

Habitats Regulations Assessment (Appropriate Assessment) of the Core Strategy Development Plan Document of the Local Development Framework

Background

1. The purpose of the Habitats Regulations Assessment (formerly known as an Appropriate Assessment, (AA)) is to protect the integrity of European designated sites through the planning process at both a regional and local level. The AA will assess the impacts of a land-use plan against the conservation objectives of the European designated site(s).
2. Plans that come into force from October 2006 are eligible for an AA, in order to fulfil requirements of the European Communities Habitats (1992) directive, article 6 (3) and (4).
3. The European Communities Habitats Directive (1992), article 6, (3) and (4) requires that “any plan or project not directly concerned 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 and projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives”.

Methodology used for this AA

4. European guidance recommends a process of up to four stages:
 - Screening. Determining whether the plan is likely to have a significant effect on a European site
 - Appropriate Assessment. Determining whether, in view of the site’s conservation objectives, the plan would have an adverse effect (or risk of this) on the integrity of the site, If not, the plan can proceed
 - Assessment of alternative solutions. Where the plan is assessed as having an adverse effect (or risk of this) on the integrity of a site, there should be an examination of alternatives
 - Assessment where no alternative solutions remain and where adverse impacts remain.
5. This report discusses stages 1 (Screening) and 2 (Appropriate Assessment).

Initial Screening

6. The initial screening process aims to consider all of the European sites that the proposed Core Strategy could possibly affect. Table 1 shows the locations of the European sites which lie with Stockton on Tees Borough, and also includes sites which exist in neighbouring authorities.

7. Within the Borough, Cowpen Marsh Site of Special Scientific Interest (SSSI) and the majority of Seal Sands SSSI lie within the Teesmouth and Cleveland Coast Special Protection Area (SPA). This SPA is recognised as a wetland of international importance for nature conservation, and is also designated as a Ramsar site.
8. This site also extends into neighbouring Boroughs, and a number of other European sites exist in different parts of the region. Government advice states “when considering whether the plan option is likely to have a significant effect on a European site, it should be noted that such a site may be located either within or outside the area covered by the plan. Significant effects may be incurred even in cases where the area of the plan is some distance away”. Therefore the table below provides a list of sites that lie, either within the Borough boundary or within approximately 10km of the Borough boundary, and may be affected by the Stockton-on-Tees Borough Council LDF.

Table 1: Sites potentially affected by the Stockton-on-Tees Borough Council LDF.1

Site Name and Status	Location	Primary Reason for Designation
Teesmouth and Cleveland Coast RAMSAR, SPA	Stockton-on-Tees	Knot, Redshank, Sandwich Tern,
North Yorkshire Moors (SAC/SPA)	North Yorkshire Moors National Park	North Atlantic Wet Heaths, European Dry Heaths.
Thrislington (SAC)	Sedgefield Borough	Semi natural dry grasslands and scrubland facies; Calcareous Grasslands
Castle Eden Dene (SAC)	Easington	Extensive occurrence of Yew Woodland
Durham Coast SAC	Easington	Vegetated Sea Cliffs

¹ Source - <http://www.wetlands.org/rsis/>
 & <http://www.jncc.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0012768>

Insert location map showing SBC boundary and SACs/SPAs.

Table 2 Natura 2000 Sites that could possibly be affected by the Core Strategy Development Plan Document

Site Name and Status	Qualifying Features	Conservation Objectives
Teesmouth and Cleveland Coast (RAMSAR, SPA)	<p>SPA classified in August 1995 and extended in March 2000. Listed as a Ramsar site under the Convention of Wetlands of International Importance. The intertidal part of the SPA is termed a European Marine Site.</p> <p>Wetland of international importance comprising intertidal sand and mudflats, rocky shore, sand dunes, salt and freshwater marsh, all used for breeding, feeding and roosting of internationally important populations of regularly occurring Annex 1 species². Teesmouth and the Cleveland coast is of importance for internationally important populations of breeding little tern and migrant sandwich tern. Knot occurs in internationally important numbers in winter and redshank occurs in internationally important numbers during moult and migration in late summer and autumn.</p>	Focus on maintaining favourable conservation status ³ , through appropriate site management including the avoidance of damaging activities and disturbance to species for which the site was designated.
North Yorkshire Moors (SAC/SPA)	<p>Classified as an SPA in May 2000 because of the site's European ornithological importance. The SPA contains the largest continuous tract of heather moorland in England. It displays a wide range of high quality dry heathland and blanket bog vegetation dominated by Calluna, with wet heath in the transition areas. The site is of European importance because it is regularly used by 1% or more of the Great Britain population of two species listed in Annex 1 in any season: Merlin and Golden Plover. In addition, the site supports a breeding population which includes short-eared owl, peregrine and hen harrier.</p> <p>Also designated in April 2005 as it hosts habitats of blanket bog, European dry heaths and Northern Atlantic wetland, with cross-leaved heath which are listed in Annex 1.</p>	To maintain in favourable condition the habitats for the populations of Annex 1 species of European importance and to maintain in favourable condition the Annex 1 habitats.

² The species listed in Annex 1 of the Birds Directive are the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. Species listed on Annex 1 are in danger of extinction, rare or vulnerable.

³Favourable conservation status - natural range and area are stable or increasing, and specific structure and functions which are necessary for its long term maintenance exist and are likely to continue for the foreseeable future.

Site Name and Status	Qualifying Features	Conservation Objectives
Thrislington (SAC)	Semi natural dry grasslands and scrubland facies on calcareous substrates. Contains the largest of the few surviving strands of CG8 Sesleria albicans – Scabiosa columbaria 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.	To maintain ^{4*} , in favourable condition, the unimproved calcareous grassland, with particular reference to semi-natural dry grasslands and scrubland facies on calcareous substrates (CG8 ⁵ grasslands)
Castle Eden Dene (SAC)	Represents the most extensive northerly native occurrence of yew Taxus baccata woods in the UK. Extensive yew groves are found in association with ash-elm Fraximus-Ulmus woodland and it is the only site selected for yew woodland on magnesium limestone in north-east England.	To maintain in favourable condition the Taxus baccata wood
Durham Coast (SAC)	Only example of vegetated sea cliffs on magnesium limestone exposures in the UK. These cliffs extend along the North Sea coast for over 20km from South Shields to Blackhall Rocks. Within these habitats rare species of contrasting phylogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest.	Subject to natural change, to maintain, in favourable condition, the vegetated sea cliffs:

Table 3 Key Requirements for Maintenance of Sites in a Favourable Condition.

Site Name and Status	Requirement	Initial Assessment of effects of Core Strategy
Teessmouth and Cleveland Coast (RAMSAR, SPA)	<ul style="list-style-type: none"> • Food availability • Vegetation structure • Hydrology/flow • Water depth • Disturbance • Extent and distribution of habitat • Open landscape 	<p>Potential for impact on water quality</p> <p>No impact in land use change, habitat loss or fragmentation</p> <p>Potential for limited disturbance due to growing population and increase in visitor trips</p>
North Yorkshire Moors (SAC/SPA)	<ul style="list-style-type: none"> • No reduction in area of any of the habitat types and any consequent fragmentation • No artificial drains/grips especially in wetter areas 	<p>No impact on land management</p> <p>Potential for impact on air quality</p> <p>No impact in land use change, habitat loss or</p>

⁴ Maintain implies restoration if feature is not currently in favourable condition.

⁵ CG8 Grasslands is Sesleria albicans and Scabiosa columbaria grassland.

APPENDIX 1

Site Name and Status	Requirement	Initial Assessment of effects of Core Strategy
	<ul style="list-style-type: none"> • No erosion associated with human impacts (e.g. fires vehicles, livestock grazing, recreational activities) • No large scale peat extraction • No overgrazing • No overburning • Appropriate grazing and burning (provides for diversity of heather) • Limited air pollution • Open landscape • Lack of disturbance and persecution 	fragmentation Potential for limited disturbance due to growing population and increase in visitor trips
Thrislington (SAC)	<ul style="list-style-type: none"> • No reduction in extent • Continuous management by seasonally adjusted grazing • No fertiliser input • Control of invasive features • Control of over grazing 	No impact on land management No impact in land use change, habitat loss or fragmentation No impact on control of invasive species
Castle Eden Dene (SAC)	<ul style="list-style-type: none"> • No loss of ancient semi-natural stands • 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 	No impact on land management Potential for impact on air pollution
Durham Coast (SAC)	<p>The communities present on the sea cliffs are largely maintained by natural processes including:</p> <ul style="list-style-type: none"> • Exposure to sea spray • Erosion and slippage of the soft magnesium limestone bedrock and overlying glacial drifts, localised flushing by calcareous water. <p>There should be no increase in area constrained by introduced structures or landforms</p>	No impact on natural processes/structure and landforms.

Conclusions of initial screening

9. From the initial screening exercise, it is concluded that plans of Stockton Borough Council will not have any impact on the following sites:

- Thrislington SAC
 - Durham Coast (SAC)
10. The remaining sites will be carried forward to be considered as to whether any of the potential impacts are likely to be significant. The favourable conditions tables, which should be used to inform the scope of the AA are attached as Appendices 1, 2 and 3.

TEESMOUTH AND CLEVELAND COAST SPA/RAMSAR SITE

11. The SPA is a wetland of international importance comprising intertidal sand and mudflats, rocky shore, sand dunes, salt marsh, and freshwater marsh. All habitats are used for breeding, feeding and roosting. Large numbers of waterfowl feed and roost on the site in winter and during passage periods. It qualifies under the Birds Directive by supporting internationally important populations of regularly occurring Annex 1⁶ species and migratory species, and an internationally important assemblage of water birds.
12. Table 4 provides details of the qualifying features of the SPA, alongside key sub features, the conservation objectives for the site, and a brief description of the site's vulnerabilities. The favourable conditions table, which should be used to inform the scope of the AA is attached at Appendix 1.

NORTH YORK MOORS SAC/SPA

13. This upland landscape is regarded as one of the best areas in the UK for heathland, containing the largest continuous tract of upland heather moorland in England. The North Atlantic wet heaths in the northern and eastern moors account for a high proportion of the European distribution of this habitat, and are a primary reason for its selection as an SAC. On the western, southern and central moors the principal type of heathland is European dry heaths, reflecting the underlying sandstone and limestone geology of the area. Blanket bog is also a significant presence in the North York Moors, and is an important priority habitat within the UK due to the abundance of bogs found in the UK compared to their comparative scarcity in the rest of Europe.
14. The mosaic of dry and wet heaths on the moors supports an important assemblage of moorland breeding birds, including merlin and golden plover.
15. Tables 5 and 6 provide details of the qualifying features of the SAC/SPA, alongside key sub features, the conservation objectives for the site, and a brief description of the site's vulnerabilities. The favourable conditions table, which should be used to inform the scope of the AA is attached at Appendix 2.

CASTLE EDEN DENE SAC

16. Castle Eden Dene is the largest area of natural woodland in North East England. It occupies a deep, steep-sided ravine formed in the Magnesian Limestone and boulder clay of this area of County Durham. The dene vegetation is a survivor of the wild wood which once covered most of Britain.

⁶ The identification and classification of Special Protection Areas for rare or vulnerable bird species listed in Annex 1 of the Birds Directive

Even today it remains relatively undisturbed by humans due to the difficult terrain of the steep sided ravines. Over 450 species of plants have been recorded in the wood, many of which are typical of ancient woodlands that date back to pre - medieval times.

APPENDIX 1

Table 4: Qualifying features of Teesmouth and Cleveland Coast SPA/Ramsar site

Qualifying Feature	Key Sub Feature	Conservation Objectives	Vulnerabilities
<p>Internationally important populations of the regularly occurring Annex 1 species. Teesmouth and Cleveland Coast is of importance for internationally important populations of breeding little tern and migrant sandwich tern, both of which are listed on Annex 1. (English Nature's advice under regulation 33(2) for the European Marine Site (November 2000).</p>	<p>Sand and shingle: nesting area for little tern (colonies at eg Seaton Dunes, South Gare and Coatham Sands).</p>	<p>Subject to natural change, maintain in favourable condition the habitats for the internationally important populations of the regularly occurring Annex 1 bird species, under the Birds Directive, in particular:</p> <ul style="list-style-type: none"> • Sand and shingle • Intertidal sandflat and mudflat • Shallow coastal waters 	<p>The natural incursion of coarse marine sediments into the estuary and the eutrophication of sheltered mudflats leading to the spread of dense Enteromorpha beds may impact on invertebrate density and abundance, and hence on waterfowl numbers. Indications are that the observed sediment changes derive from the reassertion of natural coastal processes within the context of an estuary much modified by human activity. An extensive long-term monitoring programme is investigating the effects of the Tees Barrage, while enrichment from sewage discharges should be ameliorated by the planned introduction of improved treatment facilities and the Environment Agency's acceptance of Seal Sands as a candidate Sensitive Area to eutrophication. Aside from the eutrophication issue, water quality has shown considerable and sustained improvement, leading to the re-establishment of migratory fish populations and the growth of cormorant and common seal populations. The future development of port facilities in areas adjacent to the site, and in particular of deep water frontages with associated capital dredging, has the potential to cause adverse effect; These nutrient issues will be addressed through the planning system/Habitats Regulations, as will incompatible coastal defence schemes. Other issues on this relatively robust site include scrub</p>
	<p>Intertidal sand and mudflat: roosting and loafing sites for sandwich tern during the post-breeding period (July and August) prior to autumn migration, and little tern in summer (May to August). (North Gare Sands, Seal Sands, Bran Sands and Coatham Sands).</p>		
	<p>Shallow coastal waters: the main feeding areas for little tern and sandwich tern, both of which species feed almost exclusively on fish</p>		
<p>Internationally important populations of regularly occurring migratory bird species. Knot occurs in internationally important numbers in winter; redshank occurs in internationally important numbers during moult and migration in late summer and autumn.</p>	<p>Rocky shores: vital food resource for the wintering knot population; also used by a small proportion of the autumn redshank population. Rocky shores at higher tidal levels are also used as high water roosting sites. (South Gare, Hartlepool Headland / North Sands, Seaton Snook and Coatham and Redcar Rocks).</p>	<p>Subject to natural change, maintain in favourable condition the habitats for the internationally important populations of regularly occurring migratory bird species, under the Birds Directive, in particular:</p> <ul style="list-style-type: none"> • Rocky shores • Intertidal sandflat and mudflat • Saltmarsh 	
	<p>Intertidal sandflat and mudflat: these support high densities of invertebrates which are important as food for knot and redshank. (Redshank primarily at Seal Sands, North Tees mudflat and Greatham Creek; knot primarily at Seal Sands and Hartlepool North Sands. Knot also roost at higher tidal levels at North Gare Sands, Bran Sands and Hartlepool North Sands).</p>		

APPENDIX 1

Qualifying Feature	Key Sub Feature	Conservation Objectives	Vulnerabilities
	<p>Saltmarsh: roosting for redshank (the margins of Greatham Creek and part of Seal Sands)</p> <p>Grazing marsh: A small proportion of the redshank population utilize grazing marsh habitats outside the European Marine Site.</p>		<p>encroachment on dunes (addressed by Site Management Statements with owners) and recreational, bait-gathering and other disturbance/damage to habitats/species (addressed by WCA 1981, NNR Byelaws and the Tees Estuary Management Plan).</p>
<p>Internationally important assemblage of water birds The large areas of intertidal mudflats and sandflats at Teesmouth and Cleveland Coast support dense populations of marine invertebrate species, which in turn support dense populations of water birds.</p>	<p>Rocky shores: very important feeding habitats; invertebrates are eaten by knot and wintering redshank.</p> <p>Intertidal sandflat and mudflat: invertebrates in these areas are important as winter food for knot, redshank, shelduck and sanderling.</p> <p>Saltmarsh: feeding and roosting for many species, in particular redshank, shelduck and teal.</p> <p>Grazing marsh: a high proportion of the assemblage also utilise grazing marsh habitats outside the European Marine Site.</p>	<p>Subject to natural change, maintain in favourable condition the habitats for the internationally important assemblage of waterbirds, under the Birds Directive, in particular:</p> <ul style="list-style-type: none"> • Rocky shores • Intertidal sandflat and mudflat <p>Saltmarsh</p>	

APPENDIX 1

Table 5: Qualifying features of North York Moors SAC

Qualifying Feature	Key Sub Feature	Conservation Objectives	Vulnerabilities
<p>This site in north-east Yorkshire within the North York Moors National Park contains the largest continuous tract of upland heather moorland in England.</p> <p>North Atlantic wet heaths with <i>Erica tetralix</i>, for which this is considered to be one of the best areas in the UK.</p>	<p>M16 <i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath is the second most extensive vegetation type on the site and is predominantly found on the eastern and northern moors where the soil is less free-draining. Purple moor-grass <i>Molinia caerulea</i> and heath rush <i>Juncus squarrosus</i> are also common within this community. In the wettest stands bog-mosses, including <i>Sphagnum tenellum</i>, occur, and the nationally scarce creeping forget-me-not <i>Myosotis stolonifera</i> can be found in acid moorland streams and shallow pools.</p>	<p>To maintain* in favourable condition the:</p> <ul style="list-style-type: none"> • European dry heath • Northern Atlantic wet heath with <i>Erica tetralix</i> • Blanket bog <p>*Maintain implies restoration if feature is not currently in favourable condition</p>	<p>This habitat is very sensitive to any changes to the existing moorland management regime, which is currently carried out by mainly for sheep and grouse shooting purposes. Changes to grazing levels will impact upon the diversity of the heather found, with overgrazing leading to direct heather loss and undergrazing allowing scrub to encroach. The wetter habitats are vulnerable to changes in drainage that can lead to a loss in structural diversity as well as the loss of mosses and lichens. Overburning or accidental fires, the risk of which can be exacerbated by increasing visitor numbers, may also detrimentally impact upon these habitats.</p>
<p>European dry heaths, for which this is considered to be one of the best areas in the UK.</p>	<p>Dry heath covers over half the site and forms the main vegetation type on the western, southern and central moors where the soil is free-draining and has only a thin peat layer. The principal NVC type present is H9 <i>Calluna vulgaris</i> – <i>Deschampsia flexuosa</i>, with some H10 <i>Calluna vulgaris</i> – <i>Erica cinerea</i> heath on well-drained areas throughout the site, and large areas of H12 <i>Calluna vulgaris</i> – <i>Vaccinium myrtillus</i> heath on steeper slopes.</p>		
<p>Blanket bogs, for which the area is considered to support a significant presence.</p>	<p>Upland bog</p>		

APPENDIX 1

Table 6: Qualifying features of North York Moors SPA

Qualifying Feature	Key Sub Feature	Conservation Objectives	Vulnerabilities
<p>Internationally important populations of the regularly occurring Annex 1 species.</p> <ul style="list-style-type: none"> • Golden Plover • Merlin • 	<p>Upland Moor Merlin feed on small birds such as meadow pipit and skylark which nest on the moors. Golden plover nest on the moors and feed on invertebrates on the moors. Both species require the moorland habitat to be managed.</p>	<p>To maintain, in favourable condition, the habitats for the populations of Annex 1 species of European importance, with particular reference to merlin and golden plover, the:</p> <ul style="list-style-type: none"> • upland moorland. <p>*Maintain implies restoration if feature is not currently in favourable condition</p>	<p>The value of the North York Moors in providing suitable habitat for breeding merlin and golden plover is dependent on the moorland management that is carried out by farmers and gamekeepers to maintain the moorland plant communities and grouse populations. The most vulnerable plant communities are the heaths and mires which are susceptible to overgrazing, gripping and too frequent heather burning leading to species impoverishment and a loss of structural diversity. A lack of keeping and undergrazing on some moors has resulted in large areas of undermanaged old heather lacking structural diversity which reduces the suitability of the habitat for merlin and golden plover. This is being addressed by looking at payments for positive heather management, such as cutting and burning. The majority of the site is being managed in a desirable way with pressures being largely restricted to small areas.</p>
<p>Internationally important populations of regularly occurring migratory bird species.</p> <ul style="list-style-type: none"> • Golden Plover Merlin 			

Table 7: Qualifying features of Castle Eden Dene SAC

Qualifying Feature	Key Sub Feature	Conservation Objectives	Vulnerabilities
<p>Castle Eden Dene represents the 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 magnesian limestone in north-east England.</p>	<p>Not applicable</p>	<p>To maintain, in favourable condition, the <i>Taxus baccata</i> wood.</p>	<p>Loss of ancient semi-natural stands of yew trees</p>

Screening Analysis of the Stockton on Tees Borough Core Strategy Preferred Options

Scale of development

17. In general terms, the Core Strategy will provide for:
- An additional 9000 – 11,000 new homes between 2004 and 2021
 - Employment provision to include
 - mixed use development on key regeneration sites in the core urban area
 - utilising undeveloped land on existing industrial estates
 - prestige uses at Wynyard
 - airport related uses at Durham Tees Valley Airport
 - uses related to the chemical cluster at Billingham and Seal Sands.
18. Stockton's Core Strategy Preferred Options for the spatial strategy considers four options:
- Option 1: Concentrating development in the core urban area focused on the river corridor between Stockton and Middlesbrough and Stockton town centre, with Billingham, Thornaby and Yarm playing a supportive role
 - Options 2: Spreading development evenly between the four settlements of Stockton, Billingham, Thornaby and Yarm
 - Option 3: Providing for a dispersed pattern of development
 - Option 4: Allowing market forces to decide (that is, an unplanned approach).
19. All of these options have the potential to impact on Natura sites in the following ways:
- More activity, noise, light
 - Increased traffic, leading to increased air pollution
 - Increased use of water
 - Increased run-off of surface water
 - Increased visits to the European sites, possibly with associated disturbance of fauna and impacts on habitats (for example, through trampling).
20. However, there will be subtle differences between the options.
21. The main impacts of concentrating development in the core area are likely to be in the form of:
- Option 1:
- Greater concentration in activity, traffic generation, surface water run-off and use of resources. However, land take involve the use previously developed land, and development is unlikely to take

place on European sites themselves. In terms of sustainability, this option should lead to the lowest increase in car journeys, as journey distances to jobs, services and facilities should be minimised, therefore reducing the increase in CO2 emissions.

- Potential impact on the River Tees, in the form of greater urbanisation; hard surfacing close to the river; increased run-off directly into the river; increasing flood risk potential.
- Potential to affect the water quality of the Tees through increased pollution due to increased surface water run-off.
- Concentration in the core urban area is unlikely to cause any loss or fragmentation of habitat area, or direct disturbance.

22. The main impacts of concentrating development in the wider urban area are likely to be in the form of:

Option 2:

- Concentration in activity, traffic generation, surface water run-off and use of resources. However, land take involve the use previously developed land, and development is unlikely to take place on European sites themselves. This option could lead to a greater increase in CO2 emissions, as longer journeys to jobs, services and facilities might be involved.
- Surface water run-off would be dispersed to a wider range of water courses initially. However, all flow into the River Tees, and could potentially impact upon the hydrology of the river.
- Concentration in the wider urban area is unlikely to cause any loss or fragmentation of habitat area, or disturbance.

23. A dispersed strategy for development, throughout the Borough would have the likely impacts of:

Option 3:

- Greater use of greenfield land, although it is unlikely that any development would take place on European sites.
- A more dispersed pattern of development could lead to a greater increase (or less reduction) in CO2 emissions and this will impact on air quality.
- Surface water run-off would be dispersed to a wider range of water courses, before eventually entering the River Tees. Potential to have less impact on water quality of the Tees as greater opportunity for “natural “ cleansing before tributaries reach the main river.
- Although it is unlikely that any development would cause loss of habitat or fragmentation of a European site, disturbance could occur if development takes place in close proximity.

24. With an unplanned approach (Option 4), it is difficult to say with any certainty what the likely impacts of development might be. Although it is unlikely that any development would cause loss of habitat or

fragmentation of a European site, disturbance could occur if development takes place in close proximity.

Screening analysis of the Stockton on Tees Council Core Strategy Policies, Preferred Options.

25. This section considers each of the policies put forward in the Preferred Options for the Core strategy. *Each policy has been assessed against the criteria contained in the Natural England Draft Guidance on the Habitats Regulations Assessment of Regional Strategies and Sub-Regional Strategies.*

Table 8. Policy Analysis of potential impacts upon Teesmouth and Cleveland Coast SPA/Ramsar Site.

Policy	Policy	Potential Impacts	Further Assessment Required
CS1	Spatial Strategy Identifies the locational priority for development in the Borough.	The Preferred Option is to focus development in the Core Area, along the river corridor, where regeneration opportunities exist. However, the Preferred Options also supports regionally significant employment clusters at Billingham and Seal Sands, which may impact on the SPA/Ramsar site.	Yes
CS2	Transport Identifies improvements to the transport infrastructure and promotes the location of development to improve accessibility and reduction of use of the private car.	The Preferred Options should help to reduce the impact of development on the environment. However, specific road schemes to improve accessibility, particularly in relation to the East Billingham Transport Corridor, may have the potential impact upon the SPA/Ramsar site	Yes
CS3	Sustainable Living Policy sets the sustainable criteria against which development proposals will be considered	This policy is intended to promote sustainable development and ensure that concepts of sustainability are embraced in all development.	No
CS4	Economic Regeneration Policy provides the strategic context for future economic development and identifies general quantities and locations of development	Of the general employment locations, development at North Shore, and elsewhere in the Core Area, could potentially be adjacent to the River Tees. However, the Preferred Options also supports regionally significant employment clusters at Billingham and Seal Sands, which may impact on the SPA/Ramsar site.	Yes

APPENDIX 1

Policy	Policy	Potential Impacts	Further Assessment Required
CS5	<p>Town Centres Relates in the main to maintaining and enhancing the vitality and viability of town and district centres.</p>	The promotion of the development of a cultural sector includes land along the River Tees.	Yes
CS6	<p>Community Facilities Policy sets out the Council's Preferred Option for providing facilities to support sustainable communities.</p>	Although aspects of this policy will be implemented through other Development Plan Documents, the importance of the River Tees as a key location for cultural, sport, recreation and leisure uses, including the Green Blue Heart, is highlighted.	Yes
CS7	<p>Housing Distribution and Phasing Policy sets out in terms of quantity and location, broadly where housing development will take place in the Borough.</p>	The identification of broad locations for new housing development includes brownfield sites along the river.	Yes
CS8	<p>Housing Mix and Affordable Housing Provision Provides more detail relating to the provision of housing and the creation of mixed sustainable communities</p>	Main aim of this policy is to deal with providing quality housing stock, including the provision of affordable housing.	Yes
CS9	<p>Provision for Gypsies and Travellers Provides a policy framework for considering the needs of Gypsies and Travellers</p>	The policy itself does not identify locations for sites for gypsies and travellers. As such, it is not possible to identify any impacts. These will need to be considered if sites are either identified in other Development Plan Documents or they come forward as proposals.	No
CS10	<p>Environmental Protection This policy seeks to protect the environment from inappropriate development.</p>	This policy actively protects the environment, specifically referencing designated sites, and seeking to limit the impact of development on water resources and flood risk.	No
CS11	<p>Planning Obligations Provides the context within which developer</p>	The policy will not in itself, or in combination, lead to development.	No

Policy	Policy	Potential Impacts	Further Assessment Required
	contributions will be sought.		

Table 9: Policy Analysis of potential impacts upon North York Moors SPA/SAC

Policy	Policy	Potential Impacts	Further Assessment Required
CS1	Spatial Strategy Identifies the locational priority for development in the Borough	The Preferred Option is to focus development in the core area where regeneration opportunities exist. Development is unlikely to have a potential impact upon the SPA/SAC. An underlying principal of the Core Strategy is to continue population growth in the area, thus reducing pressure development elsewhere closer to the SPA/SAC	No
CS2	Transport Identifies improvements to the transport infrastructure and promotes the location of development to improve accessibility and reduction of use of the private car.	The Preferred Options should help to reduce the impact of development on the environment. Any road proposals are remote from the SPA/SAC Policy is unlikely to have a potential impact upon the SPA/SAC	No
CS3	Sustainable Living Policy sets the sustainable criteria against which development proposals will be considered	This policy is intended to promote sustainable development and ensure that concepts of sustainability are embraced in all development.	No
CS4	Economic Regeneration This policy provides the strategic context for future economic development and identifies general quantities and locations of development	Of the general employment land identified, sites in the core area, the wider urban area and regionally significant employment clusters are remote from the SPA/SAC. There is a small risk that air pollution from any expansion of the chemical industries may affect the SAC. However, given the distance from the SAC and the prevailing wind direction, it is considered that any impact will be minimal.	No

APPENDIX 1

Policy	Policy	Potential Impacts	Further Assessment Required
CS5	<p>Town Centres Relates in the main to maintaining and enhancing the vitality and viability of town and district centres.</p>	Proposal aim to concentrate town centre uses within existing centres, and resist expansion/development of out-of- town centres such as Teesside Retail Park.	No
CS6	<p>Community Facilities This policy sets out the Council's Preferred Option for providing facilities to support sustainable communities.</p>	The general location of facilities to support existing communities is unlikely to impact on the SPA/SAC	No
CS7	<p>Housing Distribution and Phasing Policy sets out in terms of quantity and location, broadly where housing development will take place in the Borough.</p>	Although this policy identifies broad locations for new housing development, these are remote from the SAC/SPA	No
CS8	<p>Housing Mix and Affordable Housing Provision Provides more detail relating to the provision of housing and the creation of mixed sustainable communities</p>	Main aim of this policy is to deal with providing quality housing stock, including the provision of affordable housing, but these are remote from the SAC/SPA.	No
CS9	<p>Provision for Gypsies and Travellers Provides a policy framework for considering the needs of Gypsies and Travellers</p>	The policy itself does not identify locations for sites for gypsies and travellers. As such, it is not possible to identify any impacts. These will need to be considered if sites are either identified in other Development Plan Documents or they come forward as proposals.	No
CS10	<p>Environmental Protection This policy seeks to protect the environment from inappropriate development.</p>	This policy actively protects the environment, specifically referencing designated sites, and seeking to limit the impact of development on water resources and flood risk.	No
CS11	<p>Planning Obligations Provides the context within which developer</p>	The policy will not in itself, or in combination, lead to development.	No

Policy	Policy	Potential Impacts	Further Assessment Required
	contributions will be sought.		

Table 10: Policy Analysis of potential impacts upon Castle Eden Dene SAC

Policy	Policy	Potential Impacts	Further Assessment Required
CS1	Spatial Strategy Identifies the locational priority for development in the Borough	The Preferred Option is to focus development in the Core Area of the Borough where regeneration opportunities exist. Development is unlikely to have a potential impact upon the SAC.	No
CS2	Transport Identifies improvements to the transport infrastructure and promotes the location of development to improve accessibility and reduction of use of the private car.	The Preferred Options should help to reduce the impact of development on the environment, and any road improvement schemes are remote from the SAC.	No
CS3	Sustainable Living Policy sets the sustainable criteria against which development proposals will be considered	This policy is intended to promote sustainable development and ensure that concepts of sustainability are embraced in all development.	No
CS4	Economic Regeneration This policy provides the strategic context for future economic development and identifies general quantities and locations of development	Of the general employment land identified, sites in the core area, the wider urban area are remote from the SAC. There is a small risk that air pollution from any expansion of the chemical industries may affect the SAC. However, given the distance from the SAC and the prevailing wind direction, it is considered that any impact will be minimal.	No
CS5	Town Centres Relates in the main to maintaining and enhancing the vitality and viability of town and district centres.	Proposal aim to concentrate town centre uses within existing centres, and resist expansion/development of out-of- town centres such as Teesside Retail Park. More detailed proposals will come forward in other Development Plan Documents.	No
CS6	Community Facilities	The general location of facilities to support existing communities is unlikely	No

APPENDIX 1

Policy	Policy	Potential Impacts	Further Assessment Required
	This policy sets out the Council's Preferred Option for providing facilities to support sustainable communities.	to impact on the SAC	
CS7	Housing Distribution and Phasing Policy sets out in terms of quantity and location, broadly where housing development will take place in the Borough.	This identifies broad locations for new housing development, but sites are remote from the SAC	No
CS8	Housing Mix and Affordable Housing Provision Provides more detail relating to the provision of housing and the creation of mixed sustainable communities	Main aim of this policy is to deal with providing quality housing stock, including the provision of affordable housing but these are remote from the SAC/SPA.	No
CS9	Provision for Gypsies and Travellers Provides a policy framework for considering the needs of Gypsies and Travellers	The policy itself does not identify locations for sites for gypsies and travellers. As such, it is not possible to identify any impacts. These will need to be considered if sites are either identified in other Development Plan Documents or they come forward as proposals.	No
CS10	Environmental Protection This policy seeks to protect the environment from inappropriate development.	This policy actively protects the environment, specifically referencing designated sites, and seeking to limit the impact of development on water resources and flood risk.	No
CS11	Planning Obligations Provides the context within which developer contributions will be sought.	The policy will not in itself, or in combination, lead to development.	No

26. From this screening exercise, it is proposed that further assessment is required for Policies CS1 Spatial Strategy, CS2 Transport, CS4 Economic Regeneration, CS5 Town Centres, CS6 Community Facilities, CS7 Housing Distribution and Phasing and CS8 Housing Mix and Affordable Housing, to explore in more detail the potential impacts on the

Teesmouth and Cleveland Coast SPA/Ramsar site. No further assessment is required in relation to the North York Moors SPA/SAC or Castle Eden Dene SAC.

APPENDIX 1

Detailed Policy Assessment.

27. Each of the policies identified in paragraph 26. as requiring further assessment is considered below in relation to the potential resulting effects of the policy against the sensitivities of the Teesmouth and Cleveland Coast SPA/Ramsar site.

Policy and change it provides for	Locations	How the Teesmouth and Cleveland Coast SPA/Ramsar site might be affected (possible ecological outcomes)
<p>Policy CS1 Spatial Strategy Provides the overall spatial strategy for the Borough</p>	<ul style="list-style-type: none"> • Concentration of development in the Core Area on previously developed land, including North Shore, and later in the plan period, the Green Blue Heart • Support for regionally important employment clusters, including the chemical industry at Seal Sands 	<ul style="list-style-type: none"> • Improvement of soil and surface water quality through remediation of contaminated sites, with the potential for improvement in water quality of the River Tees • Increase in disturbance affecting sensitive wildlife, as a result of increasing visitor numbers, due to a growing population • Increase in air pollution • Increase in surface water run-off into the River Tees • Disturbance during construction and operation • Increase in air pollution • Increase in use of water resources • Increase in surface water run-off
<p>Policy CS2 Transport Provides framework for developing an integrated sustainable transport system within and beyond the Borough.</p>	<ul style="list-style-type: none"> • Borough-wide, largely making use of the existing infrastructure, but particular schemes include the creation of an East Billingham Transport corridor (EBPC) 	<ul style="list-style-type: none"> • Reduction in air pollution as a result of reduction in use of the private car, and increased number of journeys by public transport • Disturbance during improvements to create the EBPC, but precise proposals not yet known

APPENDIX 1

Policy and change it provides for	Locations	How the Teesmouth and Cleveland Coast SPA/Ramsar site might be affected (possible ecological outcomes)
Policy CS4 Economic Regeneration Provision for employment land in the Borough.	<ul style="list-style-type: none"> • Identifies general employment land within the urban area • Support for chemical industries at Seal Sands and former ICI, Billingham • Engineering and ancillary uses at Port Clarence and Haverton hill • Port related uses at Port Clarence and Haverton Hill • Waste management technology and energy from waste installations at Billingham and Seal Sands • Recognises the role of the river as an economic driver and potential for tourism-related development, including the International Nature Reserve at Teesmouth 	<ul style="list-style-type: none"> • Habitat loss through land take • Increase in disturbance affecting fauna • Increase in air pollution • Reduction in water quality and quantity • Decontamination of polluted land with the potential improvement in water quality
Policy CS5 Town Centres Main thrust of policy is to concentrate development in town and district centres to enhance their vitality and viability	<ul style="list-style-type: none"> • Stockton, Billingham, Thornaby and Yarm are regarded as the key retail centres 	<ul style="list-style-type: none"> • Increase in air pollution, although this could be offset by increased accessibility to facilities reducing the need for car travel
Policy CS6 Community Facilities Provision of facilities, including open space and recreation, to meet the needs of the community	<ul style="list-style-type: none"> • Development of uses within the river corridor and the Green Blue Heart • Creation of network of diverse, connected green corridors 	<ul style="list-style-type: none"> • Increase in water pollution • Increase in use of water resources
Policy CS7 Housing Distribution and Phasing Sets out the quantity of housing to be provided in key locations	<ul style="list-style-type: none"> • Key regeneration sites including North Shore and Boathouse Lane 	<ul style="list-style-type: none"> • Improvement of soil and surface water quality through remediation of contaminated sites, with the potential for improvement in water quality of the River Tees • Increase in disturbance affecting sensitive wildlife, as a result of increasing visitor numbers, due to a growing population • Increase in air pollution • Increase in surface water run-off into the River Tees
Policy CS8 Housing Mix and Affordable Housing Provision	<ul style="list-style-type: none"> • Identifies potential use of some Council land, location as yet unidentified. 	<ul style="list-style-type: none"> • Increase in air pollution and use of water resources.

Conclusions

27. All the policies identified for further assessment derive from Policy CS1 Spatial Strategy, underpinned by Policy CS2 Transport, and supported by Policy CS3 Sustainable Living. It is not considered necessary to amend all of the policies referred to in paragraph 26. The Core Strategy should be read as a whole, as none can be implemented in isolation. From the assessment, there are three key areas which could give rise to potential impacts:
- Development along the River Tees, reflecting the Preferred Option of concentrating growth and development in the Core Area.
These impacts can be attributed to the following:
 - a) Changes to the hydrology of the River Tees upstream of the SPA/Ramsar site, which could affect the hydrology of the river and consequently impact on the feeding activities of the bird life
 - b) Recreational activities associated with new developments (such as watersports) along and adjacent to the River Tees could cause disturbance.
 - Expansion of the chemical clusters and heavy engineering activities at Billingham and Seal Sands
These impacts can be attributed to the following:
 - a) Increase in disturbance through noise
 - b) Any indirect effects of an increase in air pollution.
 - Development of an East Billingham Transport Corridor to improve accessibility
 - a) Increase in disturbance through noise
 - b) Any indirect effects of an increase in air pollution.
28. At this point in time, it is not possible to quantify the precise levels, types, phasing and location of development. This will be the subject of more detailed plans and proposals. However, it is best to take a precautionary approach.
28. In view of the potential impact of CS1 on the SPA/Ramsar site, particularly in relation to further development of the chemical industry as part of the regeneration of the Borough, it is suggested that Policy CS1 is amended to ensure that the biodiversity associated with the SPA/Ramsar site is protected, as follows:
- In taking forward regeneration proposals along the river corridor and at Seal Sands, it will be necessary to ensure that there is no resulting adverse impact on the ecology necessary to maintain the Teesmouth and Cleveland Coast SPA/Ramsar site in a favourable condition.***
- .29. In view of the potential impact of CS2 on the SPA/Ramsar site, it is suggested that the policy be amended to ensure that there are no adverse impacts from this policy, as follows:

In implementing transport proposals, it will be necessary to ensure that there is no resulting adverse impact on the ecology necessary to maintain the T+CC SPA/Ramsar site in a favourable condition.

30. It will be necessary for subsequent policies included within the Regeneration DPD to be rigorously assessed to identify potential impacts in greater detail.
31. Further detailed policies on the protection of biodiversity sites will be contained in the Environment Development Plan Document.

Analysis of the Core Strategy Preferred Options in combination with other plans and projects.

Plan	Proposals	In Combination Effect
Hartlepool Local Plan	Employment policies and proposals have potential to affect the T+CC SPA/Ramsar site. Other development is focused away from the T+CC SPA/Ramsar site. Policy to protect international nature conservation sites is included and will ensure integrity of T+CC SPA/Ramsar site is maintained.	No
Redcar and Cleveland LDF Core Strategy	This, together with Development Policies, was adopted in July 2007. The Core Strategy was subject to a rigorous assessment under the Habitats Regulations. A number of changes were made to the policies to incorporate mitigation measures to ensure that the integrity of the designated sites is maintained.	No
Middlesbrough LDF Core Strategy	This plan has been submitted to the Secretary of State, and has been the subject of an Appropriate Assessment. Amendments have been made to both spatial objectives and policies, taking a precautionary approach through incorporating safeguards into the policy framework.	No

Plan	Proposals	In Combination Effect
Hambleton LDF Core Strategy	This plan has been adopted and has been assessed through the Sustainability Appraisal/Strategic Environmental Assessment process. The spatial strategy identifies an area of restraint for residential and employment development in the north of the district, extending south from the boundary with the Tees Valley south to near Northallerton. The focus for development is away from both Stockton and the North York Moors SAC/SPA.	No
Sedgefield LFD Core Strategy	This is currently out for consultation on Preferred Options, and the subject of a screening report. This concluded that there are no likely significant effects of the Core Strategy in combination with other plans and trends on European Sites after avoidance measures have been implemented.	No
Darlington Local Plan	Most development proposals are in and around Darlington itself, with the exception of employment land at Darlington Tees Valley Airport. However, development here is remote from the T+CC SPA/Ramsar site and the North York Moors SPA/SAC.	No
<p>Other Stockton Borough Council Strategies and Plans</p> <p>Sustainable Community Strategy Local Transport Plan Climate Change Action Plan Regeneration Strategy Housing Strategy</p>	The LDF is the vehicle for delivering the spatial aspects of these strategies. Any proposals contained in these strategies that would either impact or maintain the integrity of protected sites have been incorporated into the Core Strategy.	No

Consideration of “in combination” effects.

32. A number of plans and policies contained within the plans of neighbouring authorities have the potential, either alone or “in combination”, to have an impact on designated sites. This is particular for the proposals within the authorities of Hartlepool, Middlesbrough, and Redcar and Cleveland. Proposals for employment uses within the

Teesmouth area could potentially have an impact upon the integrity of the Teesmouth and Cleveland Coast SPA/Ramsar site. However, all plans contain mitigating measures to ensure that the integrity of the site is maintained. This should prevent proposals coming forward that would be to the detriment of the designated site.

APPENDIX 1

Appendix 1: Favourable conditions table – Teesmouth and Cleveland Coast SPA/Ramsar site

Feature	Sub-Feature	Attribute	Measure	Target	Comments
Internationally important populations of regularly occurring Annex 1 of the Birds' Directive bird species (little tern, sandwich tern)		Disturbance	Reduction or displacement of birds.	No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline, subject to natural change.	Significant disturbance attributable to human activities can result in increased energy expenditure (light and/or reduced food intake, displacement to areas of poorer feeding conditions).
		Extent and distribution of habitat	Area (ha) measured once during reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	These habitats provide both breeding and roosting sites for terns.
	Sand and shingle	Vegetation characteristics	Predominantly open ground with sparse/short vegetation and bare surfaces (colonial nesting).	Vegetation height and density at nesting sites should not deviate significantly from an established baseline, subject to natural change.	Vegetation cover less than 10% required throughout the areas used for nesting by little tern.
	Intertidal sand and mudflats	Absence of obstructions to bird sight lines.	Openness of terrain unrestricted by obstructions.	No increase in obstructions to existing bird sight lines, subject to natural change.	Sandwich terns require views more than 200m to allow early detection of predators at roost sites.
	Shallow coastal waters	Food availability	Presence and abundances of marine fish, crustaceans, worms and molluscs. Measured periodically (frequency to be determined).	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Crustacea, annelids, sand eel, and sprats are important for feeding little and sandwich terns.
Internationally important populations of regularly occurring migratory		Disturbance	Reduction or displacement of birds.	No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline, subject to natural change.	Significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure

APPENDIX 1

Feature	Sub-Feature	Attribute	Measure	Target	Comments
species (knot (winter), redshank (autumn)) and of the internationally important assemblage of waterbirds		Extent and distribution of habitat	Area (ha) measured once during reporting cycle.	No decrease in extent from an established baseline, subject to natural change.	Rocky shores have particular significance for feeding knot at Teesmouth. Existing saltmarsh habitats are mere remnants of those of the original Tees Estuary.
	Rocky shores	Absence of obstructions to bird sight lines.	Openness of terrain unrestricted by obstructions.	No increase in obstructions to existing bird sight lines, subject to natural change.	Waders require views over 200m to allow early detection of predators when feeding and roosting during the non-breeding season (at Teesmouth July-March inclusive)
		Food availability	Presence and abundances of marine fish, crustaceans, worms and molluscs. Measured periodically (frequency to be determined).	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Mytilus spat are important prey for Knot.
	Intertidal sand and mudflats	Absence of obstructions to bird sight lines.	Openness of terrain unrestricted by obstructions.	No increase in obstructions to existing bird sight lines, subject to natural change.	Waders require views over 200m to allow early detection of predators when feeding and roosting
		Food availability	Presence and abundances of marine fish, crustaceans, worms and molluscs. Measured periodically (frequency to be determined).	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Prey items include Hydrobia, Macoma, Corophium, Nereis (redshank and shelduck), Macoma, Mytilus/Cerastoderma spat, Hydrobia (knot), Bathyporeia, Nerine, Mytilus, wrack flies, sandhoppers (sanderling).
	Saltmarsh	Absence of obstructions to bird sight lines.	Openness of terrain unrestricted by obstructions.	No increase in obstructions to existing bird sight lines, subject to natural change.	Waders require views over 200m to allow early detection of predators when feeding and roosting

APPENDIX 1

Feature	Sub-Feature	Attribute	Measure	Target	Comments
		Vegetation characteristics	Open, short vegetation or bare ground predominating (feeding and roosting)	Vegetation height throughout areas used for roosting should not deviate significantly from an established baseline, subject to natural change.	Vegetation of less than 10cm is required throughout area used for roosting.
		Food availability	Presence and abundance of aquatic invertebrates. Measured periodically (frequency to be determined).	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Hydrobia, Corophium are important for redshank, shelduck and teal. These habitats provide supplementary feeding opportunities especially at high water.
			Presence and abundance of seed-bearing plants. Measured periodically (frequency to be determined).	Presence and abundance of prey species should not deviate significantly from an established baseline, subject to natural change.	Salicornia and Atriplex are important for teal during the non-breeding season (November – March), while Salicornia seeds may be taken by Shelduck.
<p>NB Extreme events (such as storms reducing or increasing salinities, exceptionally cold winters or warm summers) also need to be recorded as they may be critical in influencing ecological issues on the Teesmouth and Cleveland coast and may well be missed by routine monitoring.</p>					

APPENDIX 1

Appendix 2 Favourable conditions table – North York Moors SAC/SPA site.

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
Upland Heath	European dry heath	Extent	Total area mapped in relation to baseline	No reduction in area and any consequent fragmentation	Small losses related to management may be acceptable (eg - footpaths).
		Dwarf shrub cover	% of dwarf shrub cover	Minimum of 75% cover of dwarf shrubs	Excluding recently burnt stands. Includes all H10 (<i>Calluna vulgaris</i> - <i>Erica cinerea</i> heath) and H12 (<i>Calluna vulgaris</i> – <i>Vaccinium myrtillus</i> heath)
		Dwarf shrub diversity	Number of different species of dwarf shrubs and frequency in sward	At least two species of dwarf shrub species should be widespread and frequent in the sward	Aim is for diversity of shrubs especially along valleys and steeper slopes, but also on some of the flatter land. Merlin are believed to favour the upper parts of the catchment/ valleys so taller heather here would be preferable
		Age structure	Presence of age classes of <i>Calluna</i>	All age classes present with at least 25% of the management unit in the late mature/degenerate age class or excluded from the burning rotation.	Stand which are never burnt should be present on level or gently sloping ground , not entirely confined to steep slopes.
		Grazing impact	Indicators of light grazing	A maximum of 5% of the grazing unit may show signs of current moderate or heavy grazing. Foddering sites should be no greater in their immediate impact of 30 metres of heather lost to grass.	See guidance notes for indicators.
Upland Heath	Northern Atlantic wet dwarf shrub heath	Extent	Total area mapped in relation to baseline	No reduction in area and any consequent fragmentation	Small losses related to management may be acceptable (eg - footpaths).
		Dwarf shrub cover	%age of dwarf shrub cover	Minimum of 75% cover of dwarf shrubs	

APPENDIX 1

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
		Dwarf shrub diversity	Number of different species of dwarf shrubs and frequency in sward	At least two species of dwarf shrub species should be widespread and frequent in the sward	Much of the dry and wet heath forms an intimate mosaic which is currently managed as one by moorland owner/ occupiers. It is very difficult delineating distinct zones of each habitat type on the moors.
		Bryophyte/ lichen abundance	Frequency of bryophytes and lichens in the sward	Bryophytes (excluding Polytrichum spp. and/or Campylopus spp.) and/or Cladonia spp. Lichens should be occasional to frequent and forming patches below, or in more open swards, between the dwarf shrubs	Bryophyte levels have been found to be only occasional in some areas.
		Age structure	Presence of age classes of Calluna	All age classes present with at least 33% of the management unit in the late mature/degenerate age class or excluded from the burning cycle.	Stand which are never burnt should be present on level or gently sloping ground , not entirely confined to steep slopes.
Upland bog	Blanket and upland raised mire	Extent	Total area mapped in relation to baseline.	No reduction in area and any consequent fragmentation	Small losses/ flux in surface vegetation may be acceptable, esp. for management (eg- footpaths)
		Bryophyte abundance	Bryophyte cover especially Sphagnum spp	Bryophytes (excluding Polytrichum spp., Campylopus spp. and Racomitrium lanuginosum on bare ground) should be abundant and must include Sphagnum spp	Sphagnum spp must be both frequent and widespread in the stand and restricted to hollows, forming at least occasional lawns or hummocks. Pleurocarpous mosses may make up a significant proportion of the bryophyte layer in the Moors. Reference level of bryophytes needs to be determined.
		Dwarf shrub cover	%age of dwarf shrub cover	Cover of dwarf shrubs must be greater than 33%	Less than 33% cover is acceptable in wetter areas where Sphagnum spp are abundant and forming lawns although this wetness is not a general feature of the Moors.

APPENDIX 1

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
		Dwarf shrub diversity	Number of different species and frequent within sward	At least two species of dwarf shrub species should be widespread and frequent in the sward	
		Graminoid cover	% cover of grasses and related species	Total cover of graminoids/ Eriophorum should not exceed 50% unless Sphagnum spp are abundant/co-dominant and forming lawns below the grasslands ie in waterlogged conditions	Eriophorum tends to be favoured over dwarf shrubs where burning is relatively intense.
		Extent of bare ground covered by algal mats	Amount of bare ground or ground covered by algal mats	Little or no ground, or bare ground carpeted by Polytrichum spp, Campylopus spp crust forming lichens or algal mats	Bare ground present rather than eroded surfaces. Some areas have remained as bare ground since previous severe fires, some dating back to the 1930's.
		Erosion features associated with human impacts	Presence of erosion features	No artificial drains/ grips or erosion associated with human impacts eg fires, vehicles, livestock grazing, recreational activities	See notes. Except very localised - eg - around tracks, footpaths, grouse butts, etc.
		Active peat extraction	Presence of active peat extraction	Large scale (commercial) peat extraction absent. Some small-scale hand-cut peat. turve cutting may be acceptable provided that it does not make up more than 2% of the moorland area. Acceptable levels to be defined.	Many areas which have been cut in the past have now revegetated with good mire vegetation which meets the other attributes for favourable vegetation. Many farms retain their rights to cut peat/ turves. The numbers carrying out this activity is a key element to acceptability. Recovery times are thought to be 20 years plus.

APPENDIX 1

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
		Grazing impact	Indicators of light grazing	A maximum of 5% of the grazing unit may show signs of current moderate or heavy grazing	See guidance notes

APPENDIX 1

SPA Features

Operational feature	Criteria feature	Attribute	Measure	Target	Comments	
Moorland (For Birds)	Annex 1 and migratory populations of European Importance: golden plover, merlin	Disturbance	Reduction or displacement of birds, measured periodically (frequency to be determined).	No significant displacement of birds attributable to human disturbance in relation to reference level.	Potential sources of disturbance include heather burning, heather cutting, vehicles, stock, dogs and walkers, especially from April to mid-July. Disturbance caused by predation and the effects on the qualifying bird species is an area that requires further assessment. Reference level to be determined. Methodology for assessing target to be determined.	
		Extent and distribution of habitat	Area (ha), measured periodically (frequency to be determined).	No significant decrease from reference level.	Reference level to be determined. Methodology for assessing target to be determined.	
	Annex 1 and migratory populations of European Importance: golden plover	Landscape	Open terrain relatively free of obstructions (feeding, anti-predator, roosting), measured periodically (frequency to be determined).	No significant reduction in view-lines in feeding and roosting areas.	Golden Plover require views over 200m At least 80% of current moorland area (and all flatter plateaux) open, e.g. without new walls or trees. New fences only where essential for conservation land management. Some loss of view, to trees and shrubs, acceptable in low density breeding areas to benefit other bird and habitat interests. Methodology for assessing target to be determined.	
	<u>Annex 1 populations of European Importance:</u> merlin	Food Availability	Abundance of birds, day flying moths and mammals, measured periodically (frequency to be determined).	No significant reduction in presence and abundance of prey species in relation to reference level.	Small birds - pipits to waders and moths are important for Merlin. Effects of bracken spraying on meadow pipit abundance not fully assessed but needs to be quantified. Reference level to be determined. Methodology for assessing target to be determined. Data from Merlin Group suggests that male and female may hunt in different areas and on different types of prey during the breeding (incubation period) season, the female taking larger prey, more widely afield, post hatching, but this has yet to be confirmed.	
	Moorland	Annex 1 and	Vegetation	Extent and proportions of	xxx% of moorland with short	Using SAC targets, at least 75% of the shorter

APPENDIX 1

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
[For Birds]	migratory populations of European Importance: golden plover, merlin	Characteristics	short, medium and tall vegetation, measured periodically (frequency to be determined).	vegetation with patches of taller vegetation for nesting (short grassland, grasslands with bracken, tall heather, low trees/scrub) for merlin. Once a reference level has been established then there should be no significant reduction in extent from that level.	<p>vegetation currently used by golden plovers can be retained. The requirement for 25% taller vegetation could be met away from high density breeding areas. Scattered tree/shrub is acceptable to meet other SPA and SAC objectives.</p> <p>Vegetation height require for golden plover: mix of short (feeding) (less than 5cm) and patches of taller (up to 15 cm for nesting) during the breeding season. Burnt are favoured over cut area. Nesting appears to be largely just below the plateau between catchments, on the tops of moors and centred on blanket bog areas.</p> <p>Burning management on grouse moors, which currently produces much of the short vegetation providing suitable habitat for golden plover, is considered unlikely to be compatible with achieving favourable condition on blanket bog or for other interest features of the SPA. Retention of small areas of acidic grassland can provide valuable nesting habitat, compatible with SAC targets (eg 5% of area) as currently defined.</p> <p>Vegetation height require for merlin: a ground layer of heather at > 20cm height with >80% heather cover, in a minimum of 15m x 15m heather 'blocks' and with burns (for feeding/plucking) within a minimum of 5 metres of the nest site (average 10 metres). Heather in late mature to degenerate stages of growth. Nest site preference is generally on the level up to a 10 degree slope (though 20-30 degrees are recorded). No preference for aspect has been recorded. There is no evidence of tree nesting in the Moors despite intense ornithological work. All gills with some trees and shrub (variable densities). Some patches of trees at moor boundary. Aim to increase areas of tall heather in locations suitable</p>

APPENDIX 1

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
					<p>for merlin nesting (eg tops of catchments). Methodology for assessing target to be determined. Reference levels (i.e. proportion of moorland with appropriate vegetation heights) to be determined.</p> <p>xxx% of moorland with short vegetation with patches of taller vegetation for nesting (short grassland, grasslands with bracken, burnt heather) for golden plover.</p> <p>xxx% of moorland with short vegetation for feeding and patches of longer vegetation for nesting for curlew.</p> <p>xxx% of moorland with medium to tall ground vegetation plus scattered (tall heather, low trees/scrub) for Merlin.</p> <p>xxx% of moorland with tall heather/young forestry (nesting and roosting), plus grasslands, bracken or low trees/scrub (feeding) for Hen Harrier</p>
Moorland and adjacent wet pastures [For Birds]	Annex 1 and migratory populations of European Importance: golden plover	Food Availability	Abundance of soil and ground surface invertebrates, measured periodically (frequency to be determined).	No significant reduction in presence and abundance of food species in relation to reference level.	<p>Earthworm, leatherjackets, beetles, spiders are important for Golden plover.</p> <p>Maintain or increase existing areas of grassland (within 10-15km) without pesticide use (effective field size should be at least 10ha).</p> <p>Although important to the condition of the site, it may not prove possible to obtain a meaningful measure of prey availability by directly sampling invertebrate prey populations.</p> <p>Reference level to be determined. Methodology for assessing target to be determined.</p>

APPENDIX 1

Appendix 3 Castle Eden Dene SAC

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
Semi-natural woodland	Taxus baccata woodland (National Vegetation Classification W13)	Area	Extent/location of stands	<p>No loss of ancient semi-natural stands</p> <p>At least current area of recent semi-natural stands maintained, although their location may alter.</p> <p>At least the area of ancient woodland retained (Details of stands contained in National Nature Reserve plan)</p>	<p>Stand loss due to natural processes e.g. in minimum intervention stands may be acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact.</p> <p>20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland.</p> <p>Area and location of stands may be assessed remotely or by site visit.</p>
		Natural processes and structural development	Age/size class variation within and between stands; presence of open space and old trees; dead wood lying on the ground; standing dead trees	<p>At least the current level of structural diversity maintained. (See NNR plan for current state)</p> <p>Canopy cover present over 30-90 % of stand area</p> <p>A minimum of 3 fallen lying trees less than 20 cm diameter per ha. At least 20 trees per ha left to grow on to become veterans⁷.</p>	<p>Any changes leading to exceeding these limits due to natural processes are likely to be acceptable. There is generally a good structural variety in these stands.</p> <p>The ground flora and shrub layer are frequently totally absent over most of the stand, so no target is set for them.</p> <p>See JNCC guidance note for the sorts of age structure likely to be appropriate for different types of management regime. Compared to other woodland types the degree of variation in structure may be very low.</p> <p>Much of the interest in yew woods is in the very old trees - hence a higher figure is set than for other types for trees to grow on to become veterans.</p> <p>Assess this attribute by field survey.</p>

⁷ Veteran trees are trees which, because of their great age, size and condition, are of exceptional value culturally, in the landscape or for wildlife.

APPENDIX 1

Operational feature	Criteria feature	Attribute	Measure	Target	Comments
		Regeneration potential	Successful establishment of young stems in gaps or on the edge of a stand	<p>Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 20 yr period (or equivalent regrowth from coppice stumps).</p> <p>No planting except where necessary to restore former plantation areas.</p>	<p>A proportion of gaps at any one time may develop into permanent open space; equally some current permanent open space/glades may in time regenerate to closed canopy.</p> <p>Regeneration may often occur on the edges of woods rather than in gaps within it.</p> <p>See Joint Nature Conservation Council Guidance Note on likely desirable levels of regeneration. In yew woods the proportion of gaps is frequently lower than for other woodland types and the long-life span of the tree means that it is almost impossible to give a minimum level for regeneration.</p> <p>Assess this attribute by walking through the wood in spring/summer.</p>
		Composition	<p>Cover of native versus non-native species (all layers)</p> <p>Death, destruction or replacement of native woodland species through effects of non-native fauna or external unnatural factors</p>	<p>At least the current level of site-native species maintained. (Details of current composition given in management plan.)</p> <p>At least 90% of cover in any one layer of site-native or acceptable naturalised species.</p> <p>At least 50% of canopy or understorey comprised of yew</p> <p>Death, destruction or replacement of native woodland species through effects of introduced fauna or</p>	<p>In sites where there might be uncertainty as to what counts as site-native or as an acceptable naturalised species this must be made clear.</p> <p>Where cover in any one layer is less than 100% then the 90% target applies to the area actually covered by that layer.</p> <p>Factors leading to the death or replacement of woodland species could include pollution, including eutrophication from adjacent farmland; new diseases .</p> <p>Damage to species by non-native species that does not lead to their death or replacement by non woodland species (eg damage from squirrels to trees that none-the-less survive) is not necessarily unacceptable in nature conservation terms.</p> <p>Excessive browsing/grazing by even native ungulates may be considered an unnatural external factor where it leads to undesirable shifts in the composition/structure of the stand, although this may be picked up by attributes 2 or 5 anyway.</p>

APPENDIX 1

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				other external unnatural factors not more than 10% by number or area in a five year period.	Assess this attribute by a walk through the site.
		Species, habitats, structures characteristic of the site.	<p>Distinctive and desirable elements for a given site</p> <p>Patches of associated habitats and transitions eg to ash woodland, or to species-rich grassland</p>	<p>Distinctive elements maintained at current levels and in current locations (where appropriate).</p> <p>Transitions to other woodland types (ash-elm, acid oak) and open space maintained in extent and where appropriate location. (See NNR plan for current state).</p>	<p>Changes leading to these targets not being met may be acceptable where this is due to natural processes.</p> <p>Distinctive elements and patches should be marked on maps for ease of checking in the field wherever possible.</p> <p>If there are species groups/assemblages that cannot be assessed directly on a general site visit then surrogate features should be given where possible, eg dead wood concentrations for associated invertebrates.</p>