Appropriate Assessment Screening of South Lakeland District Council's Core Strategy

Prepared for:

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SUMMARY

Treweek Environmental Consultants (TEC) was appointed by South Lakeland District Council in March 2007 to undertake the Screening Stage of an Appropriate Assessment (AA) for the South Lakeland Core Strategy.

'Appropriate Assessment (AA)' is required under the EU Habitats Directive (92/43/EEC) for any proposed plan or project which may have a significant effect on one or more European sites and which is not necessary for the management of those sites. The purpose of AA is to determine whether or not significant effects are likely and to suggest ways in which they could be avoided.

This report summarises the results of the Screening process, carried out to establish whether the Core Strategy might have any 'Likely Significant Effects' (LSEs) on any European site and therefore to determine whether a full AA would be required for the Plan.

The assessment is of the Core Strategy Preferred Options, which show where the preferred approach to the strategy but it is not the final strategy. Following public consultation and taking account of comments and other evidence including AA we will prepare the final Core Strategy.

Possible effects of the South Lakeland Core Strategy were reviewed for the following European Sites:

SAC	**SPA**	**Ramsar Sites**
Duddon Mosses SAC	Morecambe Bay SPA	Duddon Estuary Ramsar Site
Ingleborough Complex SAC	Leighton Moss SPA	Leighton Moss Ramsar Site
Morecambe Bay Pavements SAC	Duddon Estuary SPA	Morecambe Bay Ramsar Site
Morecambe Bay SAC		
North Pennine Dales Meadows SAC		
River Kent SAC		
Roudsea Wood & Mosses SAC		
Witherslack Mosses SAC		

Likely Significant Effects (LSEs) were identified for

- Morecambe Bay SAC
- Morecambe Bay SPA
- Morecambe Bay Ramsar Site
- Morecambe Bay Pavements SAC
- River Kent SAC

For these sites further investigation is recommended as part of subsequent stages of the AA. Preferred Options representing potential sources of LSEs are summarised in the table below.

POTENTIAL ECOLOGICAL IMPACT	PREFERRED OPTION NUMBERS	SITES POTENTIALLY AFFECTED
Reduced water quality (through increase in sewage, surface water runoff and pollution)	PO3, PO4, PO11	River Kent SAC
Reduction in water supply or levels at sites	PO11	River Kent SAC
Introduction of invasive non native species and crayfish plague	PO11	River Kent SAC
Increase in visitor pressure leading to erosion and disturbance.	PO1, PO3, PO4, PO5, PO7, PO11, PO12, PO20	Morecambe Bay SAC/ SPA/ Ramsar, Morecambe Bay Pavements SAC

Development in Kendal set out in PO3 and PO4 and especially from the Kendal Canal head regeneration scheme (supported in principle through PO11) has implications for the River Kent SAC. LSEs associated with these policies include the potential introduction of signal crayfish and associated plague from the Lancaster Canal to the River Kent, the deterioration of water quality from additional discharge and surface water runoff and changes to the flow regime.

Increase in visitor pressure both from an increase in local residents and an increase in tourism poses risks in terms of damage to sites and disturbance to protected species at Morecambe Bay SAC/ SPA/ Ramsar and Morecambe Bay Pavements SAC. A number of policies contribute by cumulatively increase the potential for a likely significant effect.

For the other sites, no LSEs were identified, due to the fact that their conservation interest depends primarily on management at site level, their distance from the plan area or on factors which would not be affected by the proposed Core Strategy.

Contents

1 Introduction

This report presents the results of the screening stage of the Appropriate Assessment (AA) process for the South Lakeland Core Strategy Preferred Options Paper (January 2008) This entails a review of the proposed Plan to identify any 'Likely Significant Effects (LSEs) on the conservation objectives of European sites. If, following screening, LSEs are anticipated, subsequent stages of AA would consider these in more detail and determine whether alternative measures could be adopted. If there are no viable alternatives, a Plan can only be implemented if there are 'imperative reasons of overriding public interest'.

1.1 The Structure of this Report

This chapter (Chapter 1) explains the requirement for AA for the South Lakeland Core Strategy, summarises the AA process and explains the purpose of screening in more detail.

Chapter 2 identifies the European Sites, which could be affected.

Chapter 3 summarises the plan to be assessed: the South Lakeland Core Strategy. It presents the results from screening of preferred options and identifies possible effects on European Sites.

Chapter 4 examines the effect of other plans, programmes and projects

Chapter 5 identifies and reviews likely significant effects on European Sites and draws conclusions about which sites should be subject to more detailed assessment.

A Screening matrix is provided as Appendix 1.

The Preferred Options analysis is included as Appendix 2

Other plans and projects that may have an 'in combination' effect are analysed in detail in Appendix 3.

1.2 European Sites

European sites are Special Protection Areas (SPAs) and Special Areas of Conservation (SACs). Planning Policy Statement 9, Biodiversity and Geological Conservation (PPS9) (ODPM, 2005), advises that proposed sites awaiting approval – potential SPAs (pSPAs) and candidate SACs (cSACs) should be treated in the same way as those already classified and approved.

PPS9 also recommends that Ramsar sites should be afforded the same level of consideration as SPAs and SACs, in policy if not in law. All SPAs, (non-marine) SACs and Ramsar sites overlap to some degree with Sites of Special Scientific Interest (SSSIs). AA relates specifically and exclusively to the qualifying interests of European sites and not to the broader conservation interests or requirements under other SSSIs. However, the latter should be factored into plan-making as part of the SEA / SA process and the planning authority's duty under section 28G of the Wildlife and Countryside Act 1981 to conserve and enhance SSSIs in carrying out their functions.

1.3 The requirement for Appropriate Assessment of the Core Strategy

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna – the 'Habitats Directive' – provides legal protection for habitats and species of European importance.

Schedule 1 of the Conservation (Natural Habitats, &c) (Amendment) (England and Wales) Regulations 2007 inserts a new Part IVA into the Conservation (Habitats, &c) Regulations 1994 and transposes into English Law the requirement to carry out Appropriate Assessment for land use plans. Article 85B of the Conservation (Natural Habitats, &c) (Amendment) Regulations 2007 sets out that "the plan-making authority for that plan shall, before the plan is given effect, make an appropriate assessment for the implications for the site in view of that site's conservation objectives".

Article 85B also sets out inter alia that "in the light of the conclusions of the assessment, and subject to regulation 85C (considerations of overriding public interest) the competent authority shall give effect to the land use plan only after having ascertained that it will not adversely affect the integrity of the European site".

1.4 The AA Process

The purpose of AA is to ensure that significant effects on European sites are avoided. The assessment is carried out solely in respect of the 'conservation objectives' for which a European site has been designated and its integrity in relation to its ability to support those objectives.

Figure 1 summarises the overall AA process. This report summarises the results of Stage 1.

Stage 1: screening

The purpose of screening (this stage) is to identify whether any European site (whether within South Lakeland or in neighbouring authorities) might be exposed to Likely Significant Effects (LSEs) and therefore to determine whether further stages of AA would be required.

However it is important to consider the possibility of impacts for any European site which might be affected, whatever its location, given the activities included in the plan and their range of influence. This may extend some distance from the area within the immediate influence of a plan.

Sites which could possibly be affected were identified and information obtained about designated interest features and associated conservation objectives, largely using information contained on the JNCC website. These were reviewed against the Core Strategy Preferred Options to identify any policies, activities or aspects that might affect interest features, or the ability to achieve favourable condition. The results are summarised in Appendix 1. Other plans and projects that might contribute to in-combination effects were also identified.

1.5 Consultation

This report is intended to provide the information required for the South Lakeland District Council to determine whether further stages of Appropriate Assessment are required for the Core Strategy. Consultation has been carried out with Natural England (as the statutory nature conservation body) to confirm sites and issues to be addressed and to review the methodology and approach. The report will also be issued to the Environment Agency for their comments.

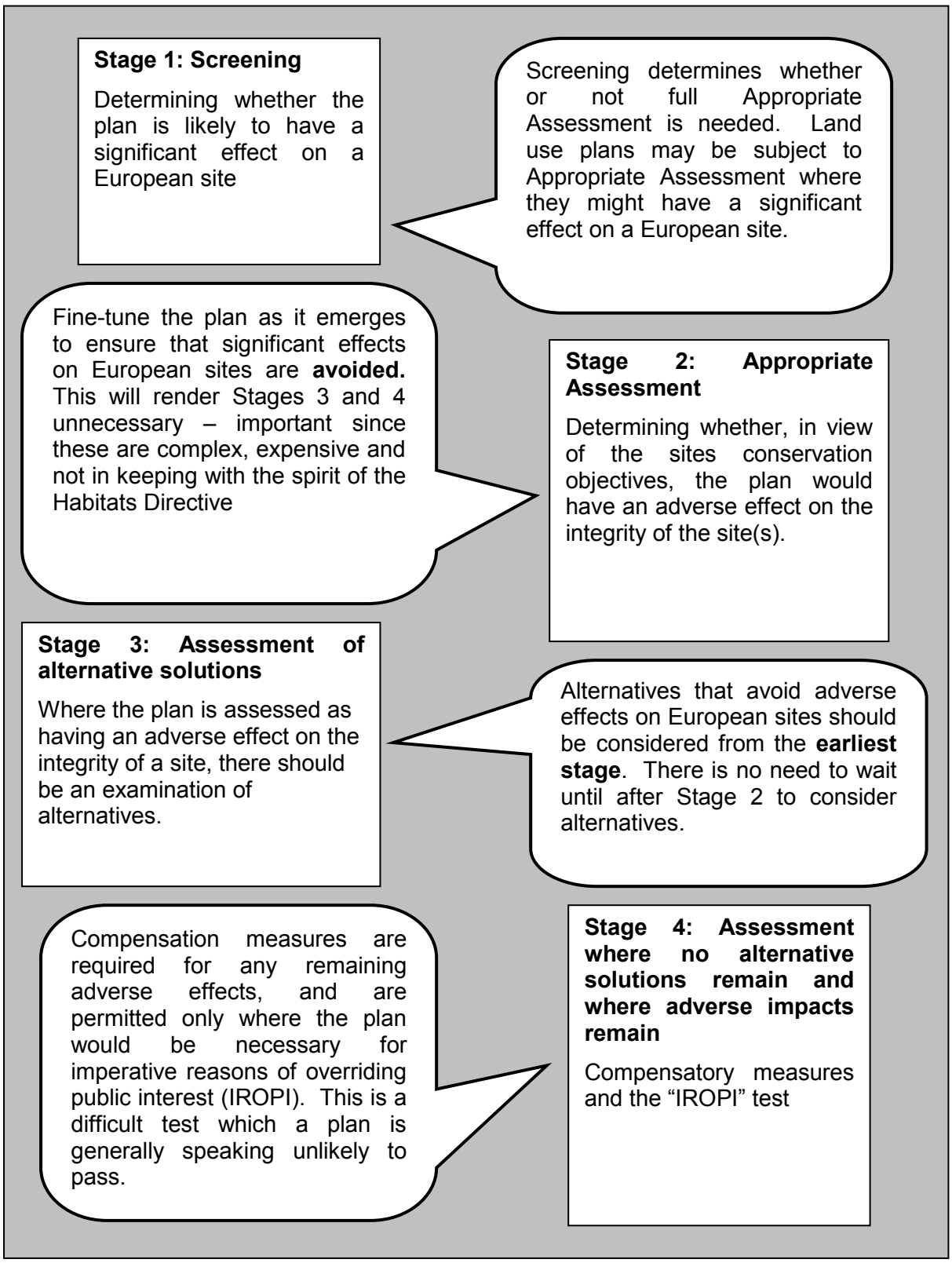

Figure 1 Stages in the Appropriate Assessment Process

2 European sites potentially affected by the Core Strategy

Initial screening discussions were undertaken with Natural England[1] to decide which European sites might possibly be affected by the South Lakeland Core Strategy 'alone or in combination'. Fourteen European sites were identified that might possibly be affected by the South Lakeland Core Strategy and should be subject to Appropriate Assessment Screening. Nine of these sites are found within or partly within the Authority's boundaries. These are:

- Duddon Mosses SAC
- Morecambe Bay SAC
- Morecambe Bay Pavements SAC
- River Kent SAC
- Roudsea Wood & Mosses SAC
- Morecambe Bay SPA
- Duddon Estuary SPA
- Duddon Estuary Ramsar Site
- Morecambe Bay Ramsar Site

Five of these are outside the Authority boundary:

- Ingleborough Complex SAC
- North Pennine Dales Meadows SAC
- Witherslack Mosses SAC
- Leighton Moss SPA
- Leighton Moss Ramsar Site

Site descriptions are set out in Appendix 1. This includes the qualifying features, conservation objectives and requirements to maintain the favourable condition status of the European sites.

Table 1 considers these factors and the reasons for which the sites were designated as well as examining the environmental conditions necessary to maintain site integrity.

Table 1 – Requirements to maintain site integrity

Requirement	SACs	SPAs and Ramsar Sites
Appropriate management including: grazing, mowing, vegetation clearance, presence or absence of burning	North Pennine Dales Meadows, Morecambe Bay Pavements, Witherslack Mosses, Roudsea Wood & Mosses, Duddon Mosses, Ingleborough Complex, Morecambe Bay	Morecambe Bay SPA/ Ramsar, Duddon Estuary SPA, Leighton Moss SPA/Ramsar

[1] Initial screening meeting between SLDC, TEC and NE undertaken on the 13th June 2007. E-mail correspondence following this meeting confirmed the list of sites to be addressed.

Requirement	SACs	SPAs and Ramsar Sites
at an appropriate level, low nutrient input		
Adequate water supply (including effects on local hydrology)	River Kent, Witherslack Mosses (drainage issues), Ingleborough Complex (drainage issues), Roudsea Wood & Mosses, Duddon Mosses	Leighton Moss SPA
Good water quality	River Kent, Morecambe Bay	Leighton Moss SPA / Ramsar
Limited Air pollution	Morecambe Bay Pavements, Roudsea Wood & Mosses, Duddon Mosses, Witherslack Mosses, Ingleborough Complex, North Pennine Dales Meadows	
No change in land use, prevention of habitat loss or fragmentation	North Pennine Dales Meadows, Morecambe Bay	Morecambe Bay SPA, Duddon Estuary SPA, Leighton Moss SPA/Ramsar
The absence of invasive non-native species	River Kent (particularly signal crayfish and individuals infected with crayfish plague), Morecambe Bay	Morecambe Bay SPA
Limited disturbance and erosion from tourism and recreation	Morecambe Bay	Morecambe Bay SPA/ Ramsar, Duddon Estuary SPA/ Ramsar
Other highly site-specific issues	Morecambe Bay – impacts from commercial fisheries, aggregate extraction, gas exploration, coastal and flood defences. River Kent - sheep dip pollution having adverse effects on white-clawed crayfish. No in-channel work between June and September to avoid the salmonid spawning period Ingleborough Complex – damage to scree from human activities, e.g. climbing.	Morecambe Bay SPA/Ramsar -changes in thermal regime could adversely effect coastal lagoon feature, also changes in turbidity, e.g. from commercial dredging. Duddon Estuary SPA/Ramsar - introduction of microbial pathogens via sewage outfalls, crude sewage discharges at Broughton in Furness and Barrow in Furness.

3 South Lakeland Core Strategy

Box 1 sets out the Spatial Vision for South Lakeland in 2025. In order to implement and deliver the LDF's vision, the following set of strategic objectives is set out in the Core Strategy Preferred Options:

1. To meet the housing need of all the community by providing a range of housing including affordable and special needs housing
2. To support the growth of the local economy and rural diversification
3. To ensure that all development is sustainable and making prudent use of resources
4. To conserve and enhance the diverse character and local distinctiveness of the District
5. To reduce the need to travel and make it safer and easier for the community to travel to jobs and key services by sustainable forms of transport
6. To develop vibrant and prosperous towns and villages
7. To retain young people and families in the District and enable people of all ages to play a full and active role in their local community
8. Encourage and support accessible and varied opportunities for leisure and recreational activities in order to promote healthy lifestyles
9. To protect and enhance existing community assets and ensure the provision of additional assets (such as health and education facilities) that improve community well being.
10. To ensure that new development contributes towards community benefit

Box 1 Spatial Vision for South Lakeland

By 2025 South Lakeland consists of inclusive, sustainable communities with a choice of housing for all sectors of the community, a diverse, high value local economy, and a healthy, attractive and safe environment. The District has a balanced population, which has seen an increase in the number of young people and families living in the District with people of all ages playing a full role in community life. The District has prospered but the character of the District remains essentially rural with towns and villages set in attractive landscapes including that of the Arnside and Silverdale AONB and the adjoining Lake District and Yorkshire Dales national parks. New development is of high quality design based on a clear understanding of the local context, integrated with the surrounding areas creating a sense of place. All conservation areas have been appraised and conservation areas plans are in place with positive proposals for their enhancement and policies for managing change. Significant green field development has been accommodated in a manner sensitive to the landscape setting of settlements and their relationship with the surrounding countryside. Towns and villages have been kept distinct from one another by protecting important green gaps.

The provision of better services and access to them for all those living in South Lakeland has been achieved by a carefully focused strategy that has recognised the distinctive roles and relationships between its settlements. There is close working relationship with the County Council to progress the proposals in the Local Transport Plan. There is also a close working relationship with public transport operators ensuring a comprehensive and well-used public transport system. The public transport facilities and services together with safe and attractive network of pedestrian routes and cycleways, promote accessibility between the rural settlements and the main towns in the District. The type and location of development meets the needs of local communities, minimising the need to travel and contributing towards tackling climate change. Bus services are reliable and target a range of passenger requirements.

By 2025, most new development has been concentrated in the principal service centres of Kendal and Ulverston and to a lesser extent in the key service centres of Grange over Sands, Milnthorpe and Kirkby Lonsdale. These service centres are thriving, vibrant and prosperous towns, which are main centres of provision of services and employment for their hinterlands. There have been a number of regeneration initiatives within these towns, including improvements to the public realm. Although these settlements have grown, there is a network of green spaces maintained within them providing a link with the wider countryside. The centres are easily accessible by car, bus, cycle, foot and where relevant, rail. New employment opportunities in these towns has increased the range of skilled jobs in South Lakeland so that a much smaller proportion of the District's resident population travels outside of the District to work whilst also functioning as an employment zone for residents in the Lake District National Park. Kendal Town Centre has enhanced its role as the main service centre in the District and maintained its position in the sub-regional hierarchy. It offers a comprehensive range of shopping and other services including leisure in an attractive environment. The centres of Ulverston, Grange over Sands, Milnthorpe and Kirkby Lonsdale offer specialist shopping and are successful visitor destinations. The markets of Kendal, Ulverston and Kirkby Lonsdale are successful attractions both for the local community and visitors. Their specialist offer includes local produce, which assists towards a successful and diverse rural economy.

In South Lakeland's villages, planned and carefully managed growth has taken place, ensuring that sufficient jobs and homes are provided for local people. The rural economy is more diverse supporting rural communities. Local service centres have developed, and moderate scale development has consolidated and strengthened their roles within their hinterland.

There has been considerable progress towards achieving a balanced housing market. There is a range of good quality housing, which people can afford. It offers choice and meets the requirements of all sectors of the community including smaller dwellings for first time buyers, family housing and housing for older people and people with special needs. Most of the housing in the district meets decent home, life-long and eco standards. There has been significant progress towards tackling the problem of homelessness.

All sections of the community have access to opportunities for learning and training. An expanded Kendal College and the new University of Cumbria offer comprehensive opportunities for higher education, vocational training and life long learning. They are supporting a growing entrepreneurial culture, business creation and the establishment of new knowledge based industries. Kendal, in particular is making an important contribution to Cumbria's economy through the development of clusters of knowledge-based industries. Tourism continues to be an important part of the local economy, with improved modern facilities. There are new all weather attractions and improved accommodation provision. The District complements the tourist offer within the Lake District and Yorkshire Dales National Parks.

3.1 Screening of preferred options to identify Likely Significant Effects

Appendix 2 sets out the results of the initial screening of the 25 preferred options. Colour-coding has been used to indicate those options which are considered likely to have a significant effect (red); those for which we cannot be sure there will not be an effect (orange) and those which we have screened out because no significant effects are thought likely (green).

From the screening matrices in Appendix 2 it can be seen that the main factors considered likely to generate adverse impacts on European sites and their conservation objectives are:

- Increased water abstraction and production of waste water: development is likely to lead to an increased demand for water and wastewater treatment in those parts of the District targeted for increases in housing and business premises development. The restoration of the Lancaster canal as part of the Kendal Canal Head regeneration scheme will require a specific abstraction from the River Kent. There will be a requirement to make sure that increased water abstraction has no significant impacts on the European Sites and that wastewater is treated to acceptable levels in order to safeguard the quality of controlled waters.
- Increased traffic levels and congestion: increases in road traffic (cars, lorries, public transport) will inevitably lead to increases in emissions and associated atmospheric pollution which can affect sensitive plant species. Knock-on increases in congestion or travel time whilst commuting, particularly in the market town areas will lead to further emissions that will only exacerbate the problem. Increased traffic creates noise, vibration and other nuisances which could disturb bird species. Increases in emissions, noise and vibration are likely to have a negative impact on biodiversity and the wider environment.
- Increased urbanisation generally: more development, activity, noise, clutter, light and generally increased levels of disturbance. Growth in population and commercial businesses will inevitably lead to increases in waste generation. All of these factors could put pressure on European Sites and protected species where there are towns and villages nearby.
- Increased tourism: which could lead to more visits into or near to the European Sites with consequential noise, disturbance (vehicles, cycles, people, dogs) trampling and litter all of which could affect sensitive habitats and bird species.

4 Other plans and programmes and underlying trends

As part of the screening process, It is also necessary to consider whether the proposed plan might have any significant adverse effects 'In combination' with other plans. 'In combination' refers to the cumulative effect of influences acting on sites from other relevant plans and projects in the context of prevailing environmental conditions. This process therefore takes account of reasonably foreseeable impacts arising from both plans and projects and from 'background' environmental changes or trends.

4.1 Other Plans and Projects that may act in combination

Other plans within the Plan area and a number of major projects have been reviewed to identify potential in-combination effects on European Sites. The following plans and projects have been reviewed in Appendix 3. Their potential in combination effects with the South Lakeland Core Strategy are examined in the screening tables in Appendix 1.

Plans

Draft RSS for the North West

Cumbria County Council Local Transport Plan 2006-11

Cumbria Minerals and Waste Development Framework, Core Strategy Preferred Options, February 2007

Shoreline Management Plan Guidance (Defra, March 2006)

The Kent Catchment Area Management Strategy (updated July 2007)

Kendal Canal Head Area Action Plan, Issues and Options Report (May 2007)

Barrow Port Area Action Plan, Preferred Options (August 2007)

Ulverston Canal Head & Canal Corridor Masterplan (2005)

Projects:

River Kent K-village site and Beezon Road site (Draft provided by South Lakeland DC August 2007)

4.2 Summary of 'in combination' effects

Potential Environmental Change Caused by the Core Strategy	Plans And Programmes Contributing To In-Combination Effects	Source Of In-Combination Effect	Sites Potentially Affected
Reduction in water supply or levels	Draft RSS	Proposes the development of urban, rural and coastal communities, water abstraction would be needed for increased domestic use and industrial purposes	River Kent, Morecambe Bay, Leighton Moss
	Kendal Canal Head AAP	Proposals for significant quantities of housing, employment and infrastructure, water abstraction for supply of growing communities	River Kent, Morecambe Bay
Changes in water quality caused by discharge, surface water runoff or pollution	Draft RSS	Proposals for significant quantities of housing, employment and infrastructure, resulting in increase in wastewater effluent.	River Kent, Morecambe Bay, Leighton Moss, Duddon Estuary
	Kendal Canal Head AAP	Proposals for significant quantities of housing, employment and infrastructure, increasing effluent from water treatment works.	River Kent, Morecambe Bay
	Cumbria Minerals and Waste Development Framework	New waste treatment facilities may result in leachate or runoff causing a reduction in water quality/increase in water pollution	Treatment sites not yet identified
	Ulverston Masterplan	Proposals for housing, employment and infrastructure, water abstraction for supply of growing communities	Morecambe Bay
	Draft RSS	Coastal and estuarine areas around Barrow and Morecambe Bay have been identified for major development.	Morecambe Bay, Duddon Estuary,

Potential Environmental Change Caused by the Core Strategy	Plans And Programmes Contributing To In-Combination Effects	Source Of In-Combination Effect	Sites Potentially Affected
Constraints to habitat mobility and form	Barrow Port AAP	Proposals for 7 development areas next to Morecambe Bay, including a potential new marina link and cruise facility	Morecambe Bay, Duddon Estuary
	Draft RSS	Coastal and estuarine areas around designated SPA and Ramsar sites have been identified for major development	Morecambe Bay, Duddon Estuary
Disruption to bird species	Barrow Port AAP	Proposal for major watersports centre	Morecambe Bay, Duddon Estuary
	Draft RSS	The Draft RSS estimates there will be 6.5m tonnes of municipal waste generated by 2020 – disposal areas will be needed.	Unknown
Loss of habitat extent	Cumbria and Lake District Joint Structure Plan	Increase in development-associated waste and demand for waste and waste treatment works, demand for additional transport infrastructure around identified Key Service Centres. Note: the structure plan will be replaced by the RSS when published later in the year.	River Kent, Morecambe Bay, Roudsea Wood and Mosses
	Barrow Port AAP	Proposals for 7 major development areas at Barrow – combined with high flood risk may result in coastal squeeze	Morecambe Bay, Duddon Estuary

Potential Environmental Change Caused by the Core Strategy	Plans And Programmes Contributing To In-Combination Effects	Source Of In-Combination Effect	Sites Potentially Affected
	Cumbria Minerals and Waste Development Framework	The Waste Core Strategy seeks to provide 11 sites of approx. 2ha for waste treatment facilities, 2 sites of 2-4.5ha for Energy from Waste gasification plants or incinerators, 2 million cubic metres of landfill capacity, and 9 new or enlarged Household Waste Recycling Centres.	Potential sites not yet identified by Framework
	Ulverston Masterplan	Proposals include the opening of Ulverston Canal Foot Lock to allow boat access to Morecambe Bay	Morecambe Bay
	Draft RSS	Proposals for significant quantities of housing, employment and infrastructure – potentially resulting in development-associated traffic	Morecambe Bay Pavements SAC, Duddon Mosses SAC, Witherslack Mosses, and Roudsea Wood and Mosses.
Introduction of invasive non-native species	Kendal Canal Head AAP	Restoration of the Canal may lead to contamination by signal crayfish and crayfish plague	River Kent SAC
Increase in air pollution	Ulverston Masterplan	Proposals for housing, employment and infrastructure – potentially resulting in development-associated traffic.	Morecambe Bay Pavements, Roudsea Wood and Mosses
	Cumbria Minerals and Waste Development Framework	The framework proposes to build 11 sites of 2ha for waste treatment facilities	Potential treatment sites not yet identified

5 Assessment of Likely Significant Effects on European Sites

The impacts of the Preferred Options identified in Chapter 3 were assessed with respect to the conservation objectives of the following European Sites in order to conclude whether there is a LSE.:

Duddon Mosses SAC
Ingleborough Complex SAC
Morecambe Bay Pavements SAC
Morecambe Bay SAC
North Pennine Dales Meadows SAC
River Kent SAC
Roudsea Wood & Mosses SAC
Witherslack Mosses SAC
Duddon Estuary SPA
Leighton Moss SPA
Morecambe Bay SPA
Duddon Estuary Ramsar Site
Leighton Moss Ramsar Site
Morecambe Bay Ramsar Site

LSEs were identified for

- Morecambe Bay SAC
- Morecambe Bay Pavements SAC
- River Kent SAC
- Morecambe Bay Ramsar Site
- Morecambe Bay SPA

The following provides a summary of the assessment detailed in Appendix 1.

5.1 Duddon Mosses SAC

Designated for its active raised bogs and degraded raised bogs still capable of natural regeneration. Active raised bogs are listed as a priority habitat. In the southern part of the complex, where there are transitions from saltmarsh to bog, the vegetation is rich in the rare *Sphagnum pulchrum*. Further north a variety of raised bog conditions can be observed, from hand-cut and vigorously regenerating cuttings, to domes of uncut bog, which display significant areas of actively-growing bog vegetation[2].

[2] JNCC (2008) sourced from http://www.jncc.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0019833

Management of the site and especially maintenance of appropriate water levels on the site is key to restoring it to favourable condition. Agriculture conversion and peat-cutting has left a drained surface although Natural England have stated that there are good prospects for restoration of the site provided the hydrology is repaired.

Proposals within the Core Strategy Preferred options are not likely to have a significant effect upon the conservation objectives of this site, although there is an opportunity to support the restoration of bogs in general, which provide wider benefits such contributing to reducing incidents of flash flooding through the retention and slow release of water as well as acting a carbon store

5.2 Ingleborough Complex SAC

The Ingleborough Complex SAC covers 5769.28 hectares, is designated for a range of habitat types and is situated just outside the SLDC area boundaries. Habitat types for which it is designated include *Juniperus communis* formations on heaths or calcareous grasslands, alkaline fens, calcareous rocky slopes with chasmophytic vegetation and limestone pavements. In addition the site includes a range of other Annex I habitats present as qualifying features, but not primary reasons for selection of the site[3].

Appropriate management at this site is of key importance. The diversity of interest of the limestone pavements, juniper and limestone rock habitats is dependent on there being a range of grazing intensities, from moderate to light to areas with no livestock grazing. Quarrying and removal have in the past affected the Limestone pavements but this is now being addressed through Limestone Pavement Orders. The Core Strategy Preferred options is not likely to significantly affect the key factors influencing the maintenance of favourable condition at this site.

5.3 Morecambe Bay Pavements SAC

Designated for hard oligo-mesotrophic waters with benthic vegetation of *Chara spp*, *Juniperus communis* formations on heaths or calcareous grasslands, semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*), Limestone pavements, *Tilio-Acerion* forests of slopes, screes and ravines, and *Taxus baccata* woods of the British Isles. Other Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site include European dry heaths, Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* and old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

Also present on the site is the narrow-mouthed whorl snail *Vertigo angustior*, although is only found on parts of the site in Lancaster, as are the calcareous fens.

Appropriate management is key at this site, as is a low nutrient input. However the proposals within the core strategy have been shown to not significant effect these factors. One specific aspects of concerned discussed with Natural England[4] is the damage to plant communities from visitors (and their dogs) on one part of the site close to the Key Service Centre of Kendal. The part of the site to the West of Kendal receives high visitor numbers mostly parking at Scout Scar. This is resulting in localised erosion from trampling and pollution from dog faeces. The Core Strategy Preferred Options distinguish Kendal ad a Principal Service Centre and further

[3] See Appendix 1 for full details.

[4] Natural England (2008) Pers. comm. – Meeting with Natural England, 12th February.

housing on the West of Kendal (PO11) is likely to exacerbate this issue and so this issue is being taken forward for further consideration in the Stage 2 AA.

5.4 Morecambe Bay SAC

This large estuarine site (61506.22ha) extends from Fleetwood in Lancashire across to Millom in Cumbria and incorporating the estuaries of the Lune, Duddon, Keer, Kent and Leven. The habitats for which its been designated include Estuaries, Mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, Perennial vegetation of stony banks, *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes'), fixed dunes with herbaceous vegetation ('grey dunes') and humid dune slacks. Key factors that are required to maintain favourable condition, and that were explored in the impact matrix due to the concern that the Core Strategy may affect them included; change or fragmentation of habitat, changes in land use, invasive non native species, appropriate land management, tourism and recreational pressures, exploitation of habitat for commercial use and changes to water quality. The core strategy Preferred Options was shown to have a likely significant effect, but only though increasing visitor and recreational pressure. Of concern is that isolated parts of the site away from settlements may receive increasing visitors and damage as a result. NE have stated that measures are needed to ensure appropriate parking facilities at sensitive sites such as Humphrey Head to ensure that vehicles are not used illegally on intertidal areas.

5.5 North Pennine Dales Meadows SAC

The North Pennine Dales contain a series of isolated fields within several north Pennine and Cumbrian valleys. It is designated for mountain hay meadows and contains the major part of the remaining UK resource of this habitat type[5]. Also present are *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). Parts of this site are on the border of South Lakeland. The Core Strategy Preferred Options was not shown to significantly affect any of the factors that maintain the site in a favourable condition.

5.6 River Kent SAC

The River Kent SAC contains watercourses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. Species of European importance include: white-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*, Freshwater pearl mussel *Margaritifera margaritifera*, and Bullhead *Cottus gobio.* Densities of white-clawed crayfish are very high throughout much of the Kent system (particularly in the tributaries), perhaps higher than anywhere else in England. Likely significant effects have been reported in the impact matrix due to the development proposed in Kendal and especially due to the proposals for regeneration of the Kendal Canal Head area. Concerns relating to the scheme supported in PO11 relate to the possible restoration of the Northern Reaches of the Lancaster Canal and the potential abstraction and discharge from the River Kent SAC and potential spread of signal crayfish and associated crayfish plague from the Lancaster Canal to the River Kent. Introduction of signal crayfish to an area with white-clawed crayfish typically results in 100% mortality of white-clawed crayfish. The EA have not confirmed whether there is water available for abstraction for the canal

[5] JNCC (2008) sourced from website: http://www.jncc.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0014775

restoration[6] while the proposal to discharge water from Kendal Canal Head to the River Kent SAC may also have adverse impacts on water quality, flow and habitats. In addition, the capacity of WWTW in question and increases in housing in Kendal may put pressure on the existing wastewater treatment works.

5.7 Roudsea Wood & Mosses SAC

Roudsea Wood & Mosses is designated for active raised bogs, degraded raised bogs still capable of natural regeneration, *Tilio-Acerion* forests of slopes, screes and ravines, and *Taxus baccata* woods of the British Isles. The site is partly within the area of the SLDC but the Core Strategy Preferred Options were considered unlikely to affect management, water levels and nutrient levels at the site and therefore unlikely to significantly affect the conservation objectives of the site.

5.8 Witherslack Mosses SAC

Designated for its active raised bogs and degraded raised bogs still capable of natural regeneration. Active raised bogs are listed as a priority habitat. Management of the site, reducing levels of nutrient input and especially maintenance of appropriate water levels on the site is key to restoring it to favourable condition.

Proposals within the Core Strategy Preferred Options are not likely to have a significant effect upon the conservation objectives of this site. Similarly to Duddon Mosses SAC there's an opportunity to support the restoration of bogs in general which provide wider benefits such as contributing to reducing the incidence of flash flooding through the retention and slow release of water, as well as acting as a carbon store.

5.9 Duddon Estuary SPA

Duddon Estuary is located to the north of Barrow Island; its southern boundary is at Jubilee Bridge. The SPA covers those parts of the estuary not included in Morecambe Bay SPA. The primary species for selection of this site is *Sterna sandvicensis* Sandwich Tern. The site also qualifies under Article 4.2 of the EU Birds Directive in that it supports an internationally important assemblage of waterfowl and seabirds; and internationally important populations of regularly occurring migratory species.

The area within SLDC only coincides with a small area of the SPA; the northeast reaches of the estuary. The Core Strategy Preferred Options are not considered likely to affect habitat extent, incidence of noise and/or visual disturbance, changes in salinity and turbidity, nutrient and/or organic enrichment and/or changes in thermal regime.

Natural England confirmed that the use of the northern reaches of the Duddon Estuary (which are within the boundaries of SLDC) by visitors was currently very low and was unlikely to rise significantly due to proposals in the plan.

5.10 Leighton Moss SPA

Leighton Moss SPA is designated for *Botaurus stellaris* Great Bittern and *Circus aeruginosus* Marsh Harrier. Leighton Moss is the largest reedbed in northwest England and is vulnerable to changes in water quality and water levels. It is situated 5km south of the South Lakeland district boundary. Proposals in the SLDC Core Strategy Preferred Options will not lead alone or 'in combination' to potentially damaging abstractions or discharges to this site. The RSPB is actively managing the

[6] Environment Agency (2007) Per Comm. Jeremy Pickup Planning Liaison Officer

site and the extent of habitat and supporting habitat will not be affected by the Core Strategy.

5.11 Morecambe Bay SPA

The extent of Morecambe Bay SPA largely overlaps with Morecambe Bay SAC, with the exception of the Duddon Estuary which is the subject of a separate SPA designation. The primary reason for selection of this site is *Sterna sandvicensis* Sandwich Tern. The site also qualifies under Article 4.2 of the EU Birds Directive in that it supports an internationally important assemblage of waterfowl and seabirds; and internationally important populations of regularly occurring migratory species.

The Core Strategy Preferred Options are not considered likely to lead to a loss of habitat, changes in land use at the site, the introduction of invasive species, deterioration in water supply or quality. However there are concerns regarding additional visitor and recreational pressures affecting birds vulnerable to disturbance from noise and/or physical activities.

Further development in towns near the coast and promotion of tourism in the area may have a significant effect. At risk are more remote areas which provide roosting for waterfowl and seabirds are more vulnerable to an increase in numbers and frequency of visitors. Two vulnerable spots of note include Humphry Head Point and the coastline between Bardsea and Baycliff. Growth in residents at Ulverston may pose risks for the latter. Natural England has suggested that interpretation should be provided to encourage visitors to understand the special features of the protected sites. Responsible recreational use should be encouraged through positive information provision. This Issue will be explored further through the Stage 2 AA.

5.12 Duddon Estuary Ramsar Site

Designated under Ramsar criterion 2,4,5 and 6 for nationally important numbers of Natterjack toad and waterfowl during spring and autumn passage, assemblages of international importance (26326 waterfowl) and national importance, nationally important species occurring on the site, including Dune Helleborine, Lax-flowered Sea Lavender, Seaside Centaury, Round-leaved Wintergreen, Variegated Scouring Rus, Coralroot Orchid, Isle of Man cabbage, Otter, Natterjack toad, Mining bee, Digger wasp, and the beetle species *Hypocaccus rugiceps*:

The area within SLDC only coincides with a small area of the SPA: the northeast reaches of the estuary. The Core Strategy Preferred Options are not considered likely to affect habitat extent, incidences of disturbance from noise and/or visual activities, changes in salinity and turbidity, nutrient and/or organic enrichment and/or changes in thermal regime.

Loss of habitat extent for Natterjack toads was raised for discussion by Natural England, but the Core Strategy Preferred Options only directly affects one site near the Ramsar site which is on the edge of Kirkby in Furness and this is a habitat considered unsuitable for Natterjacks.

5.13 Leighton Moss Ramsar Site

Leighton Moss qualifies as a Ramsar site under Criterion 1 and 3. It is an example of large reedbed habitat characteristic of the biogeographical region. The site supports a range of breeding birds including Great Bittern *Botaurus stellaris,* Marsh Harrier *Circus aeruginosus* and Bearded Tit *Panurus biarmicus,* whilst species occurring in nationally important numbers outside the breeding season include Northern Shoveler *Anas clypeata* and Water Rail *Rallus aquaticus.* In addition nationally important

species occurring on the site, include: Otter *Lutra lutra,* the hoverfly species *Sphserophoria loewi*, and Least minor moth *Photedes captiuncula.*

Similar to the SPA designation, due to its location and the factors needed to maintain favourable conditions, the Core Strategy Preferred Options are not considered likely to have a significant effect.

5.14 Morecambe Bay Ramsar Site

The site is a component in the chain of west-coast estuaries of outstanding importance for passage and overwintering waterfowl (supporting the third-largest number of wintering waterfowl in Britain), and breeding waterfowl, gulls and terns.

Designated under Ramsar criterion 4, 5 and 6 for assemblages of international importance and species/populations occurring at levels of international and national importance

As with the site's SPA designation, the Core Strategy Preferred Options are not considered likely to lead to a loss of habitat, changes in land use at the site, the introduction of invasive species, or deterioration in water supply or quality. However there are concerns regarding additional visitor and recreational pressures affecting birds vulnerable to disturbance from noise and/or physical activities.

Further development in towns near the coast and promotion of tourism in the area may have a significant effect. At risk are more remote areas which provide roosting for waterfowl and seabirds are more vulnerable to an increase in numbers and frequency of visitors. Two vulnerable spots of note include Humphry Head Point and the coastline between Bardsea and Baycliff. Growth in residents at Ulverston may pose risks for the latter. Natural England has suggested that interpretation should be provided to encourage visitors to understand the special features of the protected sites. Responsible recreational use should be encouraged through positive information provision. This Issue will be explored further through the Stage 2 AA.

6 Conclusions and recommendations

Possible effects of the plan were reviewed for the following European Sites:

Duddon Mosses SAC
Ingleborough Complex SAC
Morecambe Bay Pavements SAC
Morecambe Bay SAC
North Pennine Dales Meadows SAC
River Kent SAC
Roudsea Wood & Mosses SAC
Witherslack Mosses SAC
Duddon Estuary SPA
Leighton Moss SPA
Morecambe Bay SPA
Duddon Estuary Ramsar Site
Leighton Moss Ramsar Site
Morecambe Bay Ramsar Site

Likely Significant Effects (LSEs) were identified for Morecambe Bay SAC, SPA and Ramsar site, Morecambe Bay Pavements SAC and the River Kent SAC. Further investigation is recommended for these sites as part of subsequent stages of the AA. For the other sites, no LSEs were identified due to the fact that their conservation interest depends primarily on management at site level, or on factors which would not be affected by the proposed Core Strategy

Options representing potential sources of LSEs are summarised in the table below. They include PO3 'Distribution of Development' and PO4 'Balanced Housing Market' which set out the distribution and level of housing increases and PO11 which further details residential and economic expansion in Kendal and supports in principle the restoration of the Kendal Canal Head. Growth in visitors to sites and the LSEs resulting from this are due to a combination of policies including PO1 'Locational Strategy', PO5 'Sustainable Economy', PO7 'Green Infrastructure' , PO12 'Ulverston Area' and PO20 'Tourism'

The LSEs associated with the issues below need to be investigated in more detail as part of Stage 2 Appropriate Assessment and measures must be suggested to avoid or mitigate adverse effects.

POTENTIAL ECOLOGICAL IMPACT	PREFERRED OPTION NUMBERS	SITES POTENTIALLY AFFECTED
Reduced water quality (through increase in sewage, surface water runoff and pollution)	PO3, PO4, PO11	River Kent SAC

Reduction in water supply or levels at sites	PO11	River Kent SAC
Introduction of invasive non native species and crayfish plague	PO11	River Kent SAC
Increase in visitor pressure leading to erosion and disturbance.	PO1, PO3, PO4, PO5, PO7, PO11, PO12, PO20	Morecambe Bay SAC/ SPA/ Ramsar, Morecambe Bay Pavements SAC

7 Glossary

Appropriate Assessment (AA)	An assessment of the affect of a plan or project on the Natura 2000 network. The network comprises Special Protection Areas under the Birds Directive and Special Areas of Conservation under the Habitats Directive (collectively referred to as European sites)
Avoidance	Prevents impacts on European sites from happening in the first place.
Compensation	Off-site offsetting put in place where a significant impact will occur, where there is no alternative, and where the plan is deemed necessary.
Competent authority	The plan-making / decision-making authority. In relation to land use plans this are the Regional Assemblies, County Councils and Local Authorities.
Conservation Objectives	A statement of the nature conservation aspirations for a site, expressed in terms of the favourable condition required for the habitats and / or species for which the site was selected.
European sites	Special Protection Areas (SPAs) and Special Areas of Conservation (SACs). Includes Ramsar sites in this report.
Favourable condition	Designated land is adequately conserved and is meeting its 'conservation objectives', however, there is scope for enhancement.
Habitats Directive	Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna.
Habitats Regulations	Formally known as the Conservation (Natural Habitats, & c.) Regulations 1994. These transpose the requirements of the Habitats Directive into domestic legislation.
Imperative reasons of	The Habitats Regulations require competent

overriding public interest (IROPI)	authorities to establish that there are no alternative solutions before a plan or project can be considered for imperative reasons of overriding public interest. Judgements involve an assessment of the importance of the proposal and whether it is sufficient to override the nature conservation importance of that site.
In-combination	The cumulative effects caused by the project or plan that is currently under consideration, together with the effects of any existing or proposed projects or plans.
Integrity	The integrity of a site is the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and / or the levels of populations of the species for which it was classified.
Local Development Document (LDD)	These include Development Plan Documents (which form part of the statutory development plan) and Supplementary Planning Documents (which do not form part of the statutory development plan). LDDs collectively deliver the spatial planning strategy for a local planning authority's area.
Member State	Nation state member of the EU
Mitigation	Reduces the impact on site integrity to the point where it no longer has adverse effects.
Natura 2000	A Europe-wide network of sites of international importance for nature conservation established as under the European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC; 'Habitats Directive'). This has been transposed into UK law as the Conservation (Natural Habitats &c.) Regulations (1994; 'Habitats Regulations').
Natural England	Natural England works for people, places and nature, to enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas; promote

	access, recreation and public well-being. Natural England was formed by bringing together English Nature, the landscape, access and recreation elements of the Countryside Agency and the environmental land management functions of the Rural Development Service.
Precautionary principle	Prudent action which avoids the possibility of irreversible environmental damage in situations where the scientific evidence is inconclusive but the potential damage could be significant.
Priority Habitat / Species	Habitats and species identified by the Habitats Directive as being of priority importance. Twenty-three of the UK's 76 habitats are highlighted as important under the Habitats Directive priority habitats.
Qualifying Interest Feature	The reasons why the European site has been recommended for designation (e.g. the endangered species that occupy the SAC; rare habitats that occur there; or threatened birds that breed or over-winter in the SPA).
Ramsar sites	Sites designated as internationally important wetland habitats under the International Convention on Wetlands of International Importance (1976) (Ramsar Convention).
Screening	The process of deciding whether or not a plan or project requires an Appropriate Assessment
Site of Special Scientific Interest (SSSI)	UK national designation identified under the Wildlife and Countryside Act (1981) as being important for wildlife and/or geology. Over half of these sites, by area, are internationally important for their wildlife, underpinning the network of Natura 2000 sites, designated as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites.
Special Area of	Site of European importance for nature conservation

Conservation (SAC)	designated under the Conservation of Natural Habitats and Wild Flora and Fauna Directive (92/43/EEC).
Special Protection Area (SPA)	Site of European importance for nature conservation designated under the Conservation of Wild Birds Directive (70/409/EEC).

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