Robin Hoods Bay Coastal Strategy Study

Habitats Regulations Assessment: Screening

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Abbreviations

BAP	Biodiversity Action Plan
CAMS	Catchment Abstraction Management Plan
CFMP	Catchment Flood Management Plan
CHAMP	Coastal Habitat Management Plan
cSAC	candidate Special Area of Conservation
CSS	Coastal Strategy Study
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Overriding Public Interest
LTP	Local Transport Plan
NAI	No Active Intervention
PPS	Planning Policy Statement
RCZA	Rapid Coastal Zone Assessment
RSS	Regional Spatial Strategy
SAC	Special Area of Conservation
SAP	Species Action Plan
SBC	Scarborough Borough Council
SDP	Strategic Development Plan
SFRA	Strategic Flood Risk Assessment
SMP	Shoreline Management Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

This report is the first stage in the assessment of the Robin Hood's Bay Coastal Strategy Study, to meet the requirements of the Habitats Regulations. It has been prepared by Mouchel on behalf of Scarborough Borough Council.

1.1 The Requirement for Habitats Regulations Assessment

The requirement to undertake a Habitats Regulation Assessment (HRA) is set out in the Habitats Directive (Council Directive 92/43/EEC) which requires the assessment of plans and projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Habitats Directive Assessment stating:

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

Article 6(4) expands on the paragraph above and discusses alternative solutions and the requirement to provide compensatory measures. It states:

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

1.2 What are Natura 2000 Sites?

Natura 2000 is a European wide network of sites of international importance for nature conservation established under the European Council Directive 'on the conservation of natural habitats and of wild flora and fauna' – (92/43/EEC 'Habitats Directive). This has been transposed into UK law as the Nature Conservation (Natural Habitats &c.) Regulations 1994 as amended 2004.

Natura 2000 sites include Special Areas of Conservation (SAC) and candidate Special Areas of Conservation (cSAC), which are designated under the Habitats Directive (94/43/EEC), and Special Protection Areas (SPA) classified under the 'Birds Directive' (79/409/EEC).

1.3 What is Habitat Regulations Assessment?

Habitats Regulation Assessment (HRA) is an assessment of the potential effects of a proposed plan or project, which is not necessary for the management of the site and which is likely to have a significant effect, on one or more Natura 2000 sites, in view of the site's conservation objectives.

There are four stages to the Habitats Regulation Assessment process set out in the commonly adopted guidance; 'Appropriate Assessment of Plans, September 2006 (Levett-Therivel)'. Article 6(3) of the Habitats Directive relates to Stages 1 to 3 and Article 6(4) to Stage 4, as follows:

- **First Stage – Screening**

  This process identifies the likely impacts upon a Natura 2000 site, either alone or in combination with other projects or plans. This stage considers whether these impacts are likely to be significant and determines whether or not an Appropriate Assessment is needed.

- **Second Stage – Appropriate Assessment**

  The consideration of the impact on the integrity of the Natura 2000 site, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives.

- **Third Stage – Assessment of Alternative Solutions**

  This process examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site. Alternatives that avoid adverse effects should be considered as early as possible and in reality the second and third stages should be considered in unison.

- **Fourth Stage – Compensatory Measures**

  An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the plan should proceed. This stage should be undertaken by a competent local authority.

If it is concluded at the screening stage that there will be no significant impacts, there is no need to carry out subsequent stages. This Screening Report addresses the first stage of the HRA process for the Robin Hood's Bay Coastal Strategy Study (CSS).

1.4 What is a Significant Effect on a Natura 2000 Site?

A judgement of the significance of effects on a Natura 2000 site should be undertaken in relation to the designated interest features and conservation objectives of the Natura 2000 site using sound judgement, and with a scientific basis

where available. If insufficient information is available to make a clear judgement, it should be assumed that a significant effect is possible in line with the precautionary principle.

1.5 Structure of this HRA Screening Report

The report is structured as follows:

Chapter 2 Description of the CSS including modelled scenarios.

Chapter 3 Descriptions of the relevant plans and projects to be considered 'in combination'.

Chapter 4 HRA methodology setting out the approach used and specific tasks undertaken.

Chapter 5 Identification of the Natura 2000 sites potentially affected by the CSS including descriptions of the conservation objectives and potential sensitivities of each site to adverse effects.

Chapter 6 Screening assessment of the CSS considering whether there are likely to be any significant effects of the CSS, alone or in combination with other relevant plans and projects, on Natura 2000 sites.

2 Description of the Coastal Strategy Study

2.1 Introduction

Mouchel have been commissioned by Scarborough Borough Council (SBC) to develop a CSS for the implementation of management policies for the area between Whitby and Hundale Point. The aim of the CSS is to develop a long-term sustainable CSS based on a series of coastal, environmental and economic assessments.

In parallel with the development of the CSS a HRA is required due to the nature of the CSS and the areas that it will affect. The HRA will ensure that the ecological implications of the CSS on European designated sites and species are understood and that the best options are taken forward using appropriate mitigation measures where necessary.

2.2 The Study Area

The study area covers 24.2 km of coastline, from Abbey Cliff, to the south of Whitby, to Hundale Point, just north of Scalby. It extends inland for 100 m from the top of the eroding cliff edge. The shoreline between Whitby and Cloughton is divided up into Management Areas in accordance to the overarching River Tyne to Flamborough Head SMP2. The Management Areas within this study are MA24 and MA25. The Management Areas are then divided into Policy Units; MA24.1, MA25.1 and MA25.2.

2.2.1 MA24.1

MA24.1 extends from Abbey Cliff in the north approximately 1.2 km south to Saltwick Nab. To the east of Whitby East Pier are the high, near vertical Abbey cliffs with a wide rock platform at the toe. A rock revetment has been placed to the toe of the cliff by the east Pier and extends some 200 m. The steep cliffs extend along the coast all the way to Saltwick Nab where a large rock platform extends at the foot of the cliff.

2.2.2 MA25.1

MA25.1 extends from Saltwick Nab approximately 23 km south to Hundale Point but excludes the Village of Robin Hoods Bay.

The cliffs at the northern end of Robin Hood's Bay are steep; scree covered and extends to a rock platform. At the abrupt northern corner of the bay the cliffs are near vertical and reduce in height to the south where they are overlain by glacial till. The till slopes have regressed to form a series of vegetated terraces with the road to Robin Hood's Bay village close to the crest and a rock revetment at the toe of the cliffs. The steep till slopes continue to the south with the basal vertical cliff re-emerging at Boggle Hole. Here the Mill Beck cuts a gorge through the till and the underlying rock to emerge as a steep-sided heavily wooded valley at the coast. The near vertical toe cliff with the upper sloped till deposits continue along the face of the bay to the headland at Ravenscar.

The coast to the south of Ravenscar is typified by a lower rock cliff with a wide slumped, terraced and vegetated slope to the higher cliff (possibly glacial till) behind.

The toe cliff increases in height at Hayburn Wyke and extends along the coast to the southern limit of the study area at Hundale Point. Over this section there is a narrow rock strewn foreshore.

The majority of the coastline including Robin Hood's Bay is designated as a Site of Special Scientific Interest (SSSI). The section from just south of Robin Hood's village to just north of Hundale Point is designated as a Special Area of Conservation (SAC). The entire MA is designated as Heritage Coast and there are seven Geological Conservation Review (GCR) sites along this part of the coast. Much of the land behind the coast in this MA is owned by the National Trust.

2.2.3 MA25.2

MA25.2 covers the small length of coastal frontage in the middle of MA25.1 at the village of Robin Hoods Bay and extends for approximately 0.5 km.

The upper part of Robin Hood's Bay Village sits on the till slopes with a near vertical toe cliff which reduces in height to the south. The road to the lower village runs close to the crest of the regressing till slope.

The densely developed lower village is built on shoulders of land either side of the Kings Beck valley. The easterly, seaward facing, shoulder is protected at the coast by a 14 m high concrete sea wall (built in 1975) anchored into the cliffs and extending from Ground Wyke Hole to the slipway at the end of the village. The westerly, inland, part of the lower village is constructed on the till slopes with inland higher cliffs to the rear. The southern-most "nose" of the village is known as the Quarterdeck. Here the till has been stabilised by a recently constructed rock

2.3 Aims and Objectives of the CSS

The purpose of the study is to prepare a coastal strategy for the potential protection of the coastline between Whitby and Hundale Point. Particular attention is being paid to developing coastal defence solutions that are economically justified whilst providing a sustainable solution as regards coastal processes and natural environment of the frontage. This will be achieved through the identification of a range of options that can be compared against the strategic aims and objectives for the frontage.

The adopted strategy will be compatible with the River Tyne to Flamborough Head SMP2 2007 which defines the shoreline policy for each management unit. The CSS reviews the shoreline management policies recommended in the SMP2 for each management unit in more detail and assesses the risk to people and property and identifies and appraises the options for addressing these risks.

The aim of the CSS is to provide appropriate levels of coastal and flood defence, whilst developing the natural environment for the benefit of all. The objectives of the strategy are:

- To provide an appropriate level of coastal and flood defence to prevent coastal erosion and flooding of properties and the low-lying hinterland;

- to provide sustainable defences, which utilise natural defence mechanisms wherever possible;

- to enhance the natural environment and to increase the potential for recreation and tourism;

- to provide a blueprint for future monitoring and programming of maintenance works;

- to increase the understanding of the shoreline and to focus consultations in a strategic manner; and

- to aid co-ordination and to consolidate information gathered within higher level plans.

2.4 Key Issues

A small section of the shoreline has been protected historically and as a result land use is now dependent on continued protection, specifically in Robin Hood's Bay Village. Coastal erosion and coastal land slips have been a particular issue in the past for many parts of the frontage.

The following three key issues have been identified as specific causes of concern in the Management Areas:

- Most of the open shoreline is subject to coastal processes, coastal erosion can lead to loss of assets including property, infrastructure and historic features. Environmental assets may be lost by natural coastal processes but this is usually acceptable;

- Robin Hood's Bay is important for tourism and is currently defended. Any change to this existing defence would impact the long term future of Robin Hood's Bay;

- Undeveloped areas and the intertidal zone and cliff face contain considerable environmental and geological assets, including substantial areas designated under the European Habitats Directive and the Wildlife and Countryside Act; and

- The shoreline and nearshore zone is an important recreation resource.

3 Relevant Policies and Plans to be Considered 'In Combination'

3.1 Introduction

The CSS will be affected by, and affect, a range of plans and programmes and environmental objectives. These include European, national, regional and local level policies such as Planning Policy Statements and Local Plan Objectives. The plans and programmes have been assessed for their relevance to nature conservation and relevant objectives and/or requirements of the document have been included in the HRA. Details of policies and plans that have been considered are provided in Table 3.1.

Table 3.1 – List of relevant policies and plans

Name of Document	Relevant Policies/Plans
International	
EC Directive on the Conservation of Wild Birds 79/409/EEC (1979)[1]	Member States have a duty to sustain populations of naturally occurring wild birds by sustaining areas of habitat in order to maintain populations at ecologically and scientifically sound levels. This applies to birds, their eggs, nests and habitats.
EC Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC (1992)[2]	Member States are required to take legislative and administrative measures to maintain and restore natural habitats and wild species at a favourable conservation status in the community.
The Convention on Biological Diversity. Rio de Janerio (1992)	Article 6A requires each Contracting Party to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity.

[1] The Council of European Communities (1979) EC Directive on the Conservation of Birds.

[2] The Council of European Communities (1992) EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

Name of Document	Relevant Policies/Plans
National	
Wildlife and Countryside Act (1981) (as amended)	Addresses species protection and habitat loss by setting out the protection that is afforded to wild animals and plants in Britain.
The Conservation Regulations (1994) (Habitats Regulation) as amended	Transposes the requirements of the Habitats Directive building on existing legislation for the protection of species and habitats listed in the Directive.
Planning Policies	
PPS9 Biodiversity and Geological Conservation ODPM (2005)	Sets out planning policies on protection of biodiversity and geological conservation through the planning system. Aims to conserve enhance and restore the diversity of England's wildlife and geology; and contribute to regeneration and renewal through enhancing biodiversity and green spaces.
Regional	
The Yorkshire and Humber Plan: Regional Spatial Strategy to 2026 (2008)[3]	This provides a spatial development strategy at the broad regional level within which Local Authorities can prepare their more detailed proposals. Its approach makes crucial links between other national and regional strategies and programmes such as the Regional Economic Strategy and the Regional Housing Strategy.
Local	
North York Moors National Park Authority Local Development Framework (2008)[4]	The Local Development Framework system provides an opportunity to bring together plans and strategies for the Park and deliver the spatial elements of these whilst balancing these interests within the context of sustainable development.

[3] Government Office for Yorkshire and the Humber (2008) The Yorkshire and Humber Plan: Regional Spatial Strategy to 2026. *London:* The Stationary Office.

[4] North York Moors National Park Authority (2008) North York Moors National Park Authority Local Development Framework: Core Policies and Development Policies.

Name of Document	Relevant Policies/Plans
River Tyne to Flamborough Head SMP2: Non Technical Summary for Scarborough Area (2007)[5]	The SMP provides a large-scale assessment of the risks associated with coastal evolution and presents a policy framework to address these risks to people and the developed, historic and natural environment. The plan does not recommend any defence for the coast fronted by the SAC.
Historic Environment Strategy for Yorkshire and the Humber Region 2009-2013, Yorkshire and the Humber Historic Environment Forum (2008)	Prepared by a range of organisations to provide a framework for the management of historical assets providing a basis to guide regional policy and decision making. Agrees with the general approach that coastal defence would not be a long term option for the protection of historical assets.
Rapid Coastal Zone Assessment Survey (RCZA) Yorkshire and Linconshire: Whitby to Reighton, English Heritage (2008)	The RCZA aims to establish a more comprehensive and reliable database and assessment of the range and scope of archaeological resource currently available. The project identified 779 records of which a large proportion are new. Agrees with the general approach that coastal defence would not be a long term option for the protection of historical assets.
North York Moors National Park: Coastal & Marine Biodiversity Action Plan (2006)[6]	Identifies the key ecological characteristics and features of the North York Moors coastline, its importance and current conservation and action plans.
Scarborough Biodiversity Action Plan (BAP)[7]	In Summary: Maintain at least the present extent and regional distribution of the UK's mudflats. This target will require compensating predicted losses to development by the restoration of mudflats. Whilst this may not be possible in

[5] Lane, N. Guthrie, G. (2007) River Tyne to Flamborough Head SMP2: Non Technical Summary for Scarborough Area.

[6] Beech, J. (2006) North York Moors National Park: Coastal & Marine Biodiversity Action Plan.

[7] Scarborough BAP, Accessed on 22nd June 2009, found at: http://www.ukbap.org.uk/lbap.aspx?ID=534#6

Name of Document	Relevant Policies/Plans
	the same location, it should be within the same littoral sediment cell. There should be no further net loss (currently estimated at 100 ha/year) of coastal saltmarsh. This will involve the creation of 100 ha/year during the period of this plan. Seek to maintain the existing maritime cliff resource of cliff-top and slope habitat, of about 4000 km. Maintain wherever possible free functioning of coastal physical processes acting on maritime cliff and slope habitats. Retain the amount of maritime cliff and slope habitats unaffected by coastal defence and other engineering works.

4 HRA Screening Methodology

4.1 Introduction

The HRA screening stage identifies whether a plan, either alone or in combination, is likely to have a significant impact on a European site. European Commission Guidance (2001) (see reference below) recommends that this stage should comprise:

- Determining whether the plan is directly connected with or necessary to the management of the site. If it is, then no further assessment is necessary;
- Describing the plan and other plans and projects that, 'in combination', have the potential to have significant effects on a European site;
- Identifying the potential effects on the European site; and
- Assessing the significance of any effects on the European site.

4.2 Methodology for the Assessment of CSS Options

No guidance is currently available for the specific HRA assessment of a CSS and, as a result, the methodology adopted here has been developed using guidance from other documents including:

- Planning for the Protection of European sites: Appropriate Assessment, DCLG, 2006;
- Appropriate Assessment of Plans, Levett-Therivel, 2006; and
- Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission, 2001.

The Strategic Environmental Assessment (SEA) scoping report (Mouchel, 2009) identified all of the options in each management unit that need to be considered as possible options in the CSS. These generally consisted of 'hold the line', 'do nothing' and 'retreat the line' although in some cases, the SEA scoped out certain options due to them not being viable.

All of the options were screened against criteria adapted from the guidance detailed above. The criteria categorise each option as having no effect on a European site, could have an effect of a European site or is likely to have an effect on a European site. If any options are found to have the potential for impact they will be subject to an appropriate assessment if the option is taken forward (stage 2 of the HRA).

5 Natura 2000 Sites Potentially Affected by the CSS

5.1 Introduction

One Natura 2000 site is located within the area covered by the strategy and may potentially be affected by the policies in the plan:

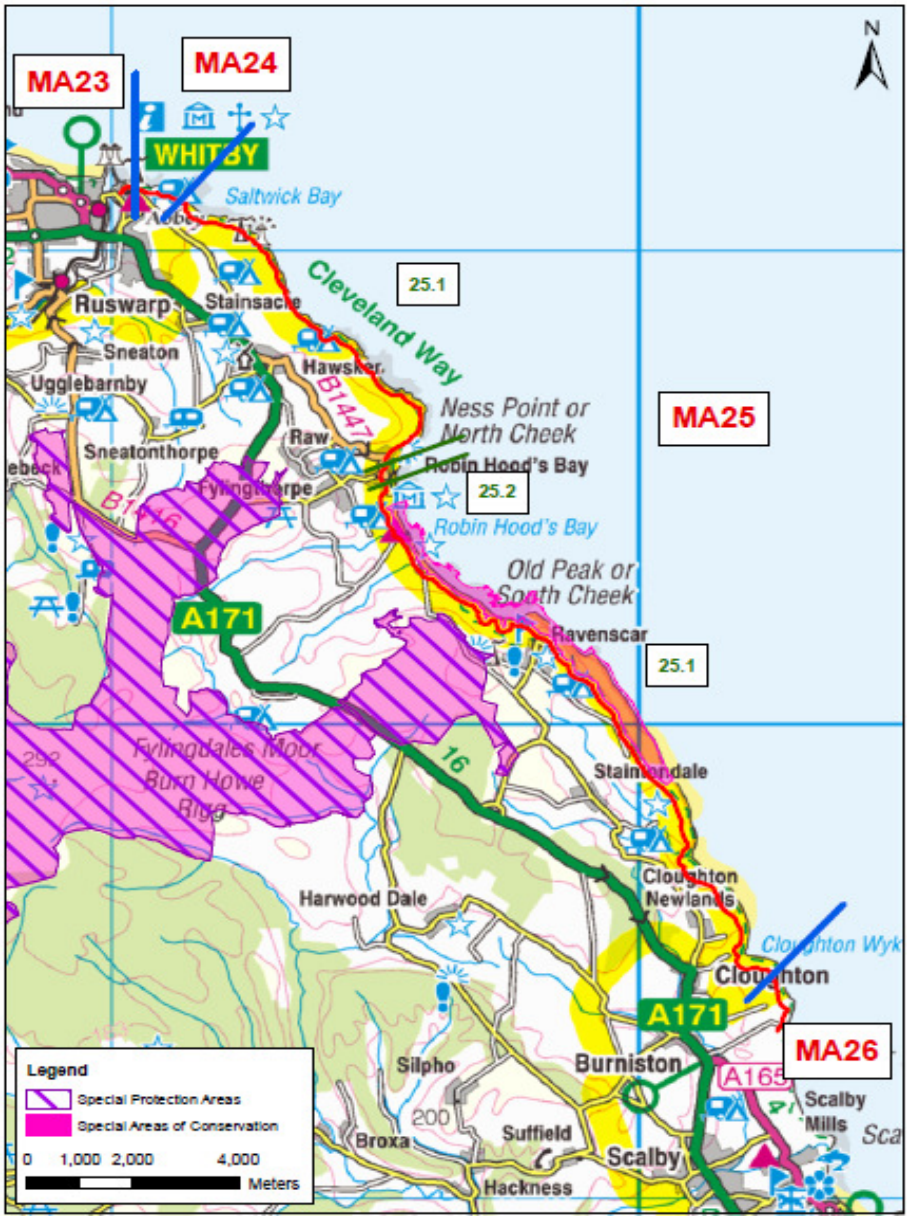
- Beast Cliff to Whitby (Robin Hoods Bay) SAC.

There is also another two Natura 2000 sites approximately 500 meters from the coastline which could experience some effect as a result of the CSS:

- North York Moors SPA; and
- North York Moors SAC

Figure 5.1 shows the location of the three designated sites in relation to the management units covered by the CSS.

Figure 5.1 – Study Area with Designated Sites



5.2 Beast Cliff to Whitby (Robin Hoods Bay) SAC

The SAC is an east coast complex of hard and soft cliffs. The combination of geology, topography and plant communities found on the site are unique and it is one of the best examples of vegetated sea cliffs on the north-east coast of England. The underlying geology varies from base-rich to base-poor, and this variation is reflected in a characteristic and diverse flora across the site. Vertical hard cliffs support maritime crevice and ledge vegetation, and the more gently sloping parts of Beast Cliff itself are covered by scrub and woodland. Sandstone boulders support a luxuriant growth of mosses and ferns and pools on the cliff shelf support wetland plants and scrub. Due to the frequent land slippage occurring on the site, the woodland is constantly changing and being rejuvenated with mainly young trees forming secondary woodland. North of Beast Cliff to Ravenscar the vegetation is more open and reflects alternating strata of rich and poor base-status. Areas of

calcareous clays support typical calcareous grassland and wet flush plant communities, whereas heathland species occur on more acidic sandstone outcrops. From Ravenscar north to Robin Hood's Bay the cliffs are composed either partly or entirely of soft boulder clay. This clay is continually being eroded by wave action and slippage, and supports pioneer plant communities typical of this changing habitat. The primary reason for the designation of this site as a SAC is for its habitat of vegetated sea cliffs. An outline of the characteristics of this feature is provided below.

In 2009 a report was completed by Natural England which contained the conservation objectives and definitions of favourable condition for designated features of interest within the SAC. This report, which also outlines the conservation objectives of the site, is reproduced in Appendix A.

5.2.1 Vegetated Sea Cliffs of the Atlantic and Baltic Coasts

Vegetated sea cliffs are steep slopes fringing hard or soft coasts, created by past or present marine erosion, and supporting a wide diversity of vegetation types with variable maritime influence. Exposure to the sea is a key determinant of the type of sea cliff vegetation. In the UK exposure is greatest on the south-west and northern coasts. The long fetch associated with these coasts generates high waves and swell, and the prevailing winds help deliver salt spray to the cliff face and cliff tops. However, the degree to which this affects the salinity of cliff-top vegetation also depends on the amount of rainfall. The most exposed areas support maritime vegetation dominated by a range of salt-tolerant plants. More sheltered cliffs support communities closely related to those found on similar substrates inland, such as grassland and heath, with only a minor maritime element in the flora.

Cliff structure and geomorphological processes are major influences on cliff vegetation. 'Hard' cliffs with vertical or very steep faces are characteristic of hard igneous, metamorphic and sedimentary rocks and also of chalk, which, although a soft rock, nevertheless forms vertical cliffs. 'Soft' cliffs have a sloping or slumped profile, often with a distinct 'undercliff'; they occur on a range of soft rocks, or on hard rocks interspersed with softer deposits. The more mobile soft cliffs occur where there are unstable soft deposits such as mudstones or glacial drift deposits. They may be subject to mudslides or landslips, which create complexes of pioneer and more mature vegetation.

The profile and stability of the cliff face is one of the major determinants of cliff vegetation. Even near-vertical cliffs support specialist crevice communities, with rock samphire *Crithmum maritimum,* while ledges occupied by breeding seabirds may develop specialist nitrophilous communities comprising plant species which are able to cope with heavy guano deposition. On less extreme slopes, species tolerant of exposure to wind and salt spray and of thin soils can find a foothold. The most characteristic maritime cliff communities occur in such situations. On relatively stable soft cliffs a wide range of progressively less-specialised communities can occur, including grassland, heath, scrub and even woodland. More mobile soft cliffs show a complex sequence of successional communities related to degrees of

instability and the age of the slope. The vegetation of these sites forms a mosaic of pioneer, ruderal, grassland, scrub and woodland communities. Streams and flushes provide a freshwater wetland element, and seepage lines may be rich in orchids.

The second major influence on maritime cliff vegetation is the nature of the underlying rock or drift deposit, notably whether it is basic or acidic. In the most exposed situations this effect is masked by the saline influence of sea spray, but more sheltered cliffs support communities closely related to those found on similar substrates inland, with only a minor maritime element in the flora. Thus, chalk and limestone cliffs support calcareous grassland communities, while acidic hard rocks support heath communities.

The maritime influence on cliff communities is shown in both vertical and lateral zonation. The effects of salt spray are greatest close to the sea and least at the cliff top, especially where a sloping profile sets this back from the shoreline. Superimposed on this pattern is the effect of local topography. The most maritime sites are those facing the prevailing winds or the longest 'fetch' of open sea, notably headlands projecting from the coastline and gullies or blowholes which funnel salt water up the cliff. On the sheltered side of headlands and in bays the maritime influence is progressively diminished and is replaced by a mild, humid climate in which plant species normally restricted to woodland are found in open situations, often associated with bracken *Pteridium aquilinum*.

5.2.1.1 European Status and Distribution

Vegetated sea cliffs occur discontinuously along the west-facing coasts of Europe. On more sheltered coasts they are more local and show less expression of maritime features. In general, the east coast cliffs of north-west Europe are particularly associated with glacial drift deposits and as a result are more mobile. The UK supports a significant proportion of EU sea cliff vegetation. In particular, the coast of England holds a major proportion of the European coastal chalk exposures (113 km, compared with 85 km in France and shorter lengths in the Baltic).

In the UK, the exposed western and northern coasts have extensive cliffs composed of hard, mostly acidic, rocks; similar rock types also form prominent cliffs in parts of eastern Scotland. The sheltered south coast of England supports hard cliffs of chalk, limestones and sandstone and, more locally, mobile cliffs subject to landslips.

5.3 North York Moors SAC

The North York Moors supports an intimate mosaic of dry and wet heath interspersed in parts with smaller amounts of blanket bog, mainly on the higher plateau, between river valley catchments. The majority of the moorland is managed for both sheep farming (by farmers) and for the sporting shooting of grouse (by estates and their gamekeepers). Most of the moors are grazed, as well as burnt (on a rotational basis), and this provides a diversity of heather which favours high numbers of grouse, moorland waders and merlin. Overgrazing is generally not a problem although localised winter-feeding and lack of traditional shepherding has led to some small losses of heather. The wetter communities, particularly blanket bog,

are vulnerable to drainage and overburning, leading to the loss of structural diversity as well as the loss of mosses and lichens. The current poor economic return from sheep management is leading to a loss of sheep flocks from the moors, which is of concern. Various ongoing schemes are/have been in place to help support continued moorland management.

The primary reason for the designation of the site is the presence of the North Atlantic wet heaths and European dry heath habitats. The site also features another annex I habitat, blanket bogs, however this is not a primary reason for the selection of the site. An outline of the characteristics of these features is provided below.

5.3.1 Northern Atlantic Wet Heaths with Erica tetralix

This site in north-east Yorkshire within the North York Moors National Park contains the largest continuous tract of upland heather moorland in England. *Erica tetralix – Sphagnum compactum* 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 *Molinia caerulea* and heath rush *Juncus squarrosus* are also common within this community. In the wettest stands bog-mosses, including *Sphagnum tenellum*, occur, and the nationally scarce creeping forget-me-not *Myosotis stolonifera* can be found in acid moorland streams and shallow pools.

Wet heath usually occurs on acidic, nutrient-poor substrates, such as shallow peats or sandy soils with impeded drainage. The vegetation is typically dominated by mixtures of cross-leaved heath *Erica tetralix*, heather *Calluna vulgaris*, grasses, sedges and *Sphagnum* bog-mosses.

Wet heaths occur in several types of ecological gradient. In the drier areas of the south and east, wet heaths are local and often restricted to the transition zone between European dry heaths and constantly wet valley mires. In the uplands they occur most frequently in gradients between dry heath or other dry, acid habitats and blanket bogs. At high altitude in the Scottish Highlands wet heaths occur in mosaics with Alpine and Boreal heaths; in these situations lichens and northern or montane species may be well-represented. Flushed wet heaths are especially frequent in areas of high rainfall, and occur as topogenous fens, usually in channels within heath or grassland vegetation.

Wet heath is an important habitat for a range of vascular plant and bryophyte species of an oceanic or Atlantic distribution in Europe, several of which have an important part of their EU and world distribution in the UK.

5.3.1.1 European Status and Distribution

Northern Atlantic wet heaths with *Erica tetralix* are restricted to the Atlantic fringe of Europe between Norway and Normandy. A high proportion of the EU resource occurs in the UK.

Northern Atlantic wet heaths with *Erica tetralix* occur throughout the UK but are highly localised in parts of southern and central England. Wet heaths become increasingly extensive in the cool and wet north and west, especially in the Scottish Highlands. However, the area covered by wet heath is significantly smaller than that covered by blanket bogs or dry heath.

5.3.2 European Dry Heaths

This site in north-east Yorkshire within the North York Moors National Park contains the largest continuous tract of upland heather moorland in England. 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 *Calluna vulgaris – Deschampsia flexuosa*, with some *Calluna vulgaris – Erica cinerea* heath on well-drained areas throughout the site, and large areas of *Calluna vulgaris – Vaccinium myrtillus* heath on steeper slopes.

European dry heaths typically occur on freely-draining, acidic to circumneutral soils with generally low nutrient content. Ericaceous dwarf-shrubs dominate the vegetation. The most common is heather *Calluna vulgaris*, which often occurs in combination with gorse *Ulex spp*., bilberry *Vaccinium spp*. or bell heather *Erica cinerea*, though other dwarf-shrubs are important locally. Nearly all dry heath is semi-natural, being derived from woodland through a long history of grazing and burning. Most dry heaths are managed as extensive grazing for livestock or, in upland areas, as grouse moors.

5.3.2.1 European Status and Distribution

European dry heaths are found in every EU Member State except for Greece, but are only extensive in the western oceanic fringes of Europe. A high proportion of the EU resource of European dry heaths occurs in the UK, although this proportion is not as high as that of Northern Atlantic wet heaths with *Erica tetralix*. Dry heaths in the UK exhibit exceptional diversity in comparison with examples found elsewhere in the EU.

Dry heaths occur throughout the UK. They are particularly abundant in the uplands, where they may form extensive stands, which dominate the landscape. They are more localised in lowland areas, especially in south and central England, where they have declined in extent due to afforestation and agricultural improvement.

5.3.3 Blanket Bogs

These extensive peatlands have formed in areas where there is a climate of high rainfall and a low level of evapotranspiration, allowing peat to develop not only in wet hollows but over large expanses of undulating ground.

'Active' is defined as supporting a significant area of vegetation that is normally peat-forming. Typical species include the important peat-forming species, such as bog-mosses *Sphagnum spp*. and cottongrasses *Eriophorum spp*., or purple moor-grass *Molinia caerulea* in certain circumstances, together with heather *Calluna*

vulgaris and other ericaceous species. Thus sites, particularly those at higher altitude, characterised by extensive erosion features, may still be classed as 'active' if they otherwise support extensive areas of typical bog vegetation, and especially if the erosion gullies show signs of recolonisation.

5.3.3.1 European Status and Distribution

In the EU, Blanket bogs are found primarily in the UK and Ireland, but the extent of surviving habitat is now much reduced in Ireland.

Blanket bogs are found in the north and west of the UK, extending from Devon in the south to Shetland in the north. *Scirpus – Eriophorum* mire predominates in the west, particularly at lower altitude, while *Calluna – Eriophorum* mire is particularly abundant in the east and at higher altitudes. *Erica – Sphagnum* mire is widely but patchily distributed.

5.4 North York Moors SPA

The North York Moors are located in north-east England, to the south-east of Middlesborough. This is a predominantly upland area, dominated by open heather moorland, intersected by long valleys largely orientated north-west to south-east, which contain valley mires, pastures and fringing deciduous or conifer woodlands. The area is considerably drier than the Pennine Moors to the west and this influences the character of the moorland and heaths that have developed on peaty soils. These areas are mostly managed for grouse by rotational burning and with extensive sheep grazing. Bracken *Pteridium aquilinum* has become dominant over extensive areas that were formerly dominated by ericaceous species. There are boggy flushes with rushes and valley mires with Sphagnum mosses, sedges *Carex spp.* and other plants characteristic of fens and bogs. The moors are important for breeding upland birds, notably raptors utilising the varied conditions from high moorland down to the valley sides and bottoms, and for breeding waders.

This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive.

During the breeding season:

- Golden Plover *Pluvialis apricaria*, 526 pairs representing at least 2.3% of the breeding population in Great Britain.
- Merlin *Falco columbarius*, 40 pairs representing at least 3.1% of the breeding population in Great Britain.

6 Screening Assessment

6.1 Introduction

Section 2 of this report describes the aims, objectives and geographic coverage of the CSS. This Section considers the various options available in order to achieve these aims and objectives. Acknowledging that the plan is not necessary to European site management, each option is evaluated to determine whether or not they are likely to have significant adverse effects on the site integrity, either alone or in combination with other plans or projects.

Site integrity can be described as follows:

> '*The integrity of the 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 population of the species for which it was classified*[8]'

If the impact of an option on a designated site cannot be ruled out, the precautionary principle will be used to ensure it is assessed further at the appropriate assessment stage.

6.2 Consideration of Effects

The CSS has been screened for potential effects on the European sites in question. The impact of each option for each management unit has been categorised using the scale outlined in Table 6.1.

Table 6.1 – Options screening criteria

Category Number	Reasoning for impact on European site
Reasons why option will have no effect on European site	
1	The selected option will not itself lead to changes in coastal management and, by doing nothing; there will be no negative impact on the designated features of a European site.
2	The selected option will lead to changes in coastal management but it will be suitably far from the European site so as not to affect the designated features.

[8] ODPM (2005): Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System

Category Number	Reasoning for impact on European site
3	This option needs to be assessed as part of a higher level strategic Shoreline or Coastal Management Plan.
4	The option is intended to protect the natural environment, including biodiversity and will not compromise the designated features of a European site.
Reason why the option could have a potential effect	
5	It cannot be proved that the option will not have an impact on the designated features of a European site due to a lack of information at this stage.
Reason why option would be likely to have a significant effect	
6	The option makes no provision for changes in coastal management however, by doing nothing, it is likely to have a significant impact on the designated features of a European site.
7	The option makes provision for changes in coastal management that would be likely to have a significant effect on the designated features of a European site

6.3 Policy Options

The following table highlights the preferred options of each Policy Unit as determined by the CSS.

Table 6.2 - Selected Policy Options for the Study Area

Policy Unit	Short Term 2010-2035	Medium Term 2035-2060	Long Term 2060-2110	Summary
MA 24.1	Option 2 – Adaptive Management	Option 2 – Adaptive Management	Option 2 – Adaptive Management	Property Roll Back Scheme. Abandonment of residential and commercial properties. Planning provision for replacement buildings on either the property owners land or further land which can be released by the National Park Authority.

Policy Unit	Short Term 2010-2035	Medium Term 2035-2060	Long Term 2060-2110	Summary
MA 25.1	Option 2 – Adaptive Management	Option 2 – Adaptive Management	Option 2 – Adaptive management	Property Roll Back Scheme. Abandonment of residential and commercial properties. Planning provision for replacement buildings on either the property owners land or further land which can be released by the National Park Authority.
MA 25.2	Option 2 – Adaptive Management/ Active Intervention Maintain	Option 2 – Adaptive Management/ Active Intervention Maintain	Option 2 – Adaptive Management/ Active Intervention Maintain	Property Roll Back Scheme. Abandonment of residential and commercial properties with planning provision for replacement buildings on either the property owners land or further land which can be released by the North York Moors National Park Authority. Maintenance to existing defences in the southern village. A study is required for the adaptive management.

Table 6.3 shows the level of impact of the preferred options on the Natura 2000 sites.

Table 6.3 - Assessment of Effects

Policy Unit	Options	Beast Cliff – Whitby (Robin Hoods Bay) SAC	North York Moors SPA	North York Moors SAC
MA24.1	Adaptive Management	1	1	1
MA25.1	Adaptive Management	1	1	1

Policy Unit	Options	Beast Cliff – Whitby (Robin Hoods Bay) SAC	North York Moors SPA	North York Moors SAC
MA25.2	Adaptive Management/Active Intervention Maintain	2	2	2

The preferred option arising from the CSS for both MA 24.1 and 25.1 is Adaptive Management. This option offers no protection to the coast but includes a property roll back scheme which will not cause any significant impacts on the integrity of the European designated sites. Category Number 1 is assigned for both of these options for all three designated sites in accordance with the reasoning set out in Table 6.1. This Category has been given because the option will not involve any construction works or alterations to the coastline; as a result there will be no impact on the conservation objectives for the site.

The CSS has determined that the preferred option for MA 25.2, Robin Hoods Bay, is Adaptive Management/Active Intervention Maintain. Under this option the existing defence to the southern part of the village will be maintained and a property roll back scheme will be introduced to the upper part of the village to protect the residential area. There will be no impact on the integrity of the European sites and their conservation objectives due to the distance of the sites from the Management Area.

6.4 Screening Statement

Based on the information above, it is considered that there will be no impact on any of the European designated sites and therefore no requirement for an Appropriate Assessment.

This opinion is offered subject to consultation with Natural England and other stakeholders and may be revised in light of their comments.