includes an appropriate protective criterion. Accordingly, this policy can be screened out.

Policy WAS 4 Safeguarding Waste Management Facilities (Strategic Policy)

- 5.113 No effects are likely due to the nature of the policy, and so it can be screened out.

Policy REN 1 Renewable and Low Carbon Energy and Associated Energy Storage

- 5.114 This policy establishes the criteria by which proposals for renewable and low carbon energy developments will be assessed, including appropriate protective criteria, and so can be screened out.

Policy REN 2 Onshore Wind Energy Development

- 5.115 This policy is specifically concerned with landscape and residential amenity issues arising from wind turbines. European sites have been taken into account in preparing the maps showing areas suitable for wind turbines, and appropriate protective criteria are included in Policy REN 1. Therefore it can be screened out.

Policy INF 1 Strategic Policy - Delivering Development-Related Infrastructure (Strategic Policy)

- 5.116 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy INF 2 Community Services and Facilities

5.117 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy INF 3 Local Village Convenience Shops and Public Houses

5.118 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy INF 4 Assets of Community Value

5.119 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy INF 5 Open Space and Facilities for Sport and Recreation

5.120 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Policy INF 6 Planning Conditions and Planning Obligations

5.121 No effects are likely as this is not a locational policy, nor is it one that influences the amount of development, and so it can be screened out.

Identification of policies requiring appropriate assessment

5.122 The following policies could have a significant effect on European sites and therefore require appropriate assessment:

- Policy STP 1 Spatial Strategy
- Policy ECN 2 Blyth Estuary Strategic Employment Area
- Policy ECN 10 Loss or Depletion of Employment Land
- Policy ECN 15 Tourism and Visitor Development
- Policy ECN 16 Green Belt and Tourism and Visitor Economy
- Policy HOU 1 Making the Best Use of Existing Buildings
- Policy HOU 2 Provision of New Residential Development
- Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas
- Policy HOU 4 Housing Development Site Allocations
- Policy HOU 8 Residential Development in the Open Countryside
- Policy HOU 9 Residential Development Management

5.123 The potential effects of these policies are as follows:

Increased disturbance to breeding upland waders and raptors

North Pennine Moors SPA

Increased disturbance to breeding seabirds

Northumbria Coast SPA and Ramsar Site

Lindisfarne SPA and Ramsar Site

Northumberland Marine SPA

Increased disturbance to migratory and wintering waders and wildfowl

Northumbria Coast SPA and Ramsar Site
Lindisfarne SPA and Ramsar Site

Increased trampling damage to sensitive vegetation

North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC

Eutrophication from increased sewage discharge

Tweed Estuary SAC
River Tweed SAC

6. Stage 1D: Consideration of Other Plans and Projects

- 6.1 Article 6(3) of the Habitats Directive requires that: '*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.*' Accordingly, it is necessary to consider the cumulative impact of relevant plan components (i.e. all components likely to have more than a 'de minimus' impact on site integrity), existing trends and other plans and projects on the integrity of relevant European sites.
- 6.2 In practice, this means that any proposals or proposed policies identified at Stage 1C as having no effect on European sites can be screened out. However, when a proposal or proposed policy in the Local Plan is identified as having an effect on a European site which in itself is not significant but which cannot be dismissed as being *de minimus*, it must be considered in combination with the effects arising from other plans and projects.
- 6.3 At this stage of the HRA, the following list of other plans and projects have been identified for consideration:

Regional

- More and Better Jobs: the North East Strategic Economic Plan (NELEP, 2017)
- North of Tyne Devolution Deal (HMG, NELEP, Newcastle City Council, Northumberland County Council and North Tyneside Council, 2018)
- Highways Agency Road Projects - A1 Dualling Morpeth – Felton and Adderstone – Belford, A69 and A66 Trans-Pennines route dualling.

Local

- Allendale Neighbourhood Plan 2015-2031 (Made July 2015)
- Alnwick and Denwick Neighbourhood Plan 2014-2031 (Made July 2017)
- Longhorsley Neighbourhood Plan 2017-2031 (Made October 2018)
- Morpeth Neighbourhood Plan 2011-2031 (Made May 2016)
- North Northumberland Coast Neighbourhood Plan 2017-2032 (Made July 2018)
- Ponteland Neighbourhood Plan (to 2031) (Made November 2017)
- Stannington Neighbourhood Plan (2017-2301) (Made September 2018)
- Whittington Neighbourhood Plan (2018-2031) (Made November 2018)
- Bates Colliery and West Sleekburn Local Development Orders (NCC, 2013)
- Northumberland Local Transport Plan 2011-2026 (NCC)
- Northumberland Destination Management Plan 2015-2020 (Northumberland Tourism, 2015)

Adjacent Authorities

- Northumberland National Park Core Strategy and Development Policies (Adopted March 2009)
- Northumberland National Park Local Plan Review, Preferred Options (2018)
- Planning for the Future – Local Plan and Urban Core Plan for Gateshead and Newcastle upon Tyne 2010-2030 (Adopted 2015)

- Newcastle City Council Development Plan Allocations DPD - Pre-Submission (October 2018)
- Gateshead Council Making Spaces for Growing Places Local Plan Document - Submission Draft (October 2018)
- North Tyneside Local Plan (2017-2032) (Adopted 2017)
- County Durham Plan Preferred Options (July 2018)
- South Tyneside Local Development Framework, 2007
- Sunderland Draft Core Strategy and Development Plan, Publication Draft (2018)
- Derwentside Local Plan 2007 Saved Policies
- Carlisle District Local Plan 2015-2030 (Adopted November 2016)
- Eden District Local Plan 2014-2032 (Adopted October 2018)
- Cumbria County Council, Cumbria Minerals and Waste Local Plan (Adopted September 2017)
- Scottish Borders Local Development Plan (Adopted May 2016)
- Scottish Border Local Development Plan 2, Main Issues Report Consultation (November 2018)
- South East Scotland Development Plan Authority, Second Proposed Strategic Development Plan (October 2016) (Decision on the Plan by Scottish Ministers awaited)

Table 1 In-combination assessment

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
More and Better Jobs: The North East Strategic Economic Plan	Summary	£44 million of Local Growth Fund being invested in 11 major infrastructure capital projects £57m secured for 23 transport projects Collaboration with Highways England to secure £900m investment in strategic road network	See below	See below	See below
	Enterprise Zones	Round 1 Enterprise Zone – Blyth Estuary Round 2 Enterprise Zones at Ramparts Business Park, Berwick; Ashwood Business Park, Ashington and Newcastle International Airport	Policy ECN 2 Blyth Estuary Strategic Employment Area Policy ECN 3 West Hartford Prestige Employment Area Policy ECN 4 Round 2 Enterprise Zones	Increased transport emission from A1/A19 Increased disturbance from ship traffic at Blyth affecting Northumbria Coast SPA/Ramsar Site and Northumberland Marine SPA	Transport emissions considered at paragraphs 6.4-6.9 below
	Transport	Support for: Reintroduction of passenger services on Ashington, Blyth and Tyne line Improvements to A19 to improve access to Enterprise Zones	Policy TRA 3 Improving Northumberland’s Core Road Network Policy TRA 5 Rail Transport and Safeguarding Facilities	Reopening of the ABT line – positive (emissions reduction) Increased transport emission from A19	Transport emissions considered at paragraphs 6.4-6.9 below.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
		Improvements to A69		and A69	
North of Tyne Devolution Deal		Government investment of £20m per annum for 30 years into a North of Tyne Investment Fund. Development of energy and low carbon industries at Blyth and Tyne North Bank. Support for accelerated housing delivery informed by Local Housing Need figures including establishment of North of Tyne Housing and Land Board to oversee housing delivery.	Policy ECN 2 Blyth Estuary Strategic Employment Area Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Blyth - Northumbria Coast SPA/Ramsar Site and Northumberland Marine SPA – increased disturbance from ship traffic.	These impacts on these European sites are already screened in. Impacts arising from ship traffic at Blyth already screened in.
				Housing – increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.
Planning for the Future – Local Plan and Urban Core Plan for Gateshead and Newcastle upon Tyne 2010-2030	Housing and employment	Spatial strategy includes provision for at least 30000 new homes (21,600 to be located within the existing built-up area and 8,400 in neighbourhood and village growth areas) and	Policy ECN 1 Planning Strategy for the Economy Policy ECN 2 Blyth Estuary Strategic Employment Area Policy ECN 3 West Hartford Prestige	Housing – increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
		and 22,000 new jobs.	<p>Employment Area Policy ECN 4 Round 2 Enterprise Zones Policy ECN 5 Large Scale Windfall Employment Development Policy ECN 6 General Employment Land – Allocations and Safeguarding Policy ECN 7 Key General Employment Areas for B-Class Uses Policy ECN 8 Areas for Wider Employment-Generating Uses Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside</p>	SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Policy HOU 9 Residential Development Management		
	Transport	Policy CS13 Transport includes The creation of additional capacity on the Strategic Road Network, including the provision of an additional lane on the A1 in both directions from the A1/A19 Interchange at Seaton Burn to the Scotswood Road slip-- roads, and between the southern extent of the Lobley Hill Major Scheme improvements at Coalhouse and the A1/A194(M) bifurcation at Birtley.	Policy TRA 3 Improving Northumberland's Core Road Network	Increased transport emission from A1/A19	Transport emissions considered at paragraphs 6.4-6.9 below.
	Waste	Household waste is likely to be directed to Ellington landfill site in Northumberland after Path Head landfill site closes in 2017 or 2018.	Policy WAS 1 Principles for the Location of Waste Re-use, Recycling and Recovery Policy WAS 2 Development Management Criteria for waste Re-use, Recycling and Recovery Facilities	None	Screened out
Newcastle City Council Development Plan	Employment Land	Policy DM1 allocates 12 new employment sites in Byker, Scotswood, Newburn,	Policy ECN 1 Planning Strategy for the Economy Policy ECN 2 Blyth	Northumbria Coast SPA/Ramsar Site and Northumberland	These impacts on these European sites are already screened

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
Allocations DPD - Pre-Submission (October 2018)		Brunswick and Walker Riverside for B1 (businesses), B2 (general industrial) and B8 (storage and distribution) uses	Estuary Strategic Employment Area Policy ECN 3 West Hartford Prestige Employment Area Policy ECN 4 Round 2 Enterprise Zones Policy ECN 5 Large Scale Windfall Employment Development Policy ECN 6 General Employment Land – Allocations and Safeguarding Policy ECN 7 Key General Employment Areas for B-Class Uses Policy ECN 8 Areas for Wider Employment-Generating Uses	Marine SPA – increased disturbance from ship traffic.	in.
	Housing	Policy DM5 allocates 41 sites for housing, capable of delivering about 4000 houses.	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception	Housing – increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Northumberland Dunes SAC	
	Minerals	Policy DM34 designates and area of search for coal and secondary minerals at Dewley Hill on the western edge of Newcastle	Policy MIN 9 Coal	None	Screened out
Gateshead Council Making Spaces for Growing Places Local Plan Document	Employment	Policy MSGP1 allocates sites with capacity of 31.57ha developable land for B1, B2 and B8 uses	Policy ECN 1 Planning Strategy for the Economy Policy ECN 2 Blyth Estuary Strategic Employment Area Policy ECN 3 West Hartford Prestige Employment Area Policy ECN 4 Round 2 Enterprise Zones Policy ECN 5 Large Scale Windfall Employment Development Policy ECN 6 General Employment Land – Allocations and Safeguarding Policy ECN 7 Key General Employment Areas for B-	Northumbria Coast SPA/Ramsar Site and Northumberland Marine SPA – increased disturbance from ship traffic.	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Class Uses Policy ECN 8 Areas for Wider Employment-Generating Uses		
	Housing	Policy MSGP10 allocates 104ha of land for housing, with a capacity of 2851 new dwellings	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Housing – increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.
	Transport	Policy MSGP18 safeguards a site for a Sunderland road link, the A1 Birtley to Coalhouse for highway improvements and land at Hewarth roundabout for junction improvements	Policy TRA 3 Improving Northumberland's Core Road Network	Increased transport emission from A1/A19	Transport emissions considered at paragraphs 6.4-6.9 below.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
	Minerals	Policy MSGP51 safeguards Gateshead Wharf as a site for the landing of marine aggregates and MSGP52 safeguards the brick clay deposit at Lamesley against sterilisation by development.	Policy TRA 8 Ports and Harbours Policy Min 6 Aggregate Minerals Policy Min 10 Clays	None	Screened out
North Tyneside Local Plan 2017-2032	Housing	Outstanding housing target to 2031-32 of 9771 units (= 698 units per annum)	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.
	Transport	The plan supports a range of improvements to junctions on the A19(T) within and close to the Borough	Policy TRA 3 Improving Northumberland's Core Road Network	Increased transport emission from A1/A19	Transport emissions considered at paragraphs 6.4-6.9 below.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
	Waste	Municipal waste currently goes to Path Head landfill site in Gateshead and the energy from waste plant on Teeside; closure of Path Head is likely to cause the diversion of waste to Ellington Road landfill site in Northumberland	Policy WAS 1 Principles for the Location of Waste Re-use, Recycling and Recovery Policy WAS 2 Development Management Criteria for waste Re-use, Recycling and Recovery Facilities	None	Screened out
South Tyneside Local Development Framework 2007	Housing	Housing allocation 2016-2021 of 1650 per annum	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site	These impacts on these European sites are already screened in.
Sunderland Draft Core Strategy and Development Plan, Publication	Housing	13,800 additional homes 2017-2033 (862 units per annum)	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing	Increased recreational disturbance affecting	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
Draft 2018			Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Northumbria Coast SPA/Ramsar Site	
County Durham Plan Preferred Options 2018	Housing	6272 additional homes 2018-2036 (348 units per annum)	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Management		
Northumberland National Park Authority Local Development Framework	Housing	No housing target; new residential development subject to local needs test. Major development only permitted in exceptional circumstances and subject to a series of tests.	Policy HOU 2 Provision of New Residential Development Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	None	Screened out
	Tourism	Support for small scale tourism and recreation developments that don't impact on NNP special qualities	Policy ECN 14 Farm/Rural Diversification Policy ECN 15 Tourism and Visitor Development Policy ECN 16 Green Belt and Tourism and Visitor Economy	None	Screened out
Carlisle District Local Plan 2015-2030	Housing	480-565 units per annum 2015-2030	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing	Recreational disturbance affecting North Pennine Moors SPA Recreational damage affecting North Pennine Moors SAC, North	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Development Site Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Pennine Dales Meadows SAC, Tyne and Allen River Gravels SAC	
	Tourism	Policy EC9 provides criteria for tourism development, but not specifically including the safeguarding of nature conservation interests	Policy ECN 14 Farm/Rural Diversification Policy ECN 15 Tourism and Visitor Development Policy ECN 16 Green Belt and Tourism and Visitor Economy	Recreational disturbance affecting North Pennine Moors SPA Recreational damage affecting North Pennine Moors SAC, North Pennine Dales Meadows SAC, Tyne and Allen River Gravels SAC	These impacts on this European site are already screened in.
Eden District Local Plan 2014-2032 Submission Draft	Housing	Annual housing requirement of 138 per annum	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site	Recreational disturbance affecting North Pennine Moors SPA Recreational damage affecting North Pennine Moors SAC, North Pennine Dales	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Allocations Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Meadows SAC, Tyne and Allen River Gravels SAC	
	Tourism	Policy EC4 provides criteria for tourism development, but not specifically including the safeguarding of nature conservation interests	Policy ECN 14 Farm/Rural Diversification Policy ECN 15 Tourism and Visitor Development Policy ECN 16 Green Belt and Tourism and Visitor Economy	Recreational disturbance affecting North Pennine Moors SPA Recreational damage affecting North Pennine Moors SAC, North Pennine Dales Meadows SAC, Tyne and Allen River Gravels SAC	These impacts on these European sites are already screened in.
Scottish Borders Council Local Development Plan	Housing	Annual housing requirement of 838 per annum 2009-2025	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 4 Housing Development Site Allocations	Nutrient inputs from sewage treatment affecting the River Tweed SAC, Tweed Estuary, Berwickshire and North Northumberland Coast SAC, Lindisfarne SPA and	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Policy HOU 7 Exception Sites Policy HOU 8 Residential Development in the Open Countryside Policy HOU 9 Residential Development Management	Ramsar Site	
Morpeth Neighbourhood Plan	Housing	1700 units over the plan period, already met through existing commitments	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 9 Residential Development Management	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.
	Employment Land	8ha allocated at Fairmoor and 2ha at Northgate Hospital, both at the north end of Morpeth	Policy ECN 1 Planning Strategy for the Economy Policy ECN 4 Round 2 Enterprise Zones Policy ECN 5 Large Scale Windfall Employment Development Policy ECN 6 General Employment Land – Allocations and	Change in commuting patterns could increase or decrease net emissions	No European sites close enough to be affected by any changes between here and major employment or residential areas

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Safeguarding Policy ECN 7 Key General Employment Areas for B-Class Uses Policy ECN 8 Areas for Wider Employment-Generating Uses		
	Transport	The Plan supports the following road improvements: A road link between Loansdean and Stobhill A four-way junction onto the A1 south of the town.	Policy TRA 3 Improving Northumberland's Core Road Network	Increased traffic generation causing increased transport emissions	Transport emissions considered at paragraphs 6.4-6.9 below.
Alnwick Neighbourhood Plan	Housing	530 units required up to 2031; 482 on sites allocated in the NP in and around Alnwick, with the balance on windfall sites	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 9 Residential Development Management	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.
	Employment Land	12ha allocated at Greensfield/Cawledge	Policy ECN 1 Planning Strategy for the Economy Policy ECN 4 Round 2 Enterprise Zones Policy ECN 5 Large Scale	Change in commuting patterns could increase or decrease net emissions but no	Screened out.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Windfall Employment Development Policy ECN 6 General Employment Land – Allocations and Safeguarding Policy ECN 7 Key General Employment Areas for B-Class Uses Policy ECN 8 Areas for Wider Employment-Generating Uses	European sites close enough to be affected by any changes between here and major employment or residential areas	
	Tourism	Support for tourism development, subject to criteria including impact on natural environment	Policy ECN 14 Farm/Rural Diversification Policy ECN 15 Tourism and Visitor Development Policy ECN 16 Green Belt and Tourism and Visitor Economy	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.
Allendale Neighbourhood Plan	Housing	Support for individual dwellings and small-scale development, subject to criteria	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan	Recreational disturbance affecting North Pennine Moors SPA Recreational damage affecting	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Areas Policy HOU 9 Residential Development Management	North Pennine Moors SAC, North Pennine Dales Meadows SAC, Tyne and Allen River Gravels SAC	
	Tourism	Support for business and tourism development, subject to strict criteria including impact on special qualities of North Pennines AONB	Policy ECN 14 Farm/Rural Diversification Policy ECN 15 Tourism and Visitor Development Policy ECN 16 Green Belt and Tourism and Visitor Economy	Recreational disturbance affecting North Pennine Moors SPA Recreational damage affecting North Pennine Moors SAC, North Pennine Dales Meadows SAC, Tyne and Allen River Gravels SAC	These impacts on these European sites are already screened in.
North Northumberland Coast Neighbourhood Plan 2017-2032	Housing	New housing restricted to principal residences, on sites within the settlement boundaries and outwith the coastal strip and single dwellings within defined hamlets	Policy HOU 2 Provision of New Residential Development Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas Policy HOU 9 Residential Development Management	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
	Tourism	New purpose-built tourism development not supported unless need that cannot be met by existing provision is demonstrated Provision of a base for low-impact water-based recreation and nature-based tourism in the car park at Beadnell is supported	Policy ECN 14 Farm/Rural Diversification Policy ECN 15 Tourism and Visitor Development Policy ECN 16 Green Belt and Tourism and Visitor Economy	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	These impacts on these European sites are already screened in.
Longhorsley Neighbourhood Plan 2017-2031	n/a	The nearest European sites are over 10km away; given the nature and scope of a neighbourhood plan any impacts will be de minimus and so it can be screened out of the in-combination assessment.	n/a	None	Screened out
Ponteland Neighbourhood Plan 2017-2031	n/a	The nearest European sites are over 10km away; given the nature and scope of a neighbourhood plan any impacts will be de minimus and so it can be screened out of the in-combination assessment.	n/a	None	Screened out

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
Stannington Neighbourhood Plan 2017-2031	Employment	Policy 5 supports mall-scale business proposals in certain locations	Policy ECN 1 Planning Strategy for the Economy Policy ECN 8 Areas for Wider Employment-Generating Uses	The only sites within 10km are the Northumberland Marine SPA (4.2 km from edge of parish) and Northumbria Coast SPA/Ramsar Site (7.5km from edge of parish).	Screened out as so small scale and distant.
Whittington Neighbourhood Plan 2018-2031	n/a	The nearest European sites are over 10km away; given the nature of a neighbourhood plan any impacts will be de minimus and so it can be screened out of the in-combination assessment.	n/a	None	Screened out
Bates Colliery and West Sleekburn Local Development Orders	Employment Land	The LDOs permit non-EIA development for offices, light and general industry, storage and distribution and research and development on 8ha of land at Bates Colliery and a 44ha site and a 21ha site at East Sleekburn.	Policy ECN 1 Planning Strategy for the Economy Policy ECN 2 Blyth Estuary Strategic Employment Area Policy ECN 5 Large Scale Windfall Employment Development Policy ECN 6 General Employment Land – Allocations and Safeguarding Policy ECN 7 Key General	Increased disturbance from ship traffic. New affecting Northumbria Coast SPA/Ramsar Site and Northumberland Marine SPA	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
			Employment Areas for B-Class Uses Policy ECN 8 Areas for Wider Employment-Generating Uses		
Highways Agency Road Projects - A1 Dualling Morpeth – Felton and Adderstone	Proposed trunk road improvement scheme	The upgrading of the A1 from Morpeth to Felton to dual carriageway standard and junction improvements in the Adderstone to Belford area	Policy TRA 3 Improving Northumberland’s Core Road Network	Increased traffic generation causing increased transport emissions	Transport emissions considered at paragraphs 6.4-6.9 below.
Northumberland Local Transport Plan	Blyth Central Link Road	A new link would be created between Rotary Way and a new junction on the A189 Spine Road. It is anticipated that a new road link in this location will support proposals for the development of Blyth and Cambois.	Policy TRA 3 Improving Northumberland’s Core Road Network	Easing congestion is likely to help to stimulate economic activity in the Blyth/Cambois area, potentially increasing traffic generation causing increased transport emissions Increased port-related development could increase disturbance from ship traffic affecting Northumbria Coast SPA/Ramsar Site and Northumberland Marine SPA	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
	Increasing Network Capacity A193 - Cowpen Road Corridor, Blyth	In the short term, capacity improvements to the A193 Cowpen Road are required to allow the town to grow and develop. In the longer term, more radical measures would be required such as the construction of a new link road to the A189 Spine Road.	Policy TRA 3 Improving Northumberland's Core Road Network	Easing congestion is likely to help to stimulate economic activity in the Blyth/Cambois area, potentially increasing traffic generation causing increased transport emissions Increased port-related development could increase disturbance from ship traffic affecting Northumbria Coast SPA/Ramsar Site and Northumberland Marine SPA	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
	Increasing Network Capacity - A189 to Battleship Wharf	The development of wind turbine technology at Battleship Wharf is currently constrained by restrictions on the existing highway network from the A189 to the site. Improvements are currently being designed and external funding sought to facilitate the development.	Policy TRA 3 Improving Northumberland's Core Road Network	Easing congestion is likely to help to stimulate economic activity in the Blyth/Cambois area, potentially increasing traffic generation causing increased transport emissions Increased port-related development could increase disturbance from ship traffic affecting Northumbria Coast SPA/Ramsar Site and Northumberland Marine SPA	These impacts on these European sites are already screened in.
	Ashington, Blyth and Tyne Line	The reintroduction of passenger services on the railway line from Ashington to Newcastle	Policy TRA 5 Rail Transport and Safeguarding Facilities	Any impact likely to be positive (reduction in emissions from road vehicles)	None
Northumberland Destination Management Plan 2015-2020	Northumberland's Tourism Strategy	To increase the number of visitors to Northumberland by 5% by 2020	Policy ECN 14 Farm/Rural Diversification Policy ECN 15 Tourism and Visitor Development Policy ECN 16 Green Belt and Tourism and Visitor Economy	Increased recreational disturbance affecting Northumbria Coast SPA/Ramsar Site and Lindisfarne	These impacts on these European sites are already screened in.

Plan or Project	Details	Relevant Issues	Interaction with Northumberland Local Plan objectives and policies	European sites affected	Outcome
				SPA/Ramsar Site, spread of pirri-pirri bur by recreational users in North Northumberland Dunes SAC	

In-combination assessment - Policy TRA 3 Improving Northumberland's Core Road Network

- 6.4 One policy is identified as not having a significant effect alone but requiring assessment in-combination with other plans and policies, which is Policy TRA 3, Improving Northumberland's Core Road Network. This policy supports full dualling of the A1 through Northumberland and improving local road links to it, and full dualling of the A69 west of Hexham and improving local road links to it. Accordingly, its effects will need to be considered in-combination with other plans and policies concerning transport, including the Council's own Local Transport Plan, the Northumberland Economic Strategy and plans and projects developed by the North East Combined Authority and Highways England (formerly the Highways Agency).
- 6.5 Decisions about the dualling of either road will ultimately lie with central Government and Highways England, which operates, maintains and improves England's motorways and trunk roads. At present, it appears that further dualling of lengths of the A1 is likely during the Local Plan period, while dualling of the A69 west of Hexham is likely to be subject to further investigation and so is possible during the plan period.
- 6.6 Direct effects of dualling would arise from the destruction of European sites to the new road and associated infrastructure, or damage caused by changes to hydrological patterns caused by the engineering works. Indirect effects are more varied, and include increased nitrogen deposition to vegetation and soils from increased traffic levels generated by the increased road capacity, and increased development pressure stimulated by the perceived improvement in the accessibility of parts of the county served by the improved roads.
- 6.7 Direct effects on European sites will not arise from the dualling of either the A1 or the A69, because there are no European sites close enough to either road to be destroyed or damaged by dualling, unless some unexpected and significant deviations from existing routes were considered.
- 6.8 Regarding increases in nitrogen emissions from vehicle exhausts, effects decrease quickly with distance, with the plume also being affected by predominant wind direction. Newham Bog SAC is the nearest European site to the A1 and is 3.3km away at its nearest point. The Tyne and Allen River Gravels SAC is the closest European site to the A69, being 630m from the A69 at Wharmley Riverside and 625m at Wydon Nabb. The IPENS *Atmospheric Nitrogen Theme Plan*¹³ has recently been published and this indicates that vehicle exhaust is not a significant contributor to nitrogen deposition on European sites within Northumberland.
- 6.9 Regarding longer term effects, such as increased development pressure in settlements benefitting from improved accessibility as a result of the highway improvements, it is impossible to undertake any meaningful assessment at the

¹³ Natural England (2015) *Atmospheric Nitrogen Theme Plan – developing a strategic approach for England's Natura 2000 sites*. IPENS TP013

<http://publications.naturalengland.org.uk/publication/6140185886588928?category=5605910663659520>

Local Plan stage as there is too little information as to what these might be. However, any such development will be subject to planning permission and so will be tested against the policies in the Local Plan and subsequent development plan documents, which themselves will have been through HRA.

Stage 2

The Appropriate Assessment

7. Introduction to the Appropriate Assessment

- 7.1 The conclusion of Stage 1 of this assessment concluded that the following policies could have a significant effect on European sites and therefore require appropriate assessment:
- Policy STP 1 Spatial Strategy
 - Policy ECN 2 Blyth Estuary Strategic Employment Area
 - Policy ECN 10 Loss or Depletion of Employment Land
 - Policy ECN 15 Tourism and Visitor Development
 - Policy ECN 16 Green Belt and Tourism and Visitor Economy
 - Policy HOU 1 Making the Best Use of Existing Buildings
 - Policy HOU 2 Provision of New Residential Development
 - Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas
 - Policy HOU 4 Housing Development Site Allocations
 - Policy HOU 8 Residential Development in the Open Countryside
 - Policy HOU 9 Residential Development Management
- 7.2 The potential effects are as follows:
- Increased disturbance to breeding upland waders and raptors
North Pennine Moors SPA
- Increased disturbance to breeding seabirds
Northumbria Coast SPA and Ramsar Site
Lindisfarne SPA and Ramsar Site
Northumberland Marine SPA
- Increased disturbance to migratory and wintering waders and wildfowl
Northumbria Coast SPA and Ramsar Site
Lindisfarne SPA and Ramsar Site
- Increased trampling damage to sensitive vegetation
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC
North Northumberland Dunes SAC
- Spread of Non-Native Invasive Species
North Northumberland Dunes SAC
- Eutrophication from increased sewage discharge
Tweed Estuary SAC
River Tweed SAC
- 7.3 One policy was assessed as having an insignificant effect alone, but a significant effect in-combination with other plans and policies; Policy TRA 3 Improving Northumberland's Core Road Network.

8. Assessment of whether there will be an adverse effect on the integrity of any European sites

Policy ECN 2 Blyth Estuary Strategic Employment Area – Increased disturbance in the Blyth estuary sectors of the Northumbria Coast SPA and Northumberland Marine SPA

- 8.1 The key issues here concern potential impacts on two interest features from the Northumbria Coast SPA and Ramsar Site (purple sandpiper and turnstone) and two interest features from the Northumberland Marine SPA (foraging sandwich tern and arctic tern) arising from industrial development around the Blyth estuary. Purple sandpipers are almost exclusively confined to rocky shore outside the mouth of the estuary and to the breakwater itself, which greatly reduces the potential for impacts arising from these policies. Turnstones are primarily found on the rocky shore but small numbers roost on the North Staithes, which are located just downriver from Battleship Wharf, and at the end of the Mount Pleasant peninsula. Policy ECN 2 does not have any direct implications for either site, and it should be noted that development permitted under the Bates Colliery and West Sleekburn Local Development Orders was found to have no significant effect when the HRA was undertaken of the LDO. While the tern species do forage within the estuary in small numbers, this is a tiny proportion of the extensive foraging area that these particular populations use, and does not have any particularly important features lacking elsewhere in their foraging area. Given this, and their evident tolerance to current industrial activity, **Natural England has advised that there is unlikely to be a significant effect on these species¹⁴.**
- 8.2 **Accordingly, it can be concluded that Policy ECN 2 will not have an adverse effect on the integrity of the Northumbria Coast SPA or the Northumberland Marine SPA. However, it is important that the Mount Pleasant peninsula is protected from inappropriate development, to prevent any in-combination effects with the LDO. Even a small development that reduced the value of Mount Pleasant peninsula for these species could compromise the development of much more economically important sites within the estuary by increasing pressure on the key species and removing the last remaining suitable mitigation sites within the estuary. The Local Plan does not propose anything that could adversely affect the Mount Pleasant peninsula and, as open countryside it has a significant degree of policy protection through the plan.**

¹⁴ Meeting with Katie Finkill-Coombs, Lead Advisor, Natural England, 16/02/16

Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 - Increased disturbance in the North Pennine Moors SPA and increased trampling damage in the North Pennine Moors SAC

- 8.3 Increased disturbance to breeding populations of upland waders and raptors in the North Pennines SPA could potentially arise from housing allocations in nearby settlements such as Allendale, or from tourism development within or close to the SPA.
- 8.4 Heathland and blanket bog vegetation is sensitive to trampling damage. At high trampling pressure, the woody shrubs that dominate heathland vegetation will be damaged and ultimately replaced by bare ground or trampling-resistant grasses, while blanket bog vegetation will be replaced by bare peat. This can trigger the development of erosion channels. Damage then spreads as walkers avoid the erosion gullies, thereby triggered the creation of new gullies.
- 8.5 In addition to the network of statutory rights of way (footpaths, bridleways and byways), much of the SPA and SAC has open access, entitling people to walk anywhere on unenclosed land, subject to certain restrictions. One nationally promoted route, the Pennine Way passes through the SPA and SAC.
- 8.6 The current condition of underlying SSSIs (sites in bold are partially or wholly in Northumberland) is as follows:

Allendale Moors (SPA and SAC)

20% of the site is in favourable condition and 80% in unfavourable recovering. The main reasons for some compartments not being in favourable condition concern issues with land management. No problems with recreational disturbance are noted, and there was an increase in breeding waders between surveys undertaken in 1994/95 and in 2007.

Appleby Fells (SPA only)

8% of the site is in favourable condition and 92%% in unfavourable recovering. No problems with recreational disturbance are noted.

Arkengarthdale, Gunnerside and Reeth Moors (SPA and SAC)

20% of the site is in favourable condition, 74%% in unfavourable recovering and 6% in unfavourable no change. No problems with recreational disturbance are noted.

Bollihope, Pikestone, Eggleston and Woodland Fells (SPA and SAC)

15% of the site is in favourable condition and 85%% in unfavourable recovering. No problems with recreational disturbance are noted.

Bowes Moor (SPA and SAC)

100% of the site is in unfavourable recovering condition. No problems with recreational disturbance are noted.

Cotherstone Moor (SPA and SAC)

18% of the site is in favourable condition and 82% in unfavourable recovering. No problems with recreational disturbance are noted.

East Nidderdale Moors (SPA and SAC)

7% of the site is in favourable condition and 93% in unfavourable recovering. No problems with recreational disturbance are noted.

Geltsdale and Glendue Fells (SPA and SAC)

57% of the site is in favourable condition and 43% in unfavourable recovering. The main reason for some compartments not being in favourable condition is ongoing work to block grips in blanket bog; no problems with recreational disturbance noted.

Hexhamshire Moors (SPA and SAC)

11% of the site is in favourable condition and 89% in unfavourable recovering. The main reasons for some compartments not being in favourable condition concern issues with land management. No problems with recreational disturbance were noted, and there was an increase in breeding waders between surveys undertaken in 1994/95 and in 2007.

Lovely Seat-Stainton Moor (SPA and SAC)

6% of the site is in favourable condition, 87% is in unfavourable recovering and 7% in unfavourable no change. No problems with recreational disturbance are noted.

Lune Forest (SPA and SAC)

12% of the site is in favourable condition and 88% in unfavourable recovering. No problems with recreational disturbance are noted.

Mallerstang - Swaledale Head (SPA and SAC)

10% of the site is in favourable condition, 88% in unfavourable recovering and 2% in unfavourable no change. No problems with recreational disturbance are noted.

Moorhouse and Cross Fell (SPA only)

5% of the site is in favourable condition, 92% in unfavourable recovering and 3% in unfavourable declining. No problems with recreational disturbance are noted.

Muggleswick, Stanhope and Edmundbyers Commons and Blanchland Moor (SPA and SAC)

4% favourable; 96% unfavourable recovering. The main reasons for some compartments not being in favourable condition concern issues with land management. No problems with recreational disturbance are noted.

Upper Teesdale (SPA only)

12% of the site is in favourable condition, 86% in unfavourable recovering and 2% in unfavourable declining. No problems with recreational disturbance are noted.

West Nidderdale, Barden and Blubberhouses Moors (SPA and SAC)

29% of the site is in favourable condition and 71% in unfavourable recovering. No problems with recreational disturbance are noted.

Whitfield Moor, Plenmeller and Asholme Commons (SPA and SAC)

18% of the site is in favourable condition and 82% in unfavourable recovering. The main reasons for some compartments not being in favourable condition concern issues with grazing and burning management. No problems with recreational disturbance are noted, and there was an increase in breeding waders between surveys undertaken in 1994/95 and in 2007.

Current impacts of recreational access

- 8.7 The Natural England commissioned research report *Access Management Report: Three Year Monitoring Surveys at Open Access Land 2006-2008*¹⁵ included 19 open access sites in the North Pennines AONB. 11 of these were judged to have no impacts arising from the introduction of open access under the Countryside and Rights of Way Act 2000, and impacts at six were low. The two remaining sites had impacts which were uncertain but probably low. Seven of these sites were in Northumberland and within the North Pennine Moors SAC:
- Blanchland
 - Wellhope
 - Coanwood
 - Kinght's Cleugh
 - Knockshield Moor
 - Snope Common
 - Whitfield
- 8.8 The report found that there was no impact arising from the introduction of open access at all but one of these sites, due to the low level of use and the tendency of visitors to remain on public rights of way rather than wandering more widely. At Wellhope there was a low impact arising from the introduction of open access; this was the result of a single person observed walking a dog in an area from which dogs had been banned. However, the low level of use overall resulted in a conclusion of low impact rather than anything higher.
- 8.9 The main reason why impacts were non-existent or low is the low level of use and the tendency of most users to remain on the established rights of way

¹⁵ Johnson, C., Taylor, K., Houldin, C., Race, H. & Birtles, J. 2009. *Countryside and Rights of Way (CROW) Act 2000 (Part 1): National Open Access Visitor Survey (2006-2008) - Access Management Report*. Natural England Commissioned Report, Number NECR036c.

network, and indeed the North Pennines had the lowest index of visitor numbers of the 12 areas around England sampled for the report (1.9 out of 5, where 1 is very low use and 2 is low use).

Proposed housing numbers within 10km of the North Pennine Moors SPA and North Pennine Moors SAC

- 8.10 In order to evaluate the impact of Local Plan policies and proposals on the SPA and SAC, it is necessary to consider the increase in population being proposed. A 10km buffer zone has been selected for this process, because there is extensive evidence at both inland and coastal sites that the vast majority of people involved in potentially disturbing activities such as daily dog walking live within 10km of the site concerned. For example, household surveys for the South East Devon European Site Mitigation Strategy found that 91% of visits to the Exe Estuary were made by people living within 10km, although the figure for Dawlish Warren was only 47%, illustrating draw of particular 'honeypot' sites (Liley, D. et al. 2014, pp. 83-93). Visitor surveys for the Solent Disturbance and Mitigation Project found that 90% of visitors by car to Browdown beach came from within 8km, and that even within the very popular site of Chichester Harbour AONB, 56% of visitors by car lived within 8km (Stillman et al 2009, pp.28-32). Winter visitor surveys on the Durham coast in 2012-13 found that 79% of visitors who used the coast at least once per week lived within 8km of the coast (Durham County Council, 2013).
- 8.11 A survey of coastal dog walkers on the North Northumberland Coast was undertaken in 2015-16, the results of which are included in Appendix 6 of this report. 89% of dog-walkers questioned lived within 10km of the coast.
- 8.12 For terrestrial sites, visitor surveys have shown that the 'catchment area' for frequent visitors tends to be smaller than for coastal sites. A visitor survey in the New Forest National Park found that people who visited the National Park at least weekly mostly came from within 7km of the Park boundary (Stillman et al, 2009 pp.31-32), and mitigation strategies for both the Thames Basin Heaths SPA and the Dorset Heathlands SPA, Ramsar Site and SAC are limited to new housing within 5km of the European sites, because on the basis of visitor surveys it was determined that there would be no significant effect arising from housing beyond that distance (Surrey Heath Borough Council, 2012 and Borough of Poole et al., 2012).
- 8.13 Proposed new housing numbers within 10km of the North Pennine Moors SAC and North Pennine Moors SPA are as follows:

Northumberland

Proposed allocation of 419–519 units to 2036 in Haltwhistle, Haydon Bridge, Hexham, Allendale Town and Catton (23-29 units per annum).

Durham - County Durham Plan Preferred Options 2018

52 units per annum 2016-36 in West Durham and North West Durham

Cumbria – Eden Local Plan 2014-2032 Submission Draft and Carlisle District Local Plan (2015-2030)

Penrith 89

Alston 5

Appleby 8

Kirby Stephen 11

Brampton 450

Cumwhinton 35

Warwick Bridge 75

Wetheral 100

Total 749 (50 units per annum)

Tourism policies relevant to the North Pennine Moors SPA and North Pennine Moors SAC

- 8.14 Policy ECN 15 *Tourism and Visitor Development* in the Northumberland Local Plan Regulation 18 Draft Plan includes a protective criterion stating that all tourism development should adhere to the natural environment policies in the Plan. Given this explicit link to these policies and the requirement that the policies in land use plans are taken as a whole, it is considered that robust protection is afforded for European sites from any adverse effects arising from tourism
- 8.15 Tourism is addressed in the County Durham Plan through Policies 8 *Visitor Attractions* and Policy 9 *Visitor Accommodation*. Both policies include protective wording for the natural environment and when recreational disturbance was considered for the North Pennines SPA in the HRA for the County Durham Plan, it was concluded that there would not be an adverse effect in the integrity of the site.
- 8.16 The Eden Local Plan Preferred Options Consultation Draft addresses tourism in Policy EC4 *Tourism Accommodation*. This does not refer explicitly to the Natural Environment; however Policy ENV1 *Protection and Enhancement of the Natural Environment, Biodiversity and Geodiversity* provides strong protection for European sites. The Carlisle District Local Plan 2015-2030 Preferred Options Consultation- Stage Two addresses tourism development in Policy 11 *Arts, Culture, Tourism and Leisure Development*. This includes a criterion concerning environmental protection, and the Plan also includes Policy 62 *Biodiversity and Geodiversity* which provides strong protection for European sites.
- 8.17 **Given current evidence that recreational disturbance is not adversely affecting the SPA and trampling is not damaging the SAC, the low housing numbers proposed close to the SPA and SAC and the protection afforded to the natural environment in relevant tourism policies, it is concluded that any increase in recreational disturbance arising from Policies STP1, ECN 15, ECN 16, HOU 2, HOU 3 and HOU 8 will not have an adverse effect on the integrity of the North Pennine Moors SPA or the North Pennine Moors SAC.**

Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 - Increased trampling damage to sensitive vegetation in the North Pennines Dales Meadows SAC

8.18 The North Pennines Dales Meadow SAC comprises 58 separate SSSIs in the uplands of Northumberland, Durham, Cumbria, Lancashire and North Yorkshire. The interest features comprise mountain hay meadows and purple moor-grass meadows. They are mostly in private ownership, but some are crossed by public rights of way.

8.19 The current condition of underlying SSSIs_(sites in bold text are in Northumberland) is as follows:

Arkle Beck Meadows, Whaw

88% of the site is in favourable condition and 12% in unfavourable recovering. No problems with recreational damage are noted.

Ashes Pasture and Meadows

59% of the site is in favourable condition and 41% in unfavourable recovering. No problems with recreational damage are noted.

Askrigg Bottoms

100% of the site is in favourable condition. No problems with recreational damage are noted.

Aules Hill Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Barrow Burn Meadows

56% of the site is in favourable condition and 44% in unfavourable recovering. No problems with recreational damage are noted.

Bell Sykes Meadows

75% of the site is in favourable condition and 25% in unfavourable recovering. No problems with recreational damage are noted.

Borrow Beck Meadows

99% of the site is in favourable condition and 1% in unfavourable recovering. No problems with recreational damage are noted.

Bowber Head and Piper Hole Meadows

85% of the site is in favourable condition and 15% in unfavourable recovering. No problems with recreational damage are noted.

Bowlees and Friar House Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Bretherdale Meadows

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Catton Lea Meadow

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Cautley Thwaite Meadows and Ecker Secker Beck

100% of the site is in favourable condition. No problems with recreational damage are noted.

Cliff Beck Meadow, Buttertubs

100% of the site is in unfavourable declining condition. This is due to overgrazing and no problems with recreational damage are noted.

Cornriggs Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Deepdale Meadows (Cumbria)

38% of the site is in favourable condition and 62% in unfavourable recovering. No problems with recreational damage are noted.

Deepdale Meadows (North Yorkshire)

100% of the site is in favourable condition. No problems with recreational damage are noted.

Durtrees Burn Grassland

51% of the site is in favourable condition and 49% in unfavourable recovering. No problems with recreational damage are noted.

Far High House Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Fothering Holme

100% of the site is in favourable condition. No problems with recreational damage are noted.

Gingerfields

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Gowk Bank

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Grains o'th' Beck Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Grassington Hospital Grounds

96% of the site is in favourable condition and 4% in unfavourable recovering. No problems with recreational damage are noted

Greenhaugh Meadow

100% of the site is in unfavourable declining condition. This is due to a combination of undergrazing and increased soil moisture. No problems with recreational damage are noted.

Hannah's Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Harker's House Meadows, Keld

47% of the site is in favourable condition and 53% in unfavourable recovering. No problems with recreational damage are noted

Heatheryburn Bank

100% of the site is in favourable condition. No problems with recreational damage are noted.

High Knock Shield Meadow

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Knarsdale Meadows

23% of the site is in favourable condition and 77% in unfavourable recovering. No problems with recreational damage are noted

Langcliff Cross Meadow

100% of the site is in favourable condition. No problems with recreational damage are noted.

Low Redford Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Mere Beck Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Middle Crossthwaite

100% of the site is in favourable condition. No problems with recreational damage are noted.

Middle Side and Stonygill Meadows

74% of the site is in favourable condition, 17% in unfavourable recovering and 9% in unfavourable no change. No problems with recreational damage are noted

Mill Holme Meadows, Thwaite

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Muker Meadows

91% of the site is in favourable condition and 9% in unfavourable recovering. No problems with recreational damage are noted

Myttons Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

New Close, Calvert Houses

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

New House Meadows, Malham

100% of the site is in favourable condition. No problems with recreational damage are noted.

Oughtershaw and Beckermonds

64% of the site is in favourable condition and 36% in unfavourable recovering. No problems with recreational damage are noted.

Peckriding Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Pry and Bottom Meadows, Mid-Mosssdale

100% of the site is in favourable condition. No problems with recreational damage are noted.

Raisbeck Meadows

91% of the site is in favourable condition and 9% is in unfavourable no change. No problems with recreational damage are noted.

Richmond Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Rigg Farm and Stake Hill Meadows

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Sandybeck Meadow

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Scar Closes, Kisdon Side

64% of the site is in favourable condition and 36% in unfavourable declining. No problems with recreational damage are noted.

Stephen Ings, Crackpot

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Swindale Meadows

100% of the site is in unfavourable no change condition. No problems with recreational damage are noted.

Thorneyburn Meadow

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Town End Meadows, Little Asby

59% of the site is in favourable condition and 41% in unfavourable recovering. No problems with recreational damage are noted.

Walden Meadows

95% of the site is in favourable condition and 5% in unfavourable recovering. No problems with recreational damage are noted.

West Newlandside Meadows

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

West Park Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

Wet Sleddale Meadows

100% of the site is in unfavourable declining condition. No problems with recreational damage are noted.

White Ridge Meadow

100% of the site is in unfavourable recovering condition. No problems with recreational damage are noted.

Wilson Place Meadows

91% of the site is in favourable condition and 9% in unfavourable declining. No problems with recreational damage are noted.

Yockenthwaite Meadows

100% of the site is in favourable condition. No problems with recreational damage are noted.

8.20 None of the meadow SSSIs that comprise this SAC has open access, although some have rights of way through them. Similar considerations apply as with the North Pennines Moors SAC and SPA regarding very low recreational pressure and this is unlikely to change as a result of Local Plan policies due to the very low housing numbers within the zone of influence of them and the low levels of tourism.

8.21 Consequently it is concluded that any increase in recreational disturbance arising from Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 will not have an adverse effect on the integrity of the North Pennines Dales Meadows SAC.

Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 - Increased trampling damage to sensitive vegetation in the Tyne and Allen River Gravels SAC

- 8.22 This SAC comprises a number of small, discrete SSSIs along the course of the Rivers South Tyne and Allen, all of which are in Northumberland. These mostly lack any statutory right of public access, although Williamston has permissive access as an NWT Nature Reserve and both that site and Burnfoot River Shingles and Wydon Nabb have caravan sites adjacent to them which may increase recreational access.
- 8.23 The current condition of underlying SSSIs is as follows:

Burnfoot River Shingle and Wydon Nabb

88% of the underlying SSSI is in unfavourable declining condition and 12% (comprising a geological exposure) is in favourable condition. The site is declining because of loss of open, calaminarian grassland to coarser vegetation, which is believed to be caused by declining loads of heavy metals in the river as spoil heaps resulting from former mine workings become depleted over time. No problems with recreational disturbance were noted.

Lambley River Shingles

100% of the underlying SSSI is in unfavourable declining condition. The site is declining because of loss of open, calaminarian grassland to coarser vegetation, which is believed to be caused by declining loads of heavy metals in the river as spoil heaps resulting from former mine workings become depleted over time. No problems with recreational disturbance were noted.

Ninebanks River Shingle

76% of the site is in unfavourable declining condition, and 24% in favourable condition. The reasons for unfavourable condition concern the impact of past gravel workings, and no problems with recreational disturbance were noted.

Williamston River Shingle

100% of the underlying SSSI is in unfavourable declining condition. The site is declining because of loss of open, calaminarian grassland to coarser vegetation, which is believed to be caused by declining loads of heavy metals in the river as spoil heaps resulting from former mine workings become depleted over time. No problems with recreational disturbance were noted.

Wharmley Riverside

100% of the underlying SSSI is in unfavourable declining condition. The site is declining because of loss of open, calaminarian grassland to coarser vegetation, which is believed to be caused by declining loads of heavy metals in the river as spoil heaps resulting from former mine workings become depleted over time. No problems with recreational disturbance were noted.

- 8.24 The circumstances of the Tyne and Allen River Gravels SAC are complex and unusual; the calaminarian grasslands that comprise its sole interest feature

have formed primarily as a result of the deposition of heavy metals leached from historic mining sites in the North Pennines. In all contexts other than the formation and sustenance of calaminarian grasslands, these heavy metals are regarded as pollutants, and indeed there is a direct conflict between the Habitats Directive which imposes a duty on Member States to maintain European sites in favourable condition and the Water Framework Directive, which imposes a duty on Member States to ensure that waterbodies achieve good ecological and chemical status, which cannot be achieved on the Rivers Tyne or Allen without dramatically reducing their levels of heavy metals. The Environment Agency has produced a Habitats Regulations Assessment for the minewater treatment programme that is designed to reduce heavy metal levels in the Tyne and Allen river systems to the point that would enable them to achieve compliance with the Water Framework Directive. In compensation for the impacts of this on the Tyne and Allen River Gravels SAC, some habitat management work is proposed within the SAC itself.

- 8.25 **Given current evidence that recreational disturbance is not adversely affecting the SAC, the low housing numbers proposed close to the SAC and the protection afforded to the natural environment in relevant tourism policies, it is concluded that any increase in recreational disturbance arising from Policies STP1, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 will not have an adverse effect on the integrity of the Tyne and Allen River Gravels SAC.**
- 8.26 However, additional individual sources of pressure such as these can be addressed through the development management process, should any applications come forward. The Local Plan includes suitable policies to ensure that European sites can be protected in this way.

Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU4, HOU 8 and HOU 9 - Increased disturbance affecting the Northumbria Coast SPA and Ramsar Site in respect of wintering purple sandpiper and turnstone and Lindisfarne SPA and Ramsar Site in respect of wintering and migratory waders and wildfowl

- 8.27 The Northumbria Coast SPA and Ramsar Site comprises areas of rocky shore scattered along the coast between the Tweed and Tees estuaries, and the relevant interest features are purple sandpiper and turnstone, present between September and March. Disturbance primarily arises from recreational activities such as walking and sea angling, with off-lead dogs being a particular concern because they range more widely than their owners and because the birds, as species that feed and roost on the ground, have to have a strong predator avoidance response to mammals such as fox and wolf, and therefore domestic dogs.
- 8.28 Purple sandpiper numbers are declining in the SPA, while turnstone numbers have been stable in recent years having previously been in decline; numbers of purple sandpiper have declined by 39% since the SPA was designated and numbers of turnstone have declined by 29% over the same time¹⁶. These patterns are consistent with trends across the North east region and across the UK as a whole. This appears to be related to birds not travelling so far south in winter as they used to, possibly due to climate change. Thus while the Wetland Bird Survey has issued an alert for the Northumbria Coast SPA, this states that *'Alerts have been triggered for both of the species assessed for this site. In both case, comparison of site trend with broadscale trends do not suggest that the declines underpinning Alerts status are being driven by site-specific pressures'*¹⁷.
- 8.29 The current condition of the component SSSI is as follows:
100% of the underlying SSSI units are assessed as being in favourable condition.
- 8.30 Lindisfarne SPA/Ramsar Site is designated for a wide range of migratory and wintering wading birds and wildfowl, and for a small population of breeding little tern. The site extends to over 3600ha, the great majority of which comprises extensive areas of intertidal mud and sandflats, with smaller areas of saltmarsh. There are a number of factors that ensure that disturbance remains low over much of the site; primarily that it is a National Nature Reserve (NNR) and has a full time wardening team employed by Natural England, that NE has byelaw-making powers in the NNR which it uses to manage issues such as bait-digging, and the fact that much of the intertidal zone comprises soft sediments which are inaccessible to people.

¹⁶ <http://app.bto.org/webs-reporting/?tab=alerts>

¹⁷ <http://app.bto.org/webs-reporting/?tab=alerts>

- 8.31 The current condition of the component SSSI is as follows:
Natural England's condition assessment for Lindisfarne SSSI places 100% of the site in favourable or unfavourable recovering condition.

Proposed housing numbers within 10km of the Northumbria Coast SPA and Ramsar Site and Lindisfarne SPA and Ramsar Sites¹⁸
South East Northumberland

- 8.32 The indicative housing requirement over the plan period for the South East area is 9,000 units. However, there are commitments totalling 11,033 units, and so site allocations are limited to the following:

Site allocation	Site area	Indicative no. of dwellings
Land at Crofton Mill, Plessey Road, Blyth	1.46ha	45-50
Land at Sandringham Drive/Windsor Drive, Blyth	1.13ha	30-35
Land at Lyndon Walk, Blyth	0.43ha	10
Former Moorside First School, Woodhorn Road, Newbiggin-by-the-Sea	2.40ha	66
Land north-west of Spital House Farm, North Seaton Road, Newbiggin-by-the-Sea	1.60ha	20-35
Site adjacent to Arts Centre, Woodhorn Road, Newbiggin-by-the-Sea	0.26ha	13
Former Whytrig Community Middle School, Western Avenue, Seaton Delaval	1.28ha	35-45
Former Brickworks, Pitt Lane, Seghill	0.87ha	20
Land north-east of Park Road (south-east Bridge Road), Lynemouth	4.48ha	70-100
Total		309-374

North Northumberland

- 8.33 The indicative housing requirement over the plan period for the North area is 3,390 units. However, there are deliverable commitments totalling 2,904 units, and so site allocations are limited to the following:

Site allocation	Site area	Indicative no. of dwellings
Land at Robert's Lodge, east of Etal Road, Eildon View and south of Cemetery Land, Tweedmouth	6.89ha	100-150
Former JT Dove and Coal Yard east of Northumberland Road and west of Billendean Road, Tweedmouth	3.00ha	60-80
Berwick Seaview Caravan and Motorhome Site, Billendean Road, Tweedmouth	2.65ha	30-40
Land adjacent to former Kwik Save, Walkergate, Berwick-upon-Tweed	0.11ha	10
The Glebe Field, north of West Street, Norham	1.60ha	15-25
Land east of Broad Road, North Sunderland / Seahouses	6.13ha	80-100
Total		295-405

¹⁸ The justification for using a 10km buffer zone is set out in paragraphs 8.63 -8.64 below.

Outside of Northumberland

- 8.34 The Northumbria Coast SPA includes areas of rocky shore southwards to just north of Hartlepool. For this reason and because there is a large population on Tyneside within 10km of sections of the SPA that lie within Northumberland, it is important to consider housing growth in North Tyneside, South Tyneside, Sunderland and Durham:

North Tyneside (Local Plan 2017)

Outstanding housing target to 2031-32 of 9771 units (698 units per annum).

South Tyneside (LDF 2007)

Housing allocation of 1650 units per annum, 2016-2021.

Sunderland (Draft Core Strategy and Development Plan 2017)

Housing allocation of 862 units per annum, 2017-2033.

Durham (County Durham Plan Preferred Options Habitat Regulations Assessment 2018)

Housing allocation within the coastal buffer zone of 212 units per annum, 2016-36.

Tourism policies

- 8.35 Policies ECN15-16 do have the potential to increase recreational disturbance from tourists within the Northumbria Coast SPA and Ramsar Site, and so need to be considering alongside impacts arising from housing policies.

Impact of Housing and Tourism Policies

- 8.36 The table on the following page sets out the distribution and abundance of purple sandpiper and turnstone, based on count sectors used in the long-running Wetland Bird Survey (WeBS). The table sets out numbers for:
- (i) WeBS sectors that are within the Northumbria Coast SPA/Ramsar Site and in Northumberland
 - (ii) WeBS sectors that are within the Northumbria Coast SPA/Ramsar Site but outside Northumberland
 - (iii) Other sites in Northumberland.
- 8.37 WeBS sectors that have over 10% of the SPA population recorded at the time that the SPA was designated are shaded in red. Those that have 5-10% of the SPA population at the time of designation are highlighted in orange, and those that have 1-5% are highlighted in yellow. Sites or sectors that have nationally important numbers of either species (defined as 1% or more of the estimated British population) are highlighted in purple.
- 8.38 All of the data in this table was accessed from the 'WeBS Report Online' section of the BTO website (<http://app.bto.org/webs-reporting/>) and was accessed on various dates during November and December 2018.

Table 2: Northumbria Coast SPA Wader Numbers in Northumberland by WeBS Sector 2012/13 - 2016/17

Key

	Nationally important population in this WeBS sector
	Over 10% of the SPA population occurs in this WeBS sector
	5-10% of the SPA population occurs in this WeBS sector
	1-5% of the SPA population occurs in this WeBS sector

Purple Sandpiper SPA population at designation = 763 birds Threshold for national importance = 130 birds		Turnstone SPA population at designation = 1456 birds Threshold for national importance = 480 birds	
WeBS Sector in Northumbria Coast SPA and in Northumberland	5yr av. (peak counts)	WeBS Sector in Northumbria Coast SPA and in Northumberland	5yr av. (peak counts)
Beadnell to Seahouses	165	Beadnell to Seahouses	184
Seahouses to Budle Point	98	Boulmer to Howick	174
Howick to Beadnell	63	Howick to Beadnell	124
Boulmer to Howick	28	Seahouses to Budle Point	110
Cresswell to Newbiggin	23	Alnmouth to Boulmer	105
Amble to Chevington Burn	22	Cresswell to Newbiggin	92
Spittal to Cocklaburn	15	Amble to Chevington Burn	75
Alnmouth	15	Seaton Sluice to Blyth Estuary	28
Seaton Sluice to Blyth Estuary	10	Spittal to Cocklawburn	26
Alnmouth to Boulmer	6	Hauxley	18
Cresswell to Chevington Burn	1	Cresswell to Chevington Burn	14
		Alnmouth	13
		Coquet Estuary	8
		Cambois to Newbiggin	1
WeBS Sector in Northumbria Coast SPA but outside of Northumberland		WeBS Sector in Northumbria Coast SPA but outside of Northumberland	
Durham Coast	40	Durham Coast	94
St Mary's Island	13	St Mary's Island	129
WeBS Sector in Northumberland but outside the Northumbria Coast SPA		WeBS Sector in Northumberland but outside the Northumbria Coast SPA	
Farne Islands	270	Farne Islands	652
Berwick North Shore	41	Berwick North Shore	118
Lindisfarne	7	Lindisfarne	110
		Tweed Estuary	36
		Blyth Estuary	22
		Coquet Estuary	10

- 8.39 It is evident that the North Northumberland Coast is by far the most important part of the SPA for both species, especially the section from Howick to Budle Point. While it is possible to hypothesise that this is because the North Northumberland coast is less populated and therefore less disturbed than the coast in the much more populated south east Northumberland, it is notable that the areas of rocky shore adjacent to the Tyneside conurbation maintain quite significant populations of both species. In particular, St Mary's Island WeBS sector supports 1-5% of the SPA's purple sandpiper population and 5-10% of the SPA's turnstone population.
- 8.40 Accordingly, it is evident that there isn't a simple relationship between the size of the human population close to the coast and its capacity to support populations of these species, and that a range of factors such as the particular physical and biological characteristics of particular sections of rocky shore are likely to affect the bird population's likelihood of being disturbed by visitors and their dogs, and their ability to cope with increased levels of disturbance should they occur. One particular factor that appears to be especially important is access to offshore islands, as analysis of WeBS data has shown a statistically significant inverse relationship between turnstone density and distance to offshore islands (the Farne Islands, Coquet Island and St Mary's Island) (Whittingham, 2018). This may suggest that offshore islands are important refuges from disturbance, but further work is required to investigate this.
- 8.41 However, simple observations confirm that recreational disturbance to these species does occur, and this will inevitably increase as the human population increases. Therefore a choice has to be made between implementing mitigation now because disturbance does occur and the populations are declining; or waiting until there is unambiguous evidence of a link between these. Given the complex range of factors that are likely to be driving the current declines in purple sandpiper and turnstone populations and the difficulties inherent in proving that disturbance to individual birds is causing population-level adverse effects, it would be impossible to prove that recreational disturbance was a significant factor in declines in these species until it was already having an adverse effect on the integrity of the populations concerned.
- 8.42 Such an approach would be inconsistent with the requirements of the Birds and Habitats Directives because it would then be likely to be impossible to maintain the capacity of the Northumbria Coast SPA to support the populations of turnstone and purple sandpiper at the size that existed when the site was designated.
- 8.43 **Accordingly it must be concluded that in the absence of mitigation any increasing housing close to the coast arising from Policies STP1, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 will cause an adverse effect on the integrity of the Northumbria Coast SPA alone or in-combination with other plans and projects.**

PROPOSED MITIGATION OF ADVERSE EFFECTS

- 8.44 Therefore it is necessary to consider whether mitigation can be implemented that will address these impacts to the extent that an adverse effect can be avoided. It is recognised that it is very difficult for developers to provide effective mitigation for recreational disturbance at the coast. The provision of high quality greenspaces within and adjacent to new developments can have some benefit in terms of diverting some activities such as dog-walking away from the coast; however this is very demanding in terms of the extent of land required and even then is of limited effectiveness. To provide an attractive experience for dog-walkers, research has shown that such green spaces should provide a choice of circular walks of around 2.7km with paths that are suitable for use all year and in all weathers; be attractively landscaped but perceptually safe with clear open sight lines along pathways; be safe for off-lead dogs; and be within 500m of the development or provide adequate car-parking (Hampshire County Council, 2013). Other features such as fenced in training areas, access to clean water for drinking and swimming and activity trails increase the attractiveness of such areas.
- 8.45 Even if such high quality green spaces can be provided, the coast has an inherent attractiveness to dog-walkers. Questionnaire surveys of dog-walkers undertaken on the Northumberland coast (Appendix 2) and elsewhere suggest that only about a third of dog-walkers would sometimes consider using such provision instead of the coast (eg Liley and Underhill-Day, 2013 p.55). Such green spaces will not have any effect in reducing disturbance from other recreational activities such as sea-angling or coastal walks.
- 8.46 Consequently it is clear that management measures within the protected sites themselves are required to ensure that recreational disturbance will not cause an adverse effect on site integrity. There are a wide range of measures that may be appropriate, from softer educational and advisory activities to more regulatory approaches such as dog restrictions; however these are not measures that developers would realistically be able to implement. To address this problem, the Council has developed a strategic mitigation project, the Northumberland Coastal Mitigation Service that developers can provide a financial contribution to in order to ensure that their developments do not have an adverse effect on the integrity of this SPA/Ramsar site together with other relevant designated sites. This is described in further detail at paragraphs 8.63 – 8.66.
- 8.47 **Accordingly, the development of the Coastal Mitigation Service will ensure that any increase in recreational disturbance arising from Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 of the Local Plan will not have an adverse effect on the integrity of the Northumbria Coast SPA and Ramsar Site in respect of wintering purple sandpiper and turnstone and Lindisfarne SPA and Ramsar Site in respect of wintering and migratory waders and wildfowl.**

Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 - Increased disturbance to little tern breeding colonies (Northumbria Coast SPA and Ramsar Site and Lindisfarne SPA) and arctic tern breeding colony (Northumbria Coast SPA)

- 8.48 These colonies are located at the mouth of the Long Nanny Burn in Beadnell Bay and within Lindisfarne National Nature Reserve. As they nest on the beach they are highly vulnerable to disturbance. The Long Nanny colony is protected by temporary fencing and 24 hour wardening by the National Trust, and the Lindisfarne colony is protected by fencing and wardening by Natural England.
- 8.49 There are concerns about the sustainability of these colonies, especially the Beadnell Bay site where changes in beach profiles and the growth of the arctic tern colony are making the little tern colony increasingly vulnerable to being washed out in high tides. Furthermore, the provision of such intensive wardening is expensive.
- 8.50 Little terns are known to prospect for nest sites at other locations on the coast but are unable to settle due to the levels of human disturbance. However, the future of the little tern in Northumberland would be far more secure if new colonies could be established in more sustainable locations and, in addition to continuing the wardening of the existing colonies, actions to enable these to become established are likely to be vital to the continuing survival of the SPA population as set out in the *Little Tern Species Recovery Plan 2019-2030* (Little Tern Recovery Project, 2018).
- 8.51 **Accordingly it is concluded that in the absence of mitigation any increase in recreational disturbance arising from Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 will have an adverse effect on the integrity of the Northumbria Coast SPA and Ramsar Site and Lindisfarne SPA and the Northumbria Coast SPA.**

PROPOSED MITIGATION OF ADVERSE EFFECTS

- 8.52 To address these issues the Council has developed a strategic mitigation project, the Northumberland Coastal Mitigation Service that developers can provide a financial contribution to in order to ensure that their developments do not have an adverse effect on the integrity of this SPA/Ramsar site together with other relevant designated sites. This is described in further detail at paragraphs 8.63 – 8.66
- 8.53 **Accordingly, the development of the Coastal Mitigation Service will ensure that any increase in recreational disturbance arising from Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 of the Local Plan will not have an adverse effect on the integrity of the Northumbria Coast SPA and Ramsar Site in respect of wintering purple sandpiper and turnstone and Lindisfarne SPA and Ramsar Site in respect of wintering and migratory waders and wildfowl**

Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 - Increased trampling damage to sensitive vegetation and spread of pirri-pirri bur in the North Northumberland Dunes SAC

8.54 The North Northumberland Dunes SAC comprises part or all of 6 SSSIs. The interest features of the SAC comprise embryonic shifting dunes; shifting dunes with marram grass; fixed dunes with herbaceous vegetation (a priority feature); dunes with creeping willow; humid dunes slacks; and a rare liverwort called Petalwort.

8.55 The current condition of the component SSSIs is as follows:

Warkworth Dunes and Saltmarsh

100% favourable condition; no mention of any access-related problems in the 'Condition of SSSI Units' report.

Bamburgh Coast and Hills

Sand dune units of this site are all in favourable condition; no mention of any access-related problems in the 'Condition of SSSI Units' report.

Newton Links

100% favourable or unfavourable recovering; no mention of any access-related problems in the 'Condition of SSSI Units' report.

Bamburgh Dunes

100% unfavourable recovering; no mention of any access-related problems in the 'Condition of SSSI Units' report.

Alnmouth Saltmarsh and Dunes

100% favourable condition; no mention of any access-related problems in the 'Condition of SSSI Units' report.

Lindisfarne

100% unfavourable recovering; no mention of any access-related problems in the 'Condition of SSSI Units' report.

8.56 The effects of trampling on dune grassland can be positive as well as negative; the short vegetation and patches of bare sand provide valuable habitat for invertebrates. Petalwort, a rare liverwort that is one of the interest features of the SAC needs areas of low vegetation with limited completion from other plants, and so the edges of pathways provide one of the habitats in which it will grow. The extent to which mobilization of sand by trampling is a problem has been reviewed in recent years, as the importance of mobile sand to dune ecology has been better understood.

8.57 However, human access also provides the main vector for the spread of pirri-pirri bur (*Acaena novae-zealandiae*), a non-native invasive species that is causing increasing problems within the dunes and consequently is identified as a concern in the Site Improvement Plan for the Northumberland Coastal

European Sites (Natural England 2015). This is a perennial woody herb that spreads by way of runners that root at intervals, and also through the production of seeds within sticky burs, which are transported on clothing, shoe laces, dog's fur etc.

- 8.58 Pirri-pirri bur causes ecological harm to dune grasslands by displacing native species and by colonizing bare sand, reducing the extent of this important element of the dune grassland environment.
- 8.59 Because its seeds are spread via its sticky burs, people and their dogs are the main vectors for spreading this plant between sites.
- 8.60 **Accordingly, it is concluded that in the absence of mitigation any increase in the number of visitors arising from Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 will have an adverse effect on the integrity of the North Northumberland Dunes SAC as this is likely to increase the rate of spread of pirri-pirri bur.**

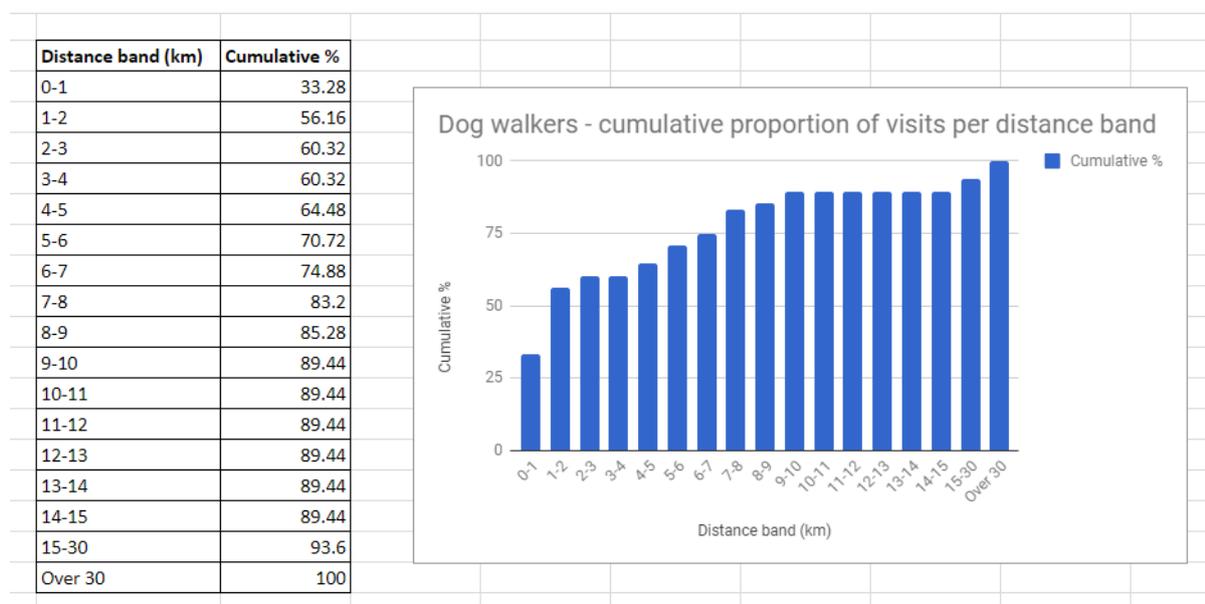
PROPOSED MITIGATION OF ADVERSE EFFECTS

- 8.61 To address these issues the Council has developed a strategic mitigation project, the Northumberland Coastal Mitigation Service that developers can provide a financial contribution to in order to ensure that their developments do not have an adverse effect on the integrity of this SAC together with other relevant designated sites. This is described in further detail at paragraphs 8.63-8.66 below.
- 8.62 **Accordingly, the implementation of the Coastal Mitigation Service will ensure that any increase in recreational activity arising from Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 of the Local Plan will not have an adverse effect on the integrity of the North Northumberland Dunes SAC.**

The Northumberland Coastal Mitigation Service

8.63 The zone of influence for recreational disturbance at the coast has been agreed with Natural England and is set at 10km from the coast by direct measurement. To establish this, a series of interviews were undertaken with dog-walkers at the coast during winter 2015-16 and those who were willing provided their postcodes. From these it was possible to establish the locations from which they had originated and therefore establish a zone of influence for coastal recreation. A distance of 10km from the coast includes the points of origin of as many of the dog walkers interviewed as is reasonably possible, a figure of 89%. This is shown in figure 1. These results are remarkably consistent with the results of similar surveys elsewhere in the country; for example Durham (Durham County Council 2017 Appendix E, pp. lix - lxi) and SE Devon (Liley et al 2013, pp. 203-209).

Figure 1: Defining the coastal zone of influence – the distance from the coast of the point of origin of dog-walkers



8.64 Natural England’s advice to Northumberland County Council is that development that causes a net increase in the number of dwellings (included tourist units) within the zone of influence will require mitigation to address recreational disturbance to coastal protected areas¹⁹. In order to ensure that a proportionate approach is taken, it is important to recognise that people living towards the inland edge of the 10km zone visit the coast less frequently than those living closer to the coast. Therefore the 10km zone of influence is divided into two zones as follows:

- 0-7km: Mitigation is required for all developments resulting in a net increase in dwellings (including holiday units).

¹⁹ This advice and the Coastal Mitigation Service itself address impacts on both European sites and SSSIs. However, as this is a Habitats Regulations Assessment, only the European sites are considered in this report.

- 7-10km: Mitigation is required for all developments resulting in a net increase of 10 or more dwellings (including holiday units).

These zones are shown on Figures 2 and 3 on pages 112 and 113.

- 8.65 The level of payment into the Coastal Mitigation Service is derived from two figures; the minimum cost of providing a viable and effective service, divided by the anticipated annual delivery of new houses within the coastal zone.
- 8.66 The Coastal Mitigation Service will comprise a minimum of two full time wardens and will undertake the following range of activities within the following European sites:

Awareness-raising

Developing and sustaining a presence on social media and in conventional media, at relevant events and through direct contact with recreational users to highlight the importance and vulnerability of coastal wildlife and encourage people to avoid disturbance hotspots or modify their activities (eg keeping dogs on lead in those areas)

Monitoring – birds

Implementing an ongoing programme of bird monitoring in the Northumbria Coast SPA and Ramsar Site, and collating results from relevant other surveys such as WeBS counts, to ensure that adequate data is available concerning population trends.

Monitoring – recreational activities

Implementing an ongoing programme of monitoring of recreational activities in the Northumbria Coast SPA and Ramsar Site to identify disturbance hotspots and potential hotspots, and to inform the development of plans to address and avoid disturbance.

Management measures – birds

Identifying sites visited by prospecting little tern and arctic tern and to establish and maintain temporary enclosures during the breeding season in suitable locations, to facilitate the founding of new colonies.

Management measures – recreation

- Identifying sites where particular congregations of migratory and wintering purple sandpiper and turnstone such as high tide roosts are at risk of disturbance and would benefit from access modifications
- Modifying access arrangements such as access points and car parks to lead people away from disturbance hotspots
- Enforcing the existing Public Space Protection Order (PSPO) that requires dogs to be kept on lead by direction if they are disturbing wildlife.
- Gathering evidence for further PSPOs such as dog bans in specific areas if the above measures prove ineffective

Management measures – non-native invasive species

Monitoring dune grasslands within the North Northumberland Dunes SAC to identify areas of pirri-pirri bur and implementing control programmes to eliminate these.

Figure 2: Coastal Zone of Influence (North)

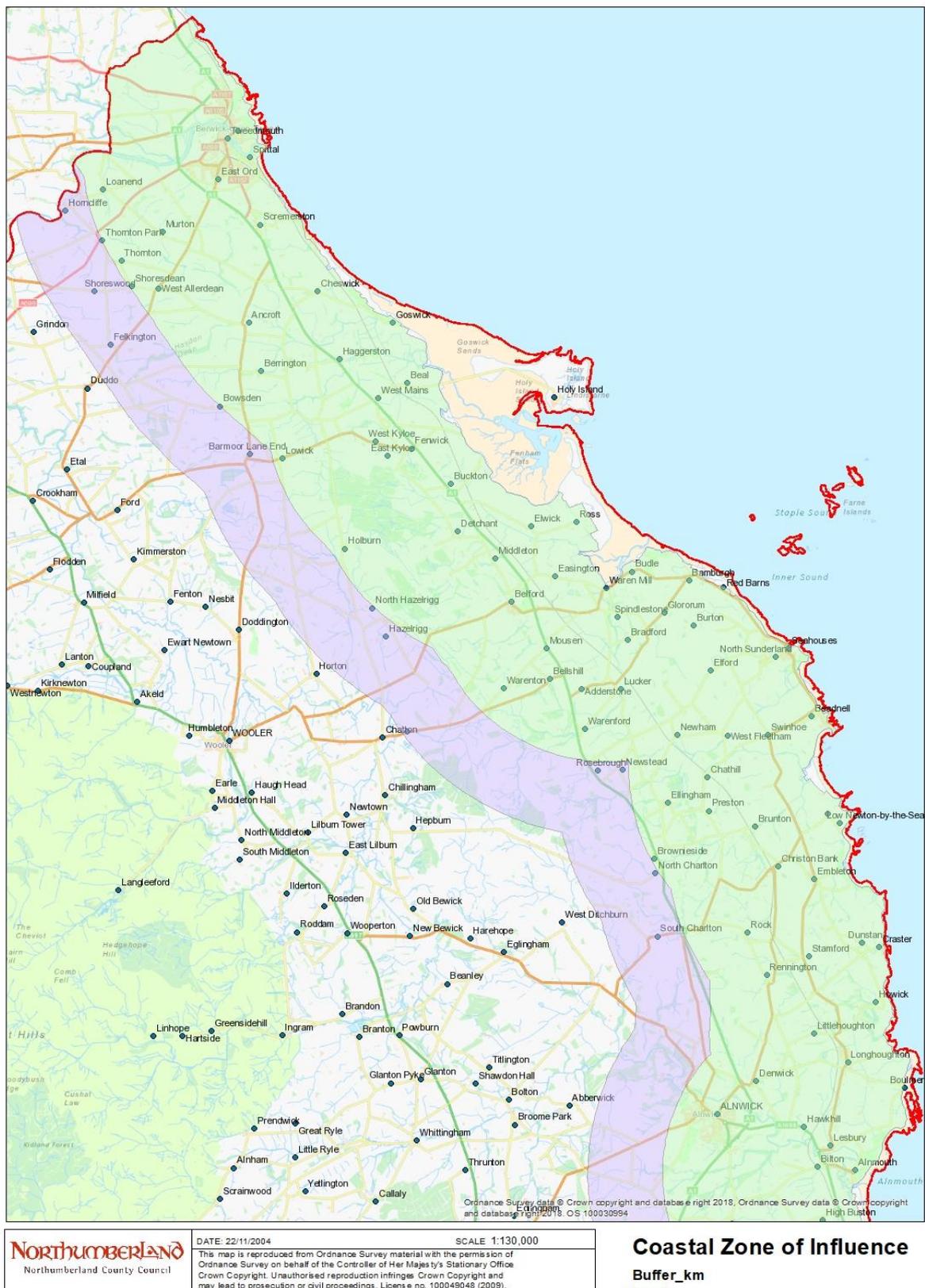
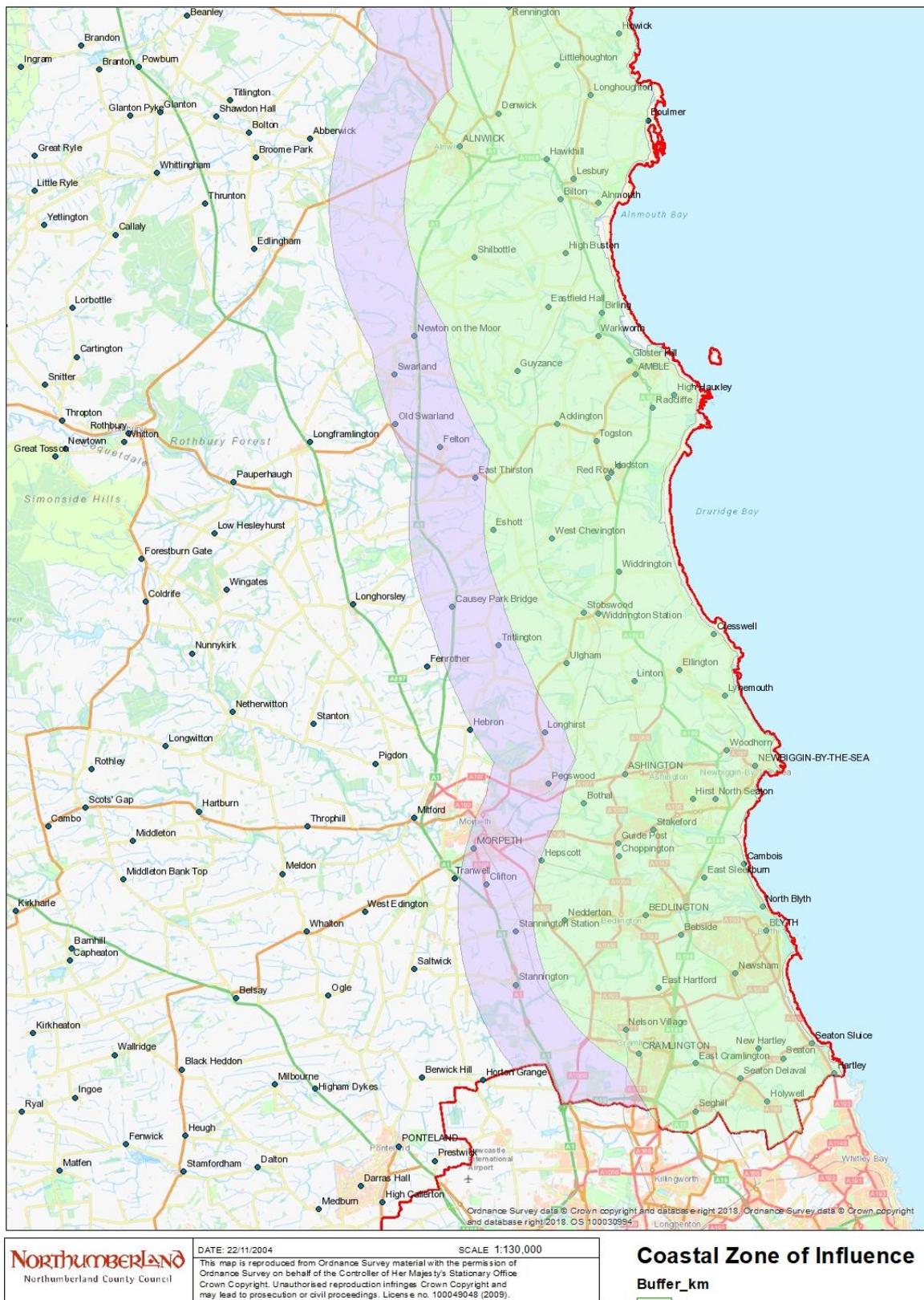


Figure 3: Coastal Zone of Influence (South)



Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 - Increased disturbance affecting Northumberland Marine SPA

- 8.67 The Northumberland Marine SPA is an extensive site, stretching from Spittal to Blyth bay. It runs up to mean high water, and includes estuaries up to the tidal limit. The seaward site boundaries are defined by the foraging ranges of the breeding arctic terns at Long Nanny, the Farne Islands and Coquet Island, because these are the most wide-ranging of the tern species when foraging. The site includes the whole of the estuaries within the foraging area up to the tidal limit, because surveys have identified the use of estuaries by tern species.
- 8.68 Although the SPA includes the intertidal zone, the implications of this are significantly different to those for migratory and wintering waders in the Northumbria Coast SPA. For purple sandpiper and turnstone, the intertidal zone provides the vast majority of the foraging and roosting habitat available to them, and it is used concurrently by birds and people and their dogs (i.e. when it is not covered by water). For foraging terns, the opposite is true; the intertidal zone represents a tiny proportion of their foraging habitat and is only used when it is covered by water. Accordingly, terrestrially-based recreational use of the intertidal zone will not have any implications for the SPA. Disturbance from terrestrial activities adjacent to the intertidal zone such as construction could cause temporary displacement from adjacent foraging areas where noise levels were high enough to cause disturbance. However, because of the noise level limits imposed through environmental health regulations, this could only affect a miniscule proportion of the foraging areas for any of the species concerned, to the extent that such an effect would be *de minimus*, as has been confirmed by Natural England²⁰.
- 8.69 Water-borne recreation, especially powered craft such as jet skis that operate in the shallow bays favoured by tern species could have a significant effect by temporarily excluding birds from favoured foraging areas. However, this is not an issue that can be addressed through a high level spatial plan, but the protective policies in this plan will enable it to be addressed effectively through the development management process where recreational facilities are subject to planning control.
- 8.70 **Accordingly, any increase in recreational disturbance arising from Policies STP1, ECN 10, ECN 15, ECN 16, HOU 1, HOU 2, HOU 3, HOU 4, HOU 8 and HOU 9 of the Local Plan will not have an adverse effect on the integrity of the Northumberland Marine SPA.**

²⁰ Meeting with Katie Finkill-Coombs, Lead Advisor, Natural England, 16/02/16

Policies STP 1, HOU 1, HOU 2, HOU 8 and HOU 9 - Eutrophication from increased sewage discharge affecting the River Tweed SAC

River Tweed SAC

- 8.71 The component SSSIs of the SAC comprise the Till Catchment SSSI and the Lower Tweed and Whiteadder SSSI. The interest features of the SAC comprise watercourses with water-crowfoot communities; Atlantic salmon; otter; sea lamprey; brook lamprey; and river lamprey.
- 8.72 The current condition of component SSSIs is as follows:

Till Catchment

18% of the SSSI is in unfavourable recovering condition, 75% in unfavourable no change and 7% in unfavourable declining. The main reasons for units being in unfavourable – no change condition are agricultural diffuse pollution and morphological changes. The unit that is in unfavourable – declining is the unit at Wooler, where phosphate inputs from the sewage treatment works raise P levels in the river from very low to above those set in the favourable condition table. Furthermore, the Haugh Head ford and associated check weirs are compromising the morphology of this section of river.

Lower Tweed and Whiteadder

25% of the site is in favourable condition, 19% is in unfavourable recovering condition and 56% in unfavourable no change. The main causes of units being in unfavourable condition are agricultural diffuse pollution and non-native invasive species.

- 8.73 **As the discharge from the Sewage Treatment Works at Wooler causes phosphorus levels in the river to exceed the levels set out in the SSSI condition table, any further increase in housing would worsen this and therefore cause an adverse effect on the integrity of the River Tweed SAC. The installation of equipment to remove phosphorus from the STW discharge is scheduled to commence in spring 2019 in order to achieve compliance with a revised discharge consent level of 2mg phosphorus per litre by 31 March 2020. This will enable further connections to the STW to be made without an adverse effect on the integrity of the SAC.²¹ No housing allocations are proposed within the catchment of this STW, and should planning applications come forward that are consistent with the Local Plan prior to phosphorus-stripping equipment being installed, planning conditions can be imposed to ensure that the development does not come into use until the equipment is installed. Accordingly, policies STP 1, HOU 1, HOU 2, HOU 8 and HOU 9 of the Local Plan are unlikely to have an adverse effect on the River Tweed SAC.**

²¹ Email from Roger Smith, Northumbrian Water Ltd to David Feige, Northumberland County Council, 01/10/18

Policies STP 1, HOU 1, HOU 2, HOU 8 and HOU 9 - Eutrophication from increased sewage discharge affecting the Tweed Estuary SAC

Tweed Estuary SAC

- 8.74 The component SSSI of the SAC comprises the Lower Tweed and Whiteadder SSSI. The interest features of the SAC comprise estuaries, mudflats and sandflats not covered by seawater at low tide, sea lamprey and river lamprey. This section of the Lower Tweed and Whiteadder comprises two units, one of which is in unfavourable recovering condition and one of which is in favourable condition. Natural England has advised that phosphorous levels are less of a concern for estuaries but that the potential impact of increased nitrogen levels should be considered, because nitrogen is usually the limiting factor for algal growth in the marine environment. However, it is difficult to determine an appropriate target for dissolved organic nitrogen (DIN) for any particular estuary as complex issues such as the flushing time and scour rate influence this. Furthermore, agriculture is likely to account for the majority of DIN in the estuary.
- 8.75 **Overall, given the lack of evidence of eutrophication in the estuary at present and the low housing numbers for the catchment in the withdrawn Core Strategy, Natural England had advised that any increases in sewage discharge arising from Policies 3, 9 and 15 of the Core Strategy were unlikely to have an adverse effect on the Tweed Estuary SAC²². Given that housing numbers for the Local Plan are significantly lower than this, it can be concluded that policies STP 1, HOU 1, HOU 2, HOU 8 and HOU 9 of the Local Plan are unlikely to have an adverse effect on the Tweed Estuary SAC.**

²² Email from Bob Cussen, Natural England, to David Feige, Northumberland County Council, 16/09/15

9. Overall Conclusion of the Assessment and Mitigation Measures

9.1 Having undertaken a screening assessment of the Northumberland Local Plan – Publication Draft Plan (Regulation 19), Northumberland County Council concluded that the following policies were likely to have a significant effect on the European sites listed as follows:

- Policy STP 1 Spatial Strategy
- Policy ECN 2 Blyth Estuary Strategic Employment Area
- Policy ECN 10 Loss or Depletion of Employment Land
- Policy ECN 15 Tourism and Visitor Development
- Policy ECN 16 Green Belt and Tourism and Visitor Economy
- Policy HOU 1 Making the Best Use of Existing Buildings
- Policy HOU 2 Provision of New Residential Development
- Policy HOU 3 Housing Requirements for Neighbourhood Plan Areas
- Policy HOU 4 Housing Development Site Allocations
- Policy HOU 8 Residential Development in the Open Countryside
- Policy HOU 9 Residential Development Management

9.2 The potential effects of these policies are as follows:

Increased disturbance to breeding upland waders and raptors
North Pennine Moors SPA

Increased disturbance to breeding seabirds
Northumbria Coast SPA and Ramsar Site
Lindisfarne SPA and Ramsar Site
Northumberland Marine SPA

Increased disturbance to migratory and wintering waders and wildfowl
Northumbria Coast SPA and Ramsar Site
Lindisfarne SPA and Ramsar Site

Increased trampling damage to sensitive vegetation
North Pennine Moors SAC
Tyne and Allen River Gravels SAC
North Pennines Dales Meadows SAC
North Northumberland Dunes SAC
Berwickshire and North Northumberland Coast SAC

Eutrophication from increased sewage discharge
Tweed Estuary SAC
River Tweed SAC

- 9.3 Accordingly, Northumberland County Council has undertaken an appropriate assessment of these aspects of the Plan on the interest features of the European sites features listed above.
- 9.4 **In the absence of mitigation, it is concluded that the Local Plan, in combination with other plans and projects, would have an adverse effect on the Northumbria Coast SPA and Ramsar Site and Lindisfarne SPA and Ramsar Site due to increased recreational disturbance, and the North Northumberland Dunes SAC due to increased spread of pirri-pirri bur.**

PROPOSED MITIGATION OF ADVERSE EFFECTS

- 9.5 In order to ensure that developers working within the framework created by this Plan can provide effective mitigation to address these issues, Northumberland County Council is establishing a Coastal Mitigation Service which will be funded by developer contributions. The Service will comprise a wardening service that will work within the coastal European sites to manage recreational disturbance and to control pirri-pirri bur, as set out in paragraphs 8.63 – 8.66 above. This service has been developed in close consultation with Natural England.
- 9.6 **Northumberland County Council concludes that the Northumberland Local Plan – Publication Draft for Regulation 19 Consultation (January 2019) together with the mitigation measures being put in place through the Coastal Mitigation Service, will not have an adverse effect on the integrity of any European site. In making that assessment, the Council has taken account of the potential for the Plan to contribute to cumulative effects with other plans or projects.**

10. Bibliography

Allendale Parish Council (2015) *Allendale Neighbourhood Development Plan 2015-2031*

Alnwick Town Council (2017) *Alnwick and Denwick Neighbourhood Plan 2014-2031*.

Borough of Poole, Bournemouth Borough Council, Christchurch Borough Council, Dorset County Council, East Dorset District Council and Purbeck District Council (2012) *The Dorset Heathlands Planning Framework 2012-2014 Supplementary Planning Document*.

Cadwallender, T. and Cadwallender, M. (2013) *A Study of Specified Migrating and Over-wintering Wading Birds of the Northumberland Coast*. Report for Northumberland County Council.

Capita (2017) *North Tyneside Council Local Plan Habitat Regulations Assessment – Appropriate Assessment*

Carlisle City Council (2016) *Carlisle District Local Plan 2015-2030*

Cruickshanks, K., Liley, D., Fearnley, H., Stillman, R., Harvell, P., Hoskin, R. & Underhill –Day, J (2010) *Desk-based Study on Recreational Disturbance to Birds on the Humber Estuary*. Footprint Ecology / Humber Management Scheme

Court of Justice of the European Union (2018) *Case C 323/17 Request for a Preliminary Ruling the in case of People over Wind and Peter Sweetman v Coillte Teoranta – Judgment of the Court*.

David Tyldesley and Associates (2013) *Habitats Regulations Assessment of Preferred Strategy to Inform the Swansea Local Development Plan*.

DCLG (2012) *National Planning Policy Framework*

DTA Publications Limited (2018a) Case C 323/17 Court of Justice of the European Union *People over Wind: A Ruling about Mitigation Measures*. A Summary Statement by DTA Publications Ltd

DTA Publications Limited (2018b) Case C 323/17 Court of Justice of the European Union *People over Wind: A Ruling about Mitigation Measures*. An Analysis Supporting the Summary Statement by DTA Publications Ltd

Durham County Council (2017) *Habitat Regulations Assessment: Developer Guidance and Requirements in County Durham*

Eden District Council (2015) *Eden Local Plan 2014-2032 Submission Draft*

English Nature and Scottish Natural Heritage (2000) *Berwickshire and North Northumberland Coast European Marine Site; English Nature's and Scottish Natural Heritage's advice given in compliance with Regulation 33(2) and in support of the implementation of the Conservation (Natural Habitats &c.) Regulations 1994.*

English Nature (2005) *Dogs, Access and Nature Conservation*. Research Report no. 649

Environment Agency (2009) *River Basin Management Plan – Northumbria River Basin District. Annex A: Current State of Waters*

Environment Agency (2014) *A Summary of Information about the Water Environment in the Northumberland Rivers Management Catchment*

Environment Agency (2014) *A Summary of Information about the Water Environment in the Tyne Management Catchment*

Environment Agency (2014) *Water for Life and Livelihoods: A Consultation on the Draft Update to the River Basin Management Plan for the Northumbria River Basin District*

European Communities (1992) *Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.*

European Commission (2018) *Managing Natura 2000 Sites; the Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.*

European Commission (2001) *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites.*

Feeney v Oxford City Council and the Secretary of State CLG 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>

Gateshead Council and Newcastle upon Tyne City Council (2017) *Planning for the Future: Local Plan and Urban Core Plan for Gateshead and Newcastle upon Tyne*

Hampshire County Council (2013) *Planning for Dog Ownership in New Developments: Reducing Conflict – Adding Value*

HM Government, North East Local Enterprise Partnership, Newcastle City Council, Northumberland County Council and North Tyneside Council (2017) *North of Tyne 'minded-to' Devolution Deal*

HMSO (2017) *The Conservation of Habitats and Species Regulations 2017, SI 2017 No. 1012.*

Holt, C.A., Austin, G.E., Calbrade, N.A., Mellan, H.J., Hearn, R.D., Stroud, D.A., Wotton, S.R. and Musgrove, A.J. 2015. Waterbirds in the UK 2013/14: The Wetland Bird Survey. BTO/RSPB/JNCC. Thetford. <http://www.bto.org/volunteer-surveys/webs/publications/webs-annual-report>

Johnson, C., Taylor, K., Houldin, C., Race, H. & Birtles, J. 2009. *Countryside and Rights of Way (CROW) Act 2000 (Part 1): National Open Access Visitor Survey (2006-2008) - Access Management Report*. Natural England Commissioned Report, Number NECR036c.

Liley, D., Hoskin, R., Lake, S., Underhill-Day, J. and Cruickshanks, K. (2013) *South-east Devon European Sites Mitigation Strategy*. Unpublished report for East Devon District Council, Exeter City Council and Teignbridge District Council

Liley, D. & Tyldesley, D. (2013) *Solent Disturbance and Mitigation Project: Phase III, Towards an Avoidance and Mitigation Strategy*. Footprint Ecology / David Tyldesley & Associates.

Liley, D. and Underhill-Day, J. (2013) *Thames, Medway and Swale Estuaries – Strategic Access Management and Monitoring Strategy*. Unpublished report by Footprint Ecology.

Little Tern Recovery Project (2018) *Surviving on the Coastal Fringe: The Little Tern (Sternula albifrons) Species Recovery Plan 2019-2030*

Morpeth Town Council (2016) *The Morpeth Neighbourhood Plan 2011-2031*

Natural England (2015a) *Atmospheric Nitrogen Theme Plan: Developing a Strategic Approach for England's Natura 2000 Sites*. IPENS TP013

Natural England (2015b) *Climate Change Theme Plan: Developing a Strategic Approach to Climate Change Adaptation*. IPENS TP014

Natural England (2015c) *Diffuse Water Pollution Theme Plan: Developing a Strategic Approach to Diffuse Water Pollution for England's Natura 2000 Sites*. IPENS TP015

Natural England (2015d) *Public Access and Disturbance Theme Plan: a Strategic Approach to Identifying and Addressing Significant Effects on the Features of Natura 2000 Sites*. IPENS TP022

Natural England (2015e) *Coastal Management Theme Plan: Developing a Strategic and Adaptive Approach for Flood and Coastal Erosion Risk Management for England's Natura 2000 Sites*. IPENS TP019

Natural England (2015f) *Improvement Programme for England's Natura 2000 Sites (IPENS) Site Improvement Plan: Northumberland Coastal*.

Natural England (2018a) *Conservation Advice for Marine Protected Areas – Northumbria Coast Special Protection Area*

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9006131&SiteName=northumbria&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=> (accessed on various dates during October – November 2018)

Natural England (2018b) *Draft Conservation Advice for Marine Protected Areas – Lindisfarne Special Protection Area*

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9006011&SiteName=lindisfarne&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=> (accessed on various dates during October – November 2018)

Natural England (2018c) *Conservation Advice for Marine Protected Areas – Northumberland Marine Special Protection Area*

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9020325&SiteName=northumberland&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=> (accessed on various dates during October – November 2018)

Natural England (2018d) *Conservation Advice for Marine Protected Areas – Tweed Estuary Special Area of Conservation*

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0030292&SiteName=tweed&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=> (accessed on various dates during October – November 2018)

North East Local Enterprise Partnership (2017) *More and Better Jobs: The North East Strategic Economic Plan*

North Northumberland Coast Neighbourhood Plan Steering Group (2018) *North Northumberland Coast Neighbourhood Plan 2017-2032 (Referendum Version)*

North Tyneside Council (2017) *North Tyneside Local Plan*

Northumberland County Council (2011) *Northumberland Local Transport Plan 2011-2026*.

Northumberland County Council (2011) *Local Transport Plan 2011-2026 Strategy Document*

Northumberland County Council (2015) *Northumberland Economic Strategy 2015-2020*

Northumberland National Park Authority (2009) *Local Development Framework*

ODPM (2006) *The Application of Appropriate Assessment under Article 6(3) and (4) of the Habitats Directive 92/43/EEC to Development Plans in the transitional period between now and when the Amending Regulations come into force*. Letter to Chief Planning Officers of 28/2/06.

ODPM (2005) *Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*.

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 <http://curia.europa.eu/juris/document/document.jsf?docid=58359&doclang=EN>

Planning Inspectorate (2018) PINS Note 05/2018 *Consideration of avoidance and reduction measures in Habitats Regulations Assessment: People over Wind, Peter Sweetman v Coillte Teoranta.*

Scott Wilson, Levett-Therivel Sustainability Consultants, Treweek Environmental Consultants and Land Use Consultants (2006) *Appropriate Assessment of Plans.*

Scottish Borders Council (2016) *Local Development Plan*

SKM Enviros (2011) *Blyth – Cambois Wader Study. Report to Northumberland County Council*

South Tyneside Council (2007) *Local Plan*

Stillman, R.A., Cox, J., Liley, D., Ravenscroft, N., Sharp, J. and Wells, M. (2009) *Solent Disturbance and Mitigation Project: Phase I Report.* Report to the Solent Forum

Surrey Heath Borough Council (2012) *Local Development Framework 2011-2028: Thames Basin Heaths Special Protection Area Avoidance Strategy Supplementary Planning Document*

Tyldesley, D. and Chapman, C. (2013) *The Habitats Regulations Assessment Handbook* (November 2018 update) DTA Publications Ltd

WeBS Report Online (<http://app.bto.org/webs-reporting/>) accessed on various dates during August-September 2015 and November 2018.

Whittingham, M. (2018) *Briefing Note for Impacts of Disturbance on the North-East Coast of England (North of the Tyne)* University of Newcastle upon Tyne.

Appendix 1: Extracts from Natural England Conservation Advice for European Sites included in the Appropriate Assessment (where available)

Extracts from Natural England's Conservation Advice for the Northumbria Coast SPA

Supplementary advice concerning human disturbance

Feature/Subfeature name	Attribute	Target	Season	Supporting notes
Turnstone and purple sandpiper	Disturbance caused by human activity	Restrict the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed	Non-breeding (winter and/or passage) season	<p>The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p> <p>'Significant' disturbance is defined by AEWA</p>

				<p>(The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), 2016)):</p> <p>“Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either changed local distribution on a continuing basis; and/or changed local abundance on a sustained basis; and/or the reduction of ability of any significant group of birds to survive, breed, or rear their young.” (Fox and Madsen, 1997)</p> <p>Site-specifics:</p> <p>Further investigation is required to determine whether disturbance from human activity has an impact on this species.</p> <p>Human disturbance may be impacting this feature.</p>
Little tern and arctic tern	Disturbance caused by human activity	Reduce the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed	Breeding (summer) season	The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in

				<p>changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p> <p>'Significant' disturbance is defined by AEWA (The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), 2016):</p> <p>"Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either changed local distribution on a continuing basis; and/or changed local abundance on a sustained basis; and/or the reduction of ability of any significant group of birds to survive, breed, or rear their young." (Fox and Madsen, 1997)</p> <p>Site-specifics:</p>
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				<p>Little terns are sensitive to human disturbance during the breeding season as their population at Long Nanny is small, isolated and vulnerable. The National Trust has employed management measures such as fencing to restrict public access and wardens to reduce the impact of disturbance. Continued management of the site is required to reduce the risk of impact due to human disturbance to this species.</p> <p>Disturbance by human visitors is impacting this feature.</p> <p>Arctic terns can be sensitive to human disturbance during the breeding season. The National Trust has employed management measures such as fencing to restrict public access and wardens to reduce the impact of disturbance. Continued management of the site is required to reduce the impact of human activity on this species.</p>
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Advice on seasonality

In the table below, the months highlighted in green in each row indicate the months in which significant numbers of each mobile designated feature* are most likely to be present at the site during a typical calendar year. Where count data was available, highlighted months with significant numbers were defined on the basis of one or both of the following criteria being met in more than three-fifths (60%) of the years within the six years period 2007-2012. The two criteria used were: i) monthly maxima exceed 10% of the highest mean of monthly maxima over the six-year period; ii) monthly maxima exceed the 2012/2013 national significance threshold. These criteria were predominantly used for non-breeding bird features (based on WeBS data). Where insufficient count data were available to use these criteria, months with significant

numbers were highlighted on the basis of generic information on seasonal patterns of occurrence in published sources.

Applicants considering plans or projects scheduled in the periods highlighted in green would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration. The months which are not highlighted in green are not ones in which the features are necessarily absent, rather that features may be present in less significant numbers in typical years, but there may still be a significant effect. Please note that this period can vary between years and that in any one year considerable numbers of a species may be present (throughout the year or) outside of the months indicated below. Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information. Additional surveys may be required.

Feature name	Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Arctic tern, Breeding	Breeding												
Little tern, Breeding	Breeding												
Purple sandpiper, Non-breeding	Non-breeding												
Turnstone, Non-breeding	Non-breeding												

Extracts from Natural England's draft Conservation Advice for Lindisfarne SPA

Supplementary advice concerning human disturbance

Feature/Subfeature name	Attribute	Target	Season	Supporting notes
Whooper swan Greylag goose Light-bellied brent goose Shelduck Wigeon Eider Long-tailed duck Common scoter Red-breasted merganser Ringed plover Golden plover Grey plover Sanderling Dunlin Bar-tailed godwit Redshank	Disturbance caused by human activity	Restrict the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed	Non-breeding (winter and/or passage) season	<p>The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p> <p>'Significant' disturbance is defined by AEWA (The Agreement on the Conservation of</p>

				<p>African-Eurasian Migratory Waterbirds (AEWA), 2016):</p> <p>“Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either changed local distribution on a continuing basis; and/or changed local abundance on a sustained basis; and/or the reduction of ability of any significant group of birds to survive, breed, or rear their young.” (Fox and Madsen, 1997)</p> <p>Site-specifics:</p> <p>Birds can be particularly sensitive to disturbance during the over-wintering period. Optimising feeding time and restricting disturbance at roosting sites helps the bird populations gain weight over the winter. Lindisfarne NNR manages disturbance from recreational activities through temporal and spatial zones for activities such as wildfowling and watersports. It also has clearly defined bird refuge areas where disturbance is managed.</p> <p>The target has been set using expert judgement based on knowledge of the sensitivity of the feature to activities that are occurring / have occurred on the site.</p>
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Roseate tern	Disturbance caused by human activity	Reduce the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed	Breeding (summer) season	<p>The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p> <p>'Significant' disturbance is defined by AEWA (The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), 2016):</p> <p>"Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way</p>
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				<p>as to be likely to cause impacts on populations of a species through either changed local distribution on a continuing basis; and/or changed local abundance on a sustained basis; and/or the reduction of ability of any significant group of birds to survive, breed, or rear their young.” (Fox and Madsen, 1997)</p> <p>Site-specifics:</p> <p>Breeding terns are highly sensitive to disturbance by human activity. Roseate terns have not recently bred upon Lindisfarne, but management efforts are trying to increase breeding numbers in the future. Disturbance may be a major contributor to roseate terns not breeding upon Lindisfarne SPA, and instead choosing to breed upon the less disturbed Coquet Island SPA nearby. Lindisfarne NNR manage disturbance on the reserve, so to encourage recolonisation in the future (Natural England (NE), 2016).</p> <p>Roseate terns have not bred upon Lindisfarne in recent years, but successfully breed on the nearby Coquet Island. Roseate terns may favour breeding at Coquet over Lindisfarne due to reduced disturbance.</p>
Little tern	Disturbance caused by human activity	Reduce the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging,	Breeding (summer) season	The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or

		<p>feeding, moulting and/or loafing birds so that they are not significantly disturbed</p>	<p>distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p> <p>'Significant' disturbance is defined by AEWA (The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), 2016):</p> <p>"Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either changed local distribution on a continuing basis; and/or changed local abundance on a sustained basis; and/or the reduction of ability of any</p>
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				<p>significant group of birds to survive, breed, or rear their young.” (Fox and Madsen, 1997)</p> <p>Site-specifics:</p> <p>Little terns are highly sensitive to human disturbance during the breeding season. The choice of shingle beaches as nesting habitats by little tern means that the risk of human disturbance is high. Management measures are employed to reduce the impact of disturbance (Natural England (NE), 2016). National Nature Reserve shorebird wardens enforce management measures to reduce disturbance, such as having dogs on leads. These measures are important for reducing disturbance to little terns, and should continue (Natural England (NE), 2017).</p> <p>Little terns are highly sensitive to disturbance when breeding.</p>
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Advice on seasonality

In the table below, the months highlighted in green in each row indicate the months in which significant numbers of each mobile designated feature* are most likely to be present at the site during a typical calendar year. Where count data was available, highlighted months with significant numbers were defined on the basis of one or both of the following criteria being met in more than three-fifths (60%) of the years within the six years period 2007-2012. The two criteria used were: i) monthly maxima exceed 10% of the highest mean of monthly maxima over the six-year period; ii) monthly maxima exceed the 2012/2013 national significance threshold. These criteria were predominantly used for non-breeding bird features (based on WeBS data). Where insufficient count data were available to use these criteria, months with significant numbers were highlighted on the basis of generic information on seasonal patterns of occurrence in published sources.

Applicants considering plans or projects scheduled in the periods highlighted in green would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration. The months which are not highlighted in green are not ones in which the features are necessarily absent, rather that features may be present in less significant numbers in typical years, but there may still be a significant effect. Please note that this period can vary between years and that in any one year considerable numbers of a species may be present (throughout the year or) outside of the months indicated below. Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information. Additional surveys may be required.

Feature name	Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bar-tailed godwit	Non-breeding												
Common scoter	Non-breeding												
Dunlin	Non-breeding												
Eider	Non-breeding												
Golden plover	Non-breeding												
Grey plover	Non-breeding												
Greylag goose	Non-breeding												
Light-bellied brent goose	Non-breeding												
Long-tailed duck	Non-breeding												
Red-breasted merganser	Non-breeding												
Redshank	Non-breeding												

Ringed plover	Non-breeding												
Sanderling	Non-breeding												
Shelduck	Non-breeding												
Whooper swan	Non-breeding												
Wigeon	Non-breeding												
Little tern	Breeding												
Roseate tern	Breeding												

Extracts from Natural England's Conservation Advice for the Northumberland Marine SPA

Supplementary advice concerning human disturbance

Feature/Subfeature name	Attribute	Target	Season	Supporting notes
Sandwich tern Roseate tern Common tern Arctic tern Guillemot Puffin Seabird assemblage	Disturbance caused by human activity	Restrict the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed	Breeding season	<p>The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p> <p>'Significant' disturbance is defined by AEWA (The Agreement on the Conservation of</p>

				<p>African-Eurasian Migratory Waterbirds (AEWA), 2016):</p> <p>“Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either changed local distribution on a continuing basis; and/or changed local abundance on a sustained basis; and/or the reduction of ability of any significant group of birds to survive, breed, or rear their young.” (Fox and Madsen, 1997)</p> <p>Site-specifics:</p> <p>Further investigation is required to determine whether disturbance from human activity has an impact on this species.</p> <p>Human disturbance may be impacting this feature.</p>
Little tern	Disturbance caused by human activity	Reduce the frequency, duration and / or intensity of disturbance affecting roosting, nesting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed	Breeding (summer) season	<p>The nature, scale, timing and duration of some human activities can result in bird disturbance (defined as any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds in the absence of the activity) at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour,</p>

			<p>increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.</p> <p>Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, presence of people, animals and structures.</p> <p>'Significant' disturbance is defined by AEWA (The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), 2016):</p> <p>"Disturbance should be judged as significant if an action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either changed local distribution on a continuing basis; and/or changed local abundance on a sustained basis; and/or the reduction of ability of any significant group of birds to survive, breed, or rear their young." (Fox and Madsen, 1997)</p> <p>Site-specifics:</p> <p>Little tern breed predominantly at Long Nanny</p>
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				<p>and Lindisfarne. The little tern colony at Lindisfarne is funded by EU Life. This breeding site is fenced off to the public, has the appropriate signage to prevent disturbance. The site is managed by two shorebird wardens. The colony at the Long Nanny site is funded by the National Trust and is managed by wardens 24 hours a day during the breeding season.</p> <p>Little terns have a very limited foraging range and therefore monitoring of the breeding sites is required to ensure their foraging habitats are not impacted by unconsented recreational activities. Monitoring is required at Beadnell Bay and Long Nanny where unconsented jet ski activity has been known to take place.</p> <p>The target has been set due to a lack of evidence that the feature is being impacted by any anthropogenic activities.</p>
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Advice on seasonality

In the table below, the months highlighted in green in each row indicate the months in which significant numbers of each mobile designated feature* are most likely to be present at the site during a typical calendar year. Where count data was available, highlighted months with significant numbers were defined on the basis of one or both of the following criteria being met in more than three-fifths (60%) of the years within the six years period 2007-2012. The two criteria used were: i) monthly maxima exceed 10% of the highest mean of monthly maxima over the six-year period; ii) monthly maxima exceed the 2012/2013 national significance threshold. These criteria were predominantly used for non-breeding bird features (based on WeBS data). Where insufficient count data were available to use these criteria, months with significant numbers were highlighted on the basis of generic information on seasonal patterns of occurrence in published sources.

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Feature name	Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Arctic tern	Breeding												
Common tern	Breeding												
Guillemot	Breeding												
Little tern	Breeding												
Puffin	Breeding												
Roseate tern	Breeding												
Sandwich tern	Breeding												

Extracts from Natural England's Conservation Advice for the Tweed Estuary SAC

Supplementary advice concerning water quality - nutrients

Feature/Subfeature name	Attribute	Target	Season	Supporting notes
Intertidal rock Intertidal coarse sediment Intertidal mud Intertidal sand and muddy sand Intertidal mixed sediments Infralittoral rock Subtidal coarse sediments Subtidal mixed sediments Subtidal sand Mudflats and sandflats not covered by seawater at low tide Estuaries Sea lamprey River lamprey	Supporting processes: water quality - nutrients	Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from eutrophication	N/A	High concentrations of nutrients in the water column can cause phytoplankton and opportunistic macroalgae blooms, leading to reduced dissolved oxygen availability. These seaweeds can smother the sediment, preventing aeration and causing anoxia (lack of oxygen). This can impact sensitive fish, epifauna and infauna communities. The aim is to seek no further deterioration or improve water quality (Devlin et al., 2007), (Best, 2014). Site-specifics: The risk of eutrophication across the site has been assessed as low using the Environment Agency's Weight of Evidence approach. This takes into account assessments of the Water Framework Directive opportunistic macroalgae and phytoplankton quality elements using the respective assessment tools. Adverse effects to integrity should be avoided. Therefore opportunistic macroalgal levels should be maintained so there is no adverse effect to the feature through limited algal cover (<15%) and low biomass (< 500 g m ²) of macroalgal blooms in the available intertidal habitat, with area of available intertidal habitat affected by

				<p>opportunistic macroalgae less than 15 %. There should also be limited (<5%) entrainment of algae in the underlying sediment (all accounting for seasonal variations and fluctuations in growth). Phytoplankton levels should be maintained above a WFD assessment tool score of 0.6, where there is only a minor (a) decline in species richness, and (b) disturbance to the diatom-dinoflagellate succession in the spring bloom compared to reference conditions.</p> <p>There is evidence from survey or monitoring that shows this attribute of the feature to be in a good condition and/or currently un-impacted by anthropogenic activities</p>
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Advice on seasonality

In the table below, the months highlighted in green in each row indicate the months in which significant numbers of each mobile designated feature* are most likely to be present at the site during a typical calendar year. Where count data was available, highlighted months with significant numbers were defined on the basis of one or both of the following criteria being met in more than three-fifths (60%) of the years within the six years period 2007-2012. The two criteria used were: i) monthly maxima exceed 10% of the highest mean of monthly maxima over the six-year period; ii) monthly maxima exceed the 2012/2013 national significance threshold. These criteria were predominantly used for non-breeding bird features (based on WeBS data). Where insufficient count data were available to use these criteria, months with significant numbers were highlighted on the basis of generic information on seasonal patterns of occurrence in published sources.

Applicants considering plans or projects scheduled in the periods highlighted in green would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration. The months which are not highlighted in green are not ones in which the features are necessarily absent, rather that features may be present in less significant numbers in typical

years, but there may still be a significant effect. Please note that this period can vary between years and that in any one year considerable numbers of a species may be present (throughout the year or) outside of the months indicated below. Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information. Additional surveys may be required.

Feature name	Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
River lamprey	Downstream migration (juveniles)												
River lamprey	Spawning (freshwater)												
River lamprey	Upstream migration (adults)												
River lamprey	Estuarine feeding												
Sea lamprey	Downstream migration (juveniles)												
Sea lamprey	Spawning (freshwater)												
Sea lamprey	Upstream migration (adults)												

Appendix 2: Results of North Northumberland Coastal Dog Walker Questionnaire Survey

Coastal Dog-Walker Survey Results

Number of Dogs (tally)	1 (30), 2 (22), 3 (5), 4+ (1)
Dog(s) on lead? (Y/N)	Y = 13 N = 45

Q1. How far have you travelled to get here today?

½ mile (0.8km) or less	½ - 1 mile 0.8-1.6 km	1-5 miles 1.6 – 8km	5-10 miles 8 – 16 km	10-15 miles 16 – 24km	15-20 miles 24 – 32km	More than 20 miles/ 32km
14	12	14	12	1	0	4

Q2. To help understand where visitors come from it is very useful to know postcodes. Are you willing to provide your postcode?

Y/N

Q3. Why do you choose to walk your dog at the coast?

<u>Reason</u>	<u>Tally</u>
Nowhere suitable close to home	6
Convenient/close to home	35
Tranquillity	27
Good Parking	4
Enjoy the beach/sea/views	51
Plenty of space for the dog(s) to run around safely	51
Feels safe	15
Other (on holiday/visiting family/friends)	4

Q4a. Is there anywhere suitable to walk your dog closer to home?

Tally	
Yes	No
37	21

Q4b. If so, how often do you use it?

Frequencies given & tallies

<u>Frequencies</u>	<u>Tally</u>
Not very often	2
Twice per week	3
Three times per week	4
Every other day	2
Most Days	6
Everyday	20

Q4c. Are there any particular reasons why you don't use it more often?

Reasons (if given) & tallies

<u>Reason</u>	<u>Tally</u>
Prefer beach, can let dog off lead	10
Safer on beach, more relaxed	1
Variety, more space on beach	4
Beach is close	1
Can walk further on beach	1
Depends on tides	1
Quieter on certain beach	2

Q5. If a suitable area of greenspace was available close to your home would you use this as an alternative to walking your dog at the coast?

Yes, most of the time	Yes, some of the time	No, unlikely	Not sure
10	29	15	0

Q6. Do you or your dog/s go on the rocky shore? If so, what proportion of time do you generally spend there?

Yes	Time spent (minutes)	<5	5-10	11-20	21-30	31-45	46-60	61+
14	Tally	2	6	3	2		1	0

No	Reasons why not (if given)	Tall y
44	Easier to walk on sand	5
	Too dangerous/slippy/uneven	14
	Dogs get more exercise on sand	1
	Prohibitive	1
	Wary of tides	1

Q7. Aside from this location, do you visit any other places on the coast to walk your dog? If yes – which 3 locations do you visit most often?

Locations given	Tally	Locations given	Tally
Warkworth	7	Craster	8
Boulmer	2	Low Newton	10
Embleton	7	High Newton	1
Bamburgh	22	Alnmouth	10
North Seahouses	8	Dunstanburgh	1
Druridge Bay	2	Budle Bay	1
Annstead	2	Ross Sands	2
Beadnell	18	Amble	1

Q8. How often do you typically visit this site during the winter months (Oct – March) and the summer months (April- Aug)?

	Tally	
	Winter (Oct – March)	Summer (April – August)
Three or more times per day	0	0
Twice per day	8	15
Once per day	19	15
A few times per week	9	9
Once per week	8	7
Once or twice per month	7	8
Less than once per month	7	4

Q9. As the number of people who use the coast increases the pressures on the unique environment will increase. With this in mind, to what extent would you support or object to plans which require....

	Tally				
	Completely support	Support to some extent	Neither support nor object	Object to some extent	Strongly object
A) Visitors only walking on designated paths along sensitive areas of the coast	14	27	3	13	1
B) Dog owners to keep dogs on a lead during sensitive times of the year	12	32	3	11	0
C) Dog owners to keep dogs on a lead when walking through specific areas	31	24	1	1	1

Q10. How long would you say you spend on the beach/shoreline during your visit?

Tally				
30 minutes or less	30 minutes – 1 hour	1-2 hours	2-4 hours	More than 4 hours
0	22	32	5	0

Q11. Do you tend to visit the coast at a certain time of day?

Tally					
Early Morning (Before 9am)	Morning (9am-12pm)	Early Afternoon (12-2pm)	Late Afternoon (2-4pm)	Evening (After 4pm)	Varies/First Visit
14	17	5	11	15	17



Planning Policy

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