

# Robin Hood's Bay, Coastal Strategy Study

## **Strategic Environmental Assessment – Scoping Report**

08 July 2009

*Produced for*  
Scarborough Borough Council

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## Abbreviations

BAP	Biodiversity Action Plan
CA	Countryside Agency
CSS	Coastal Strategy Study
DLGC	Department of Communities and Local Government
EA	Environment Agency
EH	English Heritage
EIA	Environmental Impact Assessment
ha	Hectares
HER	Historic Environment Records
HRA	Habitats Regulation Assessment
JNCC	Joint Nature Conservation Committee
MA	Management Area
NE	Natural England
NYMNP	North Yorkshire Moors National Park Authority
ODPM	Office of the Deputy Prime Minister
PRoW	Public Rights of Way
RCZA	Rapid Coastal Zone Assessment
SA	Sustainability Appraisal
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument
SBC	Scarborough Borough Council
SEA	Strategic Environmental Assessment
SMP	Shoreline Management Plan
SPA	Special Protected Area
SSSI	Site of Special Scientific Interest

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# 1 Introduction

## 1.1 Background

### 1.1.1 *Strategic Environmental Assessment (SEA) of Whitby to Hundale Point*

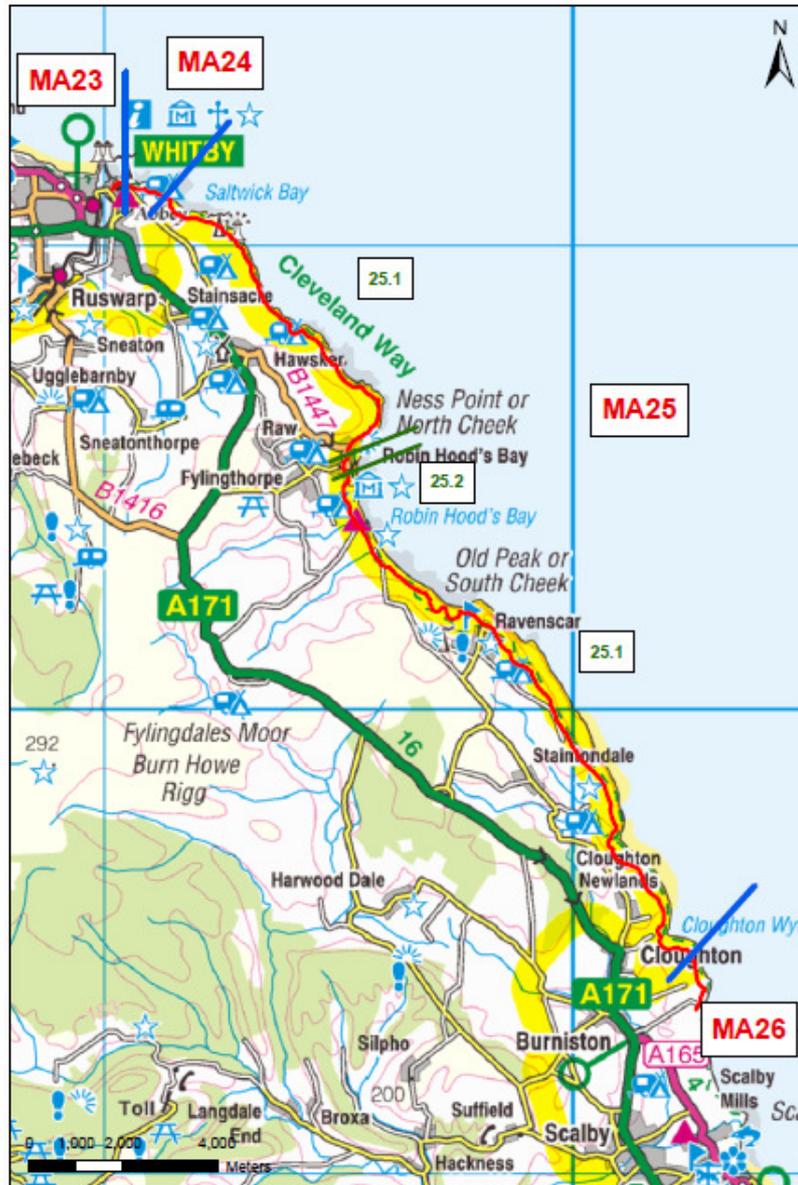
Mouchel have been commissioned by Scarborough Borough Council (SBC) to develop a Coastal Strategy Study (CSS) for the development and implementation of management policies for the area between Whitby and Hundale Point. The aim of the CSS is to develop a long-term sustainable management strategy for the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

In parallel, Mouchel have been commissioned to prepare an SEA of the CSS. The SEA will ensure that the predicted environmental impacts of implementing the CSS are understood and will recommend that the best options are taken forward using appropriate mitigation measures where necessary. A Habitats Regulations Assessment (HRA) is also being completed by Mouchel to determine significance of the impact of the CSS on the Special Area of Conservation (SAC).

### 1.1.2 *The Study Area*

The study area covers the coast extending from Abbey Cliff, to the south of Whitby, to Hundale Point, just north of Scalby. The area is 24.2 km in length and information has been collected for an area 100 m from the top of the eroding cliff edge. The study area can be seen on Figure 1.1.

Figure 1.1 – The study area including MA24 and MA 25



Within this stretch of coastline there are two Management Areas (MA); MA24 and MA25 (which is divided into MA25.1 and MA25.2). MA24 extends from Abbey Cliff in the north approximately 1.2 km south to Saltwick Nab. MA25 extends from Saltwick Nab approximately 23 km south to Hundale Point. MA25.1 covers a small length of coast at the village of Robin Hoods Bay and extends for approximately 0.5 km.

### 1.1.3 MA 24

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.

#### 1.1.4 MA25

This area covers a length of coast 23 km long and contains numerous national and European environmental designations. The coast from Abbey Cliffs to Robin Hood's Bay village comprises steep cliffs with a rock platform foreshore which is locally boulder strewn. The hinterland to the rear of the crest is a relatively flat plateau cut by small streams that overflow the cliffs.

The cliffs at the northern end of Robin Hood's Bay are steep, scree covered and extend 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) with the section from just south of Robin Hood's village to just north of Hundale Point as a Special Area of Conservation (SAC). The entire MA is within a 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.

#### 1.1.5 MA25.1

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 revetment.

### 1.1.6 *Strategic Environmental Assessment Legislation*

European Directive 2001/42/EC requires a formal assessment of the effects of certain plans and programmes which are likely to have significant effects on the environment. This European Directive is transposed into UK law by The Environmental Assessment of Plans and Programmes Regulations 2004 (Statutory Instrument 2004 No.1633).

The purpose of the SEA Directive is to 'provide for a high level of protection of the environment and contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.'

At present, there is no legal requirement to apply the Directive for Coastal Strategies and other Flood Management Plans and Programmes. However, as Coastal Strategies clearly help set the framework for future planning, have significant environmental implications and require extensive consultation, it is believed that adopting an SEA approach is appropriate. DEFRA strongly encourage all operating authorities to undertake SEA for Flood Management Plans and Programmes such as these. The approach of the SEA for the CSS will adhere to the SEA guidance originally set out by the former Office of the Deputy Prime Minister (ODPM), now Department of Communities and Local Government (DCLG).

## 1.2 **The SEA Process**

### 1.2.1 *Introduction*

The SEA and the CSS are being carried out in parallel. The ODPM Guidance sets out the stages of SEA. The stages are summarised in Table 1.1.

*Table 1.1 - Stages in the SEA process<sup>i</sup>*

SEA stages and tasks	Purpose
Stage A – Setting the context and objectives, establishing the baseline and deciding on the scope	
Identify other relevant plans, programmes and environmental protection objectives.	To establish how the plan or programme is affected by outside factors to suggest ideas for how any constraints can be addressed, and to help identify SEA objectives.
Collecting baseline information	To provide an evidence base for environmental problems, prediction of effects, and monitoring; to help in the development of SEA objectives.
Identifying environmental problems	To help focus the SEA and streamline the subsequent stages, including

SEA stages and tasks	Purpose
	baseline information analysis, setting of the SEA objectives, prediction of effects and monitoring.
Developing SEA objectives	To provide a means by which the environmental performance of the plan or programme and alternatives can be assessed.
Consulting on the scope of SEA	To ensure that the SEA covers the likely significant environmental effects of the plan or programme.
Stage B – Developing and refining alternatives and assessing effects	
Testing the plan or programme objectives against the SEA objectives	To identify potential synergies or inconsistencies between the objectives of the plan or programme and the SEA objectives and help in developing alternatives.
Developing strategic alternatives	To develop and refine strategic alternatives.
Predicting the effects of the plan or programme, including alternatives.	To predict the significant environmental effects of the plan or programme and alternatives.
Evaluating the effects of the plan or programme, including alternatives.	To evaluate the predicted effects of the plan or programme and its alternatives and assist in the refinement of the plan or programme.
Mitigating adverse effects	To ensure that adverse effects are identified and potential mitigation measures are considered.
Proposing measures to monitor the environmental effects of plan or programme implementation	To detail the means by which the environmental performance of the plan or programme can be assessed.
Stage C – Preparing the Environmental Report	
Preparing the environmental report	To present the predicted environmental effects of the plan or programme,

SEA stages and tasks	Purpose
	including alternatives, in a form suitable for public consultation and use by decision makers.
Stage D – Consulting on the Draft Plan or Programme and the Environmental Report	
Consulting the public and consultation bodies on the draft plan or environmental report	To give the public and the consultation bodies an opportunity to express their opinions on the findings of the Environmental Report and to use it as a reference point on commenting on the plan or programme.  To gather more information through the opinions and concerns of the public.
Assessing significant changes	To ensure that the environmental implications of any significant changes to the draft plan or programme at this stage are assessed and taken into account.
Making decisions and providing information	To provide information on how the environment Report and consultees' opinions were taken into account in deciding the final form of the plan or programme to be adopted.
Stage E – Monitoring the significant effects of implementing the plan or programme on the environment	
Developing aims and methods for monitoring	To track the environmental effects of the plan or programme to show whether they are as predicted; to help identify adverse effects.
Responding to adverse effects	To prepare for appropriate responses where adverse effects are identified.

The scoping process has been undertaken in order to confirm the focus of the SEA.

### 1.2.2 Scoping of the SEA

At this stage background information needs to be compiled for the SEA, deciding on the scope and level of detail of the information that must be included in the Scoping

Report. The draft Scoping Report forms the basis for formal consultation with environmental authorities including Natural England (NE), Environment Agency (EA) and English Heritage (EH) and will enable issues to be discussed in more detail. The responsible authority should consult the consultation bodies, whose advice must be provided within 5 weeks, but need not be followed<sup>ii</sup>. It may also be useful to consult the general public and affected parties at this stage to seek additional information and initial opinions.

In accordance with the SEA Directive the following information should be collated:

- Identifying other relevant plans, programmes and environmental protection objectives;
- collecting baseline information;
- identifying environmental problems (or key issues);
- developing SEA objectives; and
- consulting on the scope of SEA.

The SEA objectives are developed through the scoping process, form the framework against which the effects of the CSS can be assessed. The topics listed below have been adapted from Schedule 2 of the Regulations in order to meet the needs and requirements of the CSS SEA. As required in the Brief, background information has been collected for the following topics:

- Population;
- human health;
- flora, fauna and geology;
- soil & contamination;
- water;
- air;
- climatic factors;
- material assets;
- cultural heritage (including architectural and archaeological); and
- landscape.

### 1.2.3 *The Environmental Report*

The remaining stages of the SEA (Stages B to E) will be undertaken once the scope of the SEA has been agreed. This approach of dividing the SEA into two steps is important as it ensures that a clear and full understanding of the scope of the SEA is developed by all the CSS stakeholders before the assessment commences.

The Environmental Report will accompany the CSS and will include, in addition to the contents of the Scoping Report, the following items:

- assessment of impact of coastal strategy alternatives, including mitigation; and
- monitoring proposals and reporting plan which has been agreed by the competent authority and statutory consultees.

#### 1.2.4 *SEA Programme*

The programme for the SEA envisages that the draft Scoping Report will be available for consultation in July 2009 and that the Environmental Report will be completed by winter 2009 to accompany publication of the draft CSS. The Environmental Statement will be completed in Spring/Summer 2010 after public consultation on the CSS and will accompany the adopted version of the CSS.

#### 1.2.5 *Consultation*

To engage with the necessary consultees at an early stage, a steering group (which is discussed further in section 4.2) was developed with monthly meetings to identify possible issues and concerns as they occurred. Information from these meetings has been incorporated into the draft Scoping Report and formed the basis for the consultation process. In addition, a SEA workshop and public exhibition, held in the Fylingdales Village Hall on 7<sup>th</sup> May 2009, allowed issues to be further identified by a wider audience and the scope of the assessment defined.

## 2 Relevant Plans and Programmes

### 2.1 Introduction

The CSS will be affected by, and will affect, a range of plans, 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 the CSS and relevant information, objectives and requirements have been included in the development of SEA objectives.

A comprehensive list of plans and programmes has been produced using the information available at the time of publication of this report as shown in Table 2.1. The objectives of the legislation, plans and programmes that have been identified cover a broad range of issues; in this respect, it is likely that any which have been omitted will have been covered through consideration of those that have been included. Table 2.1 includes recommendations on how the objectives of the listed plans should be taken into account in the SEA of the CSS.

Table 2.1 - Policies and plans

Name of Document	Relevant Policies/Plans	How considered in the SEA
International		
EC Directive on the Conservation of Wild Birds 79/409/EEC (1979) <sup>iii</sup>	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	The SEA will consider the impacts of the CSS on European Birds.
EC Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC (1992) <sup>iv</sup>	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 SEA will take into account the conservation status of the study area and will seek to identify measures to further maintain and restore natural habitats.
The Convention on Biological Diversity. Rio de Janeiro (1992)	Article 6A requires each Contracting Party to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity.	The SEA will consider biodiversity in accordance with guidance on this issue.

Name of Document	Relevant Policies/Plans	How considered in the SEA
Environmental Assessment of Plans and Programmes Regulations (2004) <sup>y</sup>	These Regulations implement Directive 2001/42/EC of the European Parliament and Council on the assessment of the effects of certain plans and programmes on the environment as regards plans and programmes relating solely to any part of England.	The SEA is being undertaken in accordance with this European Directive.
National		
Coast Protection (Notices) (England) Regulations (2002)	An Act to amend the law relating to the protection of the coast of Great Britain against erosion and encroachment by the sea.	The SEA will consider the law in relation to the protection of the coast line.
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 SEA will consider the effects of the CSS on wildlife.
The Conservation Regulations (1994) (Habitats Regulation)	Transpose the requirements of the Habitats Directive building on existing legislation for the protection of species and habitats listed in the Directive.	The SEA will seek to identify measures to further maintain and restore natural habitats.

Name of Document	Relevant Policies/Plans	How considered in the SEA
The Countryside Rights of Way Act (2000)	The Act places a duty on Government Departments to make a definitive map of rights of way and to subsequently ensure their accessibility. It also requires improved access to open land and consideration if the affects of recreational users on nature conservation.	The SEA will consider the effects of the CSS on rights of way and access to the coast.
UK Biodiversity Action Plan	Conserve and enhance biological diversity within the UK and increase priority habitats. Contribute to the conservation of biodiversity through all appropriate mechanisms.	The SEA will consider biodiversity, will identify BAP habitat and, where practical, identify measures for meeting BAP targets.
Environment Act (1995)	Established the environment Agency, and transferred to it powers over the control of pollution and the conservation and enhancement of natural resources and the environment.	Not necessary, this Act transfers power but does not guide Regulations.

Name of Document	Relevant Policies/Plans	How considered in the SEA
Natural Environment and Rural Communities Act (2006) <sup>vi</sup>	The Act is primarily intended to implement key aspects of the government's rural strategy. It also addresses a wider range of issues relating broadly to the natural environment. The Act establishes an independent body – Natural England – responsible for conserving, enhancing and managing England's natural environment for the benefit of current and future generations.	Not necessary, this Act transfers power but does not guide Regulations.
Marine and Coastal Access Bill <sup>vii</sup>	to make provision for and in connection with the establishment of an English coastal walking route and of rights of access to land near the English coast;	The SEA will identify the impact of the CSS on coastal footpaths and access to the coast.
Circulars		
Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact Within the Planning System (2005) <sup>viii</sup>	Sets out planning policies on protection of biodiversity and geological conservation through the planning system.	The SEA includes an objective to protect biodiversity and geological conservation.

Name of Document	Relevant Policies/Plans	How considered in the SEA
Circular 14/97: Planning and the Historic Environment -Notification and Directions by the Secretary of State (1997)	The circular sets out requirements to notify and consult in reference to planning applications affecting the fabric or setting of listed buildings, conservation areas and historic parks and gardens.	The SEA will consider guidance on heritage and the historic environment.
Circular 02/93 - Public Rights of Way (1993)	This circular consolidates advice on recording, maintaining, protecting and modifying the rights of way network. It also outlines the powers which local authorities acquired under the Transport and Works Act 1992 to stop up or divert a footpath or bridleway in their area when it crosses a railway, otherwise than by a tunnel or bridge, where this is considered to be in the interests of public safety.	The SEA will consider guidance on Public Rights of Way.
Planning Policies		

Name of Document	Relevant Policies/Plans	How considered in the SEA
PPS9 Biodiversity and Geological Conservation ODPM (2005) <sup>ix</sup>	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.	The SEA will consider biodiversity and geological conservation in accordance with guidance on this issue.
PPG15 Historic Environment (2006) <sup>x</sup>	The PPG deals with those aspects of conservation policy which interact most directly with the planning system. These include matters of economic prosperity, visual impact, building alterations, traffic and affect on the character of conservation areas.	The SEA includes an objective to protect heritage and the historic environment.
PPG 16 Archaeology and Planning ODPM (2001) <sup>xi</sup>	Sets out the Secretary of State's policy on archaeological remains on land, and how they should be preserved or recorded both in an urban setting and in the countryside.	The SEA will consider the effect of the CSS on the archaeological resource and seek to avoid damage to archaeological remains.

Name of Document	Relevant Policies/Plans	How considered in the SEA
PPG 20 Coastal Planning (1992) <sup>xii</sup>	Covers the character of the coast, designated areas, heritage coasts and the international dimension. It discusses types of coasts, policies for their conservation and development and policies covering risks of flooding, erosion and land instability, as well as coastal protection and defence.	The SEA will consider the impact of the CSS on the natural movement of material in the study area and its interaction with other uses of the resource.
Regional		
The Yorkshire and Humber Plan: Regional Spatial Strategy to 2026 (2008) <sup>xiii</sup>	This provides a spatial development strategy at the broad regional level within which the Council can prepare its 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.	The SEA will consider the policies within the Regional Development Framework and will identify any conflicts between this planning tool and the strategy.
Good Practice Guides		

Name of Document	Relevant Policies/Plans	How considered in the SEA
Good practice guide on Planning for Tourism (2006) <sup>xiv</sup>	Tourism, in all its forms, is of crucial importance to the economic, social and environmental well-being of the whole country. The planning system has a vital role to play in terms of facilitating the development and improvement of tourism in appropriate locations.	The SEA will consider the impacts of the CSS on planning and tourism.
Local		
North York Moors National Park Authority Local Development Framework (2008) <sup>xv</sup>	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.	The SEA takes into account policies set out in the North York Moors National Park Authority Local Development Framework.
Scarborough Borough Local Plan (1999) <sup>xvi</sup>	The strategies provide frameworks for determining planning applications, as well as for preparing both Local Development Documents and Local Transport Plans	The SEA takes into account policies set out in the Scarborough Borough Local Plan.

Name of Document	Relevant Policies/Plans	How considered in the SEA
Scarborough Borough Local Development Framework (2006) <sup>xvii</sup>	This report provides a draft Appropriate Assessment of the Scarborough Borough Core Strategy Preferred Options development plan document. It has been published alongside the Core Strategy Preferred Options.	The SEA takes into account policies set out in the Scarborough Borough Local Development Framework.
Sustainability Report: Sustainability Appraisal of the Draft Core Strategy (Preferred Options) for Scarborough Borough Council (2006) <sup>xviii</sup>	Sets out guidelines for the future development and principal elements of the planning framework for Scarborough Borough. It will comprise a spatial vision, spatial objectives, spatial strategy, Core Policies and a monitoring and implementation framework.	SA objectives have been taken into account whilst developing the SEA objectives for the CSS.
River Tyne to Flamborough Head SMP2: Non Technical Summary for Scarborough Area (2007) <sup>xix</sup>	The Shoreline Management Plan (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 SEA will consider the SMP policy framework and how it will be affected by the CSS.

Name of Document	Relevant Policies/Plans	How considered in the SEA
Rapid Coastal Zone Assessment Survey (RCZA) Yorkshire and Lincolnshire: 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.	The SEA has collated information from the RCZA in the assessment of cultural heritage and archaeology. Information on assets has also been used to identify possible indicators.
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.	The SEA will consider the historic environment and will use the information in the strategy for the development of indicators.
Heritage at Risk: Yorkshire and the Humber, English Heritage (2008)	Identifies the heritage at risk in Yorkshire and the Humber. Two assets are identified as at risk in Scarborough BC, one of these (The Brewhouse) has been identified as within the study area.	The SEA considers all of the heritage at risk and has used the information to identify possible indicators.
North York Moors National Park: Coastal & Marine Biodiversity Action Plan (2006) <sup>xx</sup>	Identifies the Key ecological characteristics and features of the North York Moors coastline its importance and current conservation and action plans.	The SEA will consider the ecological conservation of the study area. Information on the Plan's actions has also been used to identify possible indicators.

Name of Document	Relevant Policies/Plans	How considered in the SEA
Scarborough BAP <sup>xxi</sup>	<p>The BAP aims to:</p> <p>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.</p> <p>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.</p> <p>Seek to maintain the existing maritime cliff resource of cliff-top and slope habitat, of about 4000 km.</p> <p>Maintain wherever possible free functioning of coastal physical processes acting on maritime cliff and slope habitats.</p> <p>Retain the amount of maritime cliff and slope habitats unaffected by coastal defence and other engineering works.</p>	<p>The SEA will consider local biodiversity, will identify local BAP habitat and, where practical, identify measures for meeting BAP targets. These have also been used as potential indicators.</p>

## 3 Baseline Environmental Conditions

### 3.1 Introduction

The study area was divided into three management areas in the SMP2: MA24, MA25 and MA25.1; these have been retained for this assessment. The management areas enable identification of different defence options and a consideration of their impact on features within the areas. The division of the management areas has been based on features such as similar coastal processes and land use characteristics.

A comprehensive review of baseline environmental data has been undertaken for the whole study area. The study area includes all assets from the seaward side of the low water line to a 100 m buffer area from the top of the eroding cliff inland. This area was identified as the area which could be impacted, either directly or indirectly, by the management of the coast. The review of the baseline environment covers the following categories which have been taken from the from the SEA Directive:

- Population;
- human health;
- flora, fauna and geology;
- soil & contamination;
- water;
- air;
- climatic factors;
- material assets;
- cultural heritage (including architectural and archaeological); and
- landscape.

Table 3.1 includes all the information gathered during the baseline data collection and its sources.

*Table 3.1 - Information gathered and sources*

Information	Source
Historic Environment Records (HER)	North Yorkshire County Council HER, North York Moors National Park HER
Rapid Coastal Zone Assessment Survey Yorkshire and Lincolnshire.	English Heritage

Information	Source
Listed Buildings & Scheduled Ancient Monuments	English Heritage
Conservation Areas	Scarborough Borough Council
Nature Conservation designations including SAC, SPA, SSSI	Natural England
Biodiversity Action Plan Habitat	Natural England
Ancient Woodland	Natural England
Agricultural Land Classification	Natural England
Environmental Stewardship Agreements	Natural England
Topographic Data	Ordnance Survey
Address Layer II Data including buildings and their use	Ordnance Survey
OS data including PRow, strategic footpaths, water courses and ponds	Ordnance Survey
2001 Census Data	Office of National Statistics
Cycle Routes	Sustrans
Geological Conservation Review	Joint Nature Conservation Committee (JNCC)
National Park	Natural England
National Trust Land	National Trust

## 3.2 Baseline Data

### 3.2.1 MA 24

#### 3.2.1.1 Population

This MA lies completely within the ward of Streonshalh which, at the time of the 2001 Census had a population of 4,863 (see appendix D). There are no residential properties within this area although there is a small street of nine addresses on the boundary of MA23, just north of MA24. Although these are outside of this MA they have still been identified as any management policy in this area will have an indirect impact on these properties.

Just to the north of this MA, in MA23, there are two buildings used by HM Coastguard Rescue. Both have large masts used for telecommunications which are located very close to the cliff edge. There is also a Youth Hostel located very close to Whitby Abbey (labelled No. 1 in the Tourism & Recreation Category on Figure 7.3.1). The location of dwellings, Coastguard Station and Youth Hostel can be seen on Figure 7.3.1.

#### 3.2.1.2 Human Health

Information on the general health of the ward of Streonshalh was collected from the Office of National Statistics and is located in Appendix D. In 2001, 68.91% of the population in this ward had 'good' general health with 21.67% having 'fairly good' health and 9.42% having 'not good' health. This is roughly consistent with the regional and national statistics.

The Cleveland Way strategic footpath runs through this MA at the top of the cliff edge and provides connectivity from the town of Whitby southwards to the village of Robin Hoods Bay. The location of the footpath can be seen on Figure 7.3.1.

#### 3.2.1.3 Flora, Fauna and Geology

There is one nationally important Site of Special Scientific Interest (SSSI) within this MA. Whitby –Saltwick SSSI is approximately 42.4 hectares (ha), of which 24.9 ha is within the North Yorkshire Moors National Park. The SSSI is designated for its geological interest including three main areas covering vertebrate palaeontology, palaeobotany and Toarcian exposures.

This stretch of coast is of international stratigraphic significance for its classic section in the Lower Toarcian; a critical Jurassic exposure forming the type locality for the Whitbian Substage. There are superb exposures in the highly fossiliferous Jet Rock and Alum Shale Series of *falciferum* and *bifrons* Zone age. Additionally there are excellent exposures of the unconformable contact of the here attenuated Dogger Formation with the Alum Shales.

Many of the best museum specimens of Middle Jurassic plant fossils originated in the cliffs to the south of Whitby. These came from a lens within the filled sandstone channels of the Saltwick Formation. Of the numerous species recorded, particularly noteworthy are the spectacular examples of bennettitalean reproductive organs, such as those of *Williamsonia* and *Weltricha*. This is an outstanding site for its superlative plant material and, particularly, their bearing on bennettitalean history.

The Upper Lias of the coast east of Whitby, the richest Upper Liassic reptile site in Britain, has yielded many fine specimens of plesiosaurs, ichthyosaurs, and marine crocodiles, including type specimens of 10 species. The first fossil *ÒalligatorÓ* from Whitby was reported in 1759, and discoveries since then have proved extremely valuable in studies in marine reptiles. The reptiles occur in the Main Alum Shales within the Alum Shale Formation (*bifrons* Zone; *commune* and *fibulatum* Subzones).

The extent of the SSSI can be seen on Figure 7.1.1.

**3.2.1.4 Soil & Contamination**

A significant proportion of the land at the top of the cliff is used for agricultural purposes and is considered as Grade 3 agricultural land.

A historic Alum works (which is also a Scheduled Ancient Monument (SAM)) is located to the east of the site which was mined, open cast, for Alum. It is not known if this area is contaminated although it is immediately at risk from coastal erosion.

**3.2.1.5 Water**

There are no ponds or rivers in this MA and therefore it is reasonable that this subject could be scoped out of requiring further assessment for this MA. No flooding data are available for this area and, even if flooding did occur, there are no assets which would be detrimentally impacted.

**3.2.1.6 Air**

Local or regional air quality is unlikely to be impacted by the CSS. The construction of any potential defences could result in impacts during the construction phase however these will be identified and mitigated in an Environmental Impact Assessment (EIA). Due to these reasons, this subject will be scoped out of requiring any further assessment for this MA.

**3.2.1.7 Climatic Factors**

The mean annual temperature over the area varies from just over 9 °C to around 10.5 °C. The temperature shows both seasonal and diurnal variations, January and February are the coldest months with mean daily minimum temperatures across the region close to 1 °C. Across the area, annual averages of sunshine are less than 1450 hours. The annual rainfall within this area is approximately 700 mm<sup>xxii</sup>.

The climate is not significantly different to the regional and national averages. It is unlikely that the CSS is going to impact significantly on the climate of the MA. For this reason, this subject will be scoped out of requiring any further assessment for this MA.

**3.2.1.8 Material Assets**

The natural resources within this MA are essentially related to agriculture which is discussed in Section 3.2.3.4 above.

**3.2.1.9 Cultural Heritage (Including Architectural and Archaeological)**

The MA is situated within the North Yorkshire and Cleveland Heritage Coast (see Figure 7.2.1). The Heritage Coast is a non-statutory landscape definition and is a significant historic resource. In June 2008, English Heritage commissioned a Rapid Coastal Zone Assessment (RCZA) from Whitby to Reighton. This aimed to establish a more comprehensive and reliable dataset assessment of the range and scope of the archaeological resource than is currently available. An overview of the information found in MA24 is located on the Heritage Overview (Figure 7.1.2).

Information has also been collected from the North Yorkshire Moors National Park Authority (NYMNP) containing all of the records on the Historic Environment Register (HER). There are several locally important archaeological features within the MA as identified on Figure 7.1.2 including several within the intertidal range and in the agricultural fields at the top of the cliff edge.

There is one Scheduled Ancient Monument (SAM) within the study area: the Saltwick Nab Alum Quarry which straddles MA24 and MA25. The works was historically used for the open cast excavation of Alum, a material used for the fabric dying trade in the 18<sup>th</sup> Century. Due to the development of new technologies, the demand for Alum reduced and the quarry was abandoned.

Just outside of the study area is a second SAM. Whitby Abbey is approximately 500 m from the top of the cliff edge and is located within MA23. At the SEA workshop, which is explained in more detail in Section 4 of this report, it was decided that the management proposed in MA24 could have a significant impact on the Abbey and therefore it should be scoped into the assessment. It is a Benedictine Abbey founded in 657AD. The ruins are open to the public and are owned and managed by English Heritage. One of the buildings designated within the SAM is listed as 'at risk' by English Heritage in their 2008 Heritage at Risk Report. The Brewhouse in Whitby Abbey consists of the ruins of a 17<sup>th</sup> Century brewhouse to the west of Abbey House. The site was converted into a water tank in the 19<sup>th</sup> Century and now stands in a 'very bad' (derelict) condition.

There are no listed buildings located within the MA.

#### 3.2.1.10 Landscape

A small section of the MA is included within the National Park. Some of the area to the east is National Trust land. A Landscape Character Assessment was commissioned by the NYMNP in 2003<sup>xxiii</sup> and identifies the Coast and Coastal Hinterland as a Key Landscape Character Type. The key characteristics of the area between Whitby and Cloughton include:

- Rolling coastal and coastal hinterland area, rising to a height of 233 m on Howdale Moor, underlain by Deltaic sandstones and mudstones with soft Lias mudstones and Cleveland ironstones in deeper valleys and on more low lying parts of coast overlain by deposits of boulder clay which give rise to intensive farming. Coastal areas are designated as part of the North Yorkshire and Cleveland Heritage Coast.
- In the south the area is defined mainly by the moorland edge or the edge of Harwood Dale Forest to the east, the moorland overshadowing the area and creating pinch points to the east of Robin Hoods Bay and at Stoupe Brow, where it extends to within 500 m of the coast.
- Elevated areas allow long distance views across the area and out to sea.

- Spectacular and rugged crumbling cliffs of sandstone, shale, limestone and ironstone, towering to a maximum height of 150 m at Ravenscar, have been affected by collapses on a large scale, which in places has resulted in a broad undercliff resting on the harder rocks below.
- Wide wave cut platforms are feature of the coastline and sand or sand/shingle areas are relatively infrequent. The cliffs and foreshore at Robin Hoods Bay expose Redcar mudstone, the beds of which sweep round the bay in a broad arc. Coastal protection measures are necessary in a number of locations.
- The cliffs are of considerable botanical interest with habitats ranging from dry heath and bracken, to scrub, woodland and wet flushes. Herb rich grassland covers the open crags. The cliffs are home to variety of nesting seabirds including Fulmar, Herring Gull, Kittiwake and Cormorant and are renowned for their geological and fossiliferous exposures.
- The area is drained by a series of steeply incised and winding minor becks which flow towards the coast, or in the north towards the River Esk. Waterfalls occur along the becks and sometimes where the becks meet the sea e.g. at Hayburn Wyke. The steep valley sides are frequently lined with deciduous woodland, much of which is ancient semi natural woodland.
- Inland from the coast, mixed arable and pasture farmland (for cattle, sheep and horses) is interspersed by plantations, shelterbelts and mainly Victorian farmhouses, marked by groups of trees. Close to the character area's inland edge, a number of medium sized mixed and coniferous plantations have been established, e.g. Haxby Plantation at Sneaton and on the side of Cloughton Moor. Small areas of scrub and upland moor/bracken mosaic occur.
- Regular fields of recent enclosure are divided by a mixture of closely trimmed hedgerows, neat stone walls of regular bedded sandstone and fences, with occasional trees, often stunted and wind blown, creating a bleak and open appearance. Elsewhere, the wooded valleys and settlements are flanked by small and irregular fields and a higher proportion of mature hedgerows that lend a sense of time depth to the area. A distinctive pattern of strip fields occurs to the north of Robin Hood's Bay.
- Robin Hood's Bay is a focal point for visitors to the area; the cluster of red roofed buildings perched one above the other, with a labyrinth of passageways and steps are crowded into a breach in the cliffs. The upper parts of the village have a mixture of red brick Victorian houses and more recent development.
- At Raven Hall, the remains of an early speculative venture to promote the area as a seaside resort has resulted in a pattern of streets and a few houses

which surround a square within the open cliff top location. A cliff top hotel is a prominent feature here.

- The busy A171 crosses part of the character area, frequently in an elevated and open location and has a significant intrusive effect on the area. Elsewhere a network of B roads and winding minor lanes link settlements.
- A disused railway between Scarborough and Whitby, now a cycle track, runs close to the coast and the Cleveland Way follows the cliff top. Camping and caravan sites, car parks and equestrian centres are numerous.
- Old brickworks, jet and alum quarries within the cliffs, now partly concealed by vegetation, add cultural interest to the area, including the remains of the Peak Alum Works at Ravenscar.
- Ancient remains include Bronze Age barrows and cairns, often in large clusters, and Iron Age cross ridge dykes.
- Detractors include masts south of Whitby and at Ravenscar, the traffic associated with the A171, the overhead electric line supported on pylons to the north of Sneaton, scattered modern suburban style development and prominently sited caravan sites. The loss of field boundaries has also detracted from the area.

There is a Conservation Area located within Whitby although this is outside of the study area.

### 3.2.2 MA 25

#### 3.2.2.1 Population

The MA is located within the wards (listed from north to south following the coast) of Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead. At the time of the 2001 national Census the population of these three wards was 8,305 (see Appendix A).

There are a range of isolated properties scattered within the study area which could be at risk from coastal erosion. These are mainly thought to consist of farm houses however there is a concentration of property at risk in the village of Robin Hood's Bay, which is the largest populated area within the study area and contains a number of public convenience and telephones, and a visitor's car park. This area is partly defended to the south however there are a number of properties on the northern edge of the bay which are currently undefended and could be at risk from coastal erosion.

There are a number of bus stops within Robin Hood's Bay which is the only source of public transport. A historic railway line runs through Robin Hoods Bay, connecting Whitby in the north and Scarborough in the south. This railway line is currently

disused but acts as a cycle path and is used by walkers. A proposed cycle path runs from here leading to Whitby Abbey and can be seen on Figure 7.3.1.

A range of tourist accommodation and two public houses are within the study area, most of which are located within Robin Hood's Bay. The Bay has three hotels, two public houses and a caravan site (See Appendix B and Figure 7.3.3). The Victoria Hotel, to the north of the Bay is the only building immediately at risk from coastal erosion as it is by a currently undefended frontage. Another Youth Hostel is located south of Robin Hood's Bay at Boggle Hole (see figure 7.3.4). Further south still, in Ravenscar there is a golf course attached to the Raven Hall Hotel which is just within the study area.

There are 14 commercial buildings within the study area, the majority of which are within the defended area of Robin Hood's Bay. These include offices, exhibition centres, sweet shop, tourist shop and fish and chip shop. There are two other commercial buildings within the study area to the south of Whitby in the Whitby Holiday Park (see appendix B and figure 7.3.1).

#### **3.2.2.2 Human Health**

Information from the Office of National Statistics on the health of the population of Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead was collected and is located in Appendix D. In 2001, 68.13% of the population in the wards had 'good health', 22.86% had 'fairly good' health and 9% had 'not good' health. This is roughly consistent with the regional and national statistics.

The Cleveland Way strategic footpath runs through the MA along the entire length of the coast. It provides connectivity from Whitby in the North to Robin Hoods Bay and Ravenscar within the MA, to Scarborough and Filey further south. It also connects the coast to the North York's Moors National Park and is used extensively by walkers, cyclists and horse riders for recreation and for access.

Additionally, there are numerous other footpaths which connect to and from the Cleveland Way into the Moors and on to the beach or cliff edge. Footpaths also extend along two of the becks which move toward the coast at Oakham Beck and Hayburn Beck. The total footpath distance in the study area is 34 km.

A cycle way also follows the coast and enters the study area to the north of Robin Hood's Bay. The route, which is on the site of a disused railway extends from Scarborough up to Whitby.

#### **3.2.2.3 Flora, Fauna and Geology**

There is one Special Area of Conservation (SAC) within this MA, Robin Hood's Bay - Maw Wyke to Beast Cliff. 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. A list of the conservation objectives and designated features of interest is located in Appendix C.

There are four SSSI's within the MA which area designated for their geological and fossil interest including Hayburn Wyke, Maw Wyke, North York Moors and Whitby to Saltwick. In 2009 Natural England completed a condition assessment on the sites, the results of which are outlined in Table 3.2.

Table 3.2 – Condition of SSSIs in MA25

Condition Assessment	Whitby – Saltwick SSSI	Robin Hood's Bay: Maw Wyke to Beast Cliff SSSI	Hayburn Wyke SSSI	Iron Scar & Hundale Point to Scalby Ness SSSI
% Area Favourable	100% in June 2009	98.75% in June 2009	100% in June 2009	100% in June 2009
% Area Unfavourable	-	1.25% in June 2009	-	-

**Whitby –Saltwick SSSI** is approximately 42.4 hectares (ha), of which 24.9 ha is within the North Yorkshire Moors National Park. The SSSI is designated for its geological interest including three main areas covering vertebrate palaeontology, palaeobotany and Toarcian exposures.

This stretch of coast is of international stratigraphic significance for its classic section in the Lower Toarcian; a critical Jurassic exposure forming the type locality for the Whitbian Substage. There are superb exposures in the highly fossiliferous Jet Rock and Alum Shale Series of falciferum and bifrons Zone age. Additionally there are excellent exposures of the unconformable contact of the here attenuated Dogger Formation with the Alum Shales.

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The Upper Lias of the coast east of Whitby, the richest Upper Liassic reptile site in Britain, has yielded many fine specimens of plesiosaurs, ichthyosaurs, and marine crocodiles, including type specimens of 10 species. The first fossil Alligator from Whitby was reported in 1759, and discoveries since then have proved extremely valuable in studies in marine reptiles. The reptiles occur in the Main Alum Shales within the Alum Shale Formation (bifrons Zone; commune and fibulatum Subzones).

**Maw Wyke – Beast Cliff SSSI** is approximately 365.25 ha and is designated for five distinct areas of geological interest, the coastal/woodland vegetation at Beast Cliff and the zonation of marine biotopes on the rocky foreshore.

The coastal cliffs and foreshore exposures around Robin Hood's Bay and Ravenscar constitute one of Britain's classic geological localities, and have been studied from at least the 1820s. The site includes an unrivalled and continuously exposed Lower Jurassic sequence dominated by mudrocks of the Lias Group, and capped by sandstones of the Ravenscar Group of early Middle Jurassic age. Throughout the succession there is excellent bio- and chronostratigraphic control based on a very detailed sequence of ammonite faunas. Many of these faunas form the basis for the formal definitions of Biohorizons, Subzone and Zones and the site is therefore of very great importance to European Jurassic chronostratigraphy. The area has also yielded the type specimens of the index species of many of these units.

The Lias Group, represented in ascending order by the Redcar Mudstone, Staithes, Cleveland Ironstone and Whitby Mudstone Formations contains stratotypes for several zones and horizons. This includes a very complete Sinemurian Pliensbachian boundary sequence within the Redcar Mudstone Formation, which may become a Global Stratotype Section and Point. Other highlights include a well preserved succession of biostratigraphical horizons within the Cleveland Ironstone and the most complete Toarcian succession in Britain represented by the Whitby Mudstone Formation.

This Lower Jurassic succession is also of great interest for its sedimentology and its fossil invertebrate faunas which both provide insights into the environmental conditions of the time. Occasional marine reptiles (ichthyosaurs and crocodiles) have been recovered from various levels.

The base of the Middle Jurassic sequence is well exposed around Blea Wyke and includes a relatively thick Dogger Formation with a famous and fossiliferous 'Nerinea Bed' of Aalenian (Opalinum to Murchisonae Zone) age. The succeeding dominantly,

non-marine Ravenscar Group is well developed including its component Saltwick, Eller Beck, Cloughton and Scarborough Formations (Aalenian to Lower Bajocian).

In the Beast Cliff area a number of plant bearing horizons occur within the Saltwick and Cloughton Formations. Many species occur which are seldom found at Yorkshire's other famous Jurassic plant localities. Many species of filicales, bennettitales, cycads and conifers are recorded from Beast Cliff; a prolific palaeobotanical locality with notable rarities.

The shores of Robin Hood's Bay between May Wyke and Beast Cliff are predominantly rocky, and moderately exposed to wave action. The varied geology along this coast plays a major role in creating an exceptionally wide range of habitats and associated communities for this part of the North Sea coast. Extensive examples of two rocky shore habitats are found here: moderately exposed flat bedrock and moderately exposed large and massive boulder fields. Slightly more exposed areas of the shore, such as at Whitehouse Hole are characterised by biotypes more typical of wave exposed shores.

Areas of gently dipping mudstones, shales and ironstones at the northern end of the site are characterised by complete zonation of rocky shore biotopes from the lichen-dominated *Verrucaria maura* biotope at the top of the shores, through fucoid biotopes characteristic of moderately exposed shores *Pelvetia canaliculata*, *Fucus spiralis*, *F. vesiculosus*, *F. serratus* into the kelp zone *Laminaria digitata* the latter which straddles the low water mark. In the Far Jetticks area, good quality, extensive areas of two nationally scarce red algal turf biotopes *Osmundea pinnatifida* and *Corallina officinalis* replace the more common fucoid-dominated biotopes and occupy much of the intertidal zone from the base of the cliff to the kelp zone. Here, the finely roughened bedding planes of mudstones belonging to the Cleveland Ironstone Formation provide surfaces for the firm attachment of holdfasts. The low shore kelp zone *Laminaria digitata* straddles the low water mark and forms the transition to highly rated subtidal kelp forest biotopes.

Robin Hood's Bay contrasts well with the Maw Wyke area as it is slightly more sheltered (but still falls within the moderately exposed selection unit). This area is particularly noteworthy for its rich and varied low shore communities, particularly the *Fucus serratus* and *Laminaria digitata* biotopes on bedrock and boulders. The presence of the relatively stable medium and large boulders provides additional habitats beneath and between the boulders for a wide variety of animal groups including sponges, anemones, bryozoans, crabs and shore fishes.

Along the southern section of the site, the shore between Blea Wyke and Beast Cliff is predominantly composed of large and massive boulders resting on a mudstone platform. The biology of this area again demonstrates the underlying effects of active geological processes. The upper shore lacks typical fucoids and is instead made up of ephemeral communities of green and red algae *Enteromorpha* sp., and *Porphyra* sp. This composition reflects the unstable nature of the friable upper shore talus beneath the cliffs. In the mid- and low-shore areas the boulders are characterised by

typical biotopes of fucoids, kelps and red algal turfs. Areas of the shore lying below recent stumps, are dominated by dense turfs of the nationally uncommon *Rhodothamniella floridula* biotope which tolerates sediment scouring by binding sediment to form a cushion-like turf.

Hawsker Bottoms is also a key palaeobotanical and stratigraphical site and has the best inland exposure of the Scarborough Formation, here near the northern limit of its outcrop. It has provided one of the most varied fossil faunas from this portion of the Middle Jurassic, including the only corals so far recorded from this formation. The nearby Maw Wyke is an outstanding locality of national importance for the study of fossil ferns. A lens, within the Saltwick Formation, yielded particularly fine examples of the genera *Coniopteris*, *Cladophlebis* and *Phlebopteris* including fertile axes essential to systematic studies.

Robin Hood's Bay is an important site for coastal geomorphology for a series of welldeveloped shore platforms cut mainly across the outcrops of Lower Lias shales – siltstone rhythms. The surface morphology of the platforms reflects the arrangement of bedding within a broadly anticlinal structure which has been planed off. The cliffs near North Check and South Check include Middle Lias sandstones, relatively more resistant than the Lower Lias shales, whilst those within the Bay predominantly occur in Lias shale till and are locally affected by considerable mass movements. Robin Hood's Bay provides important contrasts with other platform sites, firstly through its location within the area affected by North Sea wave climates, and secondly in having been subject to glacial and post-glacial processes prior to sea-level reaching its present condition. The greater variety of interest, stratigraphical, palaeontological and geomorphological, make the Hawsker-Robin Hood's Bay-Ravenscar-Beast Cliff area one of the most famous and important for British Geology.

Much of Beast Cliff is covered by scrub and woodland. Ash *Fraxinus excelsior* dominates the canopy with birch *Betula* spp., hazel *Corylus avellana* and field maple *Acer campestre*, although in more acidic situations oak *Quercus aff. robur*, rowan *Sorbus aucuparia* and holly *Ilex aquifolium* are frequent. Great wood-rush *Luzula sylvatica* is abundant on the steep flushed slopes, whilst dog's mercury *Mercurialis perennis* and opposite-leaved goldensaxifrage *Chrysosplenium oppositifolium* are plentiful in the ground flora of the terrace.

Sandstone boulders support a luxuriant growth of mosses and ferns, including hart's-tongue *Phyllitis scolopendrium* and soft shield-fern *Polystichum setiferum*. Pools on the cliff shelf have been colonised by common club-rush *Schoenoplectus lacustris* and are fringed by alder *Alnus glutinosa*, willow *Salix* spp., and greater tussock-sedge *Carex paniculata*.

North of Beast Cliff the vegetation is more open and reflects alternating strata of rich and poor base-status. Typical of more calcareous clays are quaking-grass *Briza media*, glaucous sedge *Carex flacca*, kidney vetch *Anthyllis vulneraria* and grass-of-Parnassus *Parnassia palustris*, whereas heather *Calluna vulgaris*, bell heather *Erica cinerea*, crowberry *Empetrum nigrum*, goldenrod *Solidago virgaurea* and wavy hair-

grass *Deschampsia flexuosa* characterise more acidic sandstone outcrops. Bracken *Pteridium aquilinum* and various shrub species such as gorse *Ulex europaeus*, broom *Cytisus scoparius*, goat willow *Salix caprea* and rowan *Sorbus aucuparia* are present in varying densities over much of the site.

**Hayburn Wyke SSSI** is approximately 21 ha, and is managed by the Yorkshire wildlife trust as a nature reserve. The Middle Jurassic cliffs at Hayburn Wyke are overlain by a thick deposit of boulder clay. The Hayburn Beck, which falls onto the beach in a waterfall, has carved a channel through the rocks to expose the Hayburn Wyke plant bed. The plant bed forms part of the Cloughton Formation of the Middle Jurassic and contains a rich fossil fauna, comprising sixty species, dominated by cycads. Of particular interest is *Hepaticites haiburnensis*, a marchantiaceous liverwort, known only from this locality. The geological interest of this site has not yet been fully evaluated, but it is without question an outstanding fossil plant locality.

Deciduous woodland covers the slopes above the cliff shelf and extends some way up Hayburn Wyke Beck, merging into a mixed broad leaved and conifer woodland. The canopy is dominated by oak (both *Quercus petraea* and *Q. robur*) with ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, birch *Betula pubescens* and elm *Ulmus glabra*. There are several standards of large-leaved lime *Tilia platyphyllos*. The understorey of shrubs includes hazel *Corylus avellana*, holly *Ilex aquifolium* and goat willow *Salix caprea*, and there is a rich ground flora with sanicle *Sanicula europaea*, opposite-leaved golden saxifrage *Chrysosplenium oppositifolium*, wood millet *Milium effusum*, male fern *Dryopteris filix-mas*, lady fern *Athyrium filix-femina* and hart's tongue fern *Phyllitis scolopendrium*. The damp conditions favour mosses and liverworts. To the north of Hayburn Wyke and to the south of Little Cliff, the wood gives way to willow scrub *S. caprea*, *S. cinerea* with a ground flora of great horsetail *Equisetum telmateia* and hemp agrimony *Eupatorium cannabinum*. Herbs of note at this site include the introduced elecampane *Inula helenium* and grass of Parnassus *Parnassia palustris*. In places the unstable clay and shale is bare of vegetation or is colonised by species such as colt's-foot *Tussilago farfara*.

Birds known to breed include chiffchaff, willow warbler, pied flycatcher, redstart and blackcap.

**Iron Scar & Hundale Point to Scalby Ness SSSI** is approximately 125 ha and encompasses a cliff with a range of intertidal reefs. The cliffs and intertidal reefs between Iron Scar and Scalby Ness provide an almost complete section through the rocks of the Lower and Middle Jurassic Aalenian, Bajocian and Bathonian Stages and the exposures here are of national importance. In addition important fossil plant localities occur at Cloughton Wyke and Scalby Ness.

Within the Iron Scar to Hundale sector of the site, the Aalenian to Bajocian units of the Jurassic are well displayed. The best exposure of the Eller Beck Formation in Yorkshire is seen at Iron Scar and exhibits some of the most spectacularly-preserved trace fossils seen anywhere in the Yorkshire Middle Jurassic. Hundale Point is the type locality for the Scarborough Formation, the most important marine horizon to

occur within the dominantly non-marine Middle Jurassic rocks of Yorkshire which yields ammonite fossils of great importance for determining the exact age of the Yorkshire Middle Jurassic sequence. At Cloughton Wyke there is one of the best exposures of the 'Millepore Bed' in Yorkshire, with an abundant marine fauna, including corals. The adjacent non-marine 'Deltaic beds' (especially the Gristhorpe Member) are of great interest for their palaeobotany and sedimentology.

At Cloughton Wyke a rich fossil plant horizon has yielded over 60 species of well-preserved plants including *Ptilophyllum*, *Otozamites* and *Coniopteris*. Of particular importance is the occurrence of both male and female reproductive elements of the plant *Nilsonia tenuinervis*, which has enabled palaeobotanists to build up reconstructions of this fossil cycad. This locality is nationally important for studies of systematic palaeobotany, especially of the gymnosperms.

The coast section between Hundale Point and Scalby Ness exposes the best and most important sections of the Scalby Formation. In the vicinity of Hundale Point the Moor Grit is well-displayed and is interpreted as the depositional product of a braided river system. Between Long Nab and Scalby Ness an exhumed meander belt is clearly seen in the cliff and foreshore exposures of the Long Nab Member. Numerous fossil dinosaur footprints occur in the Scalby Formation at Burniston Wyke. The whole section from Hundale to Scalby is of high sedimentological importance and is the subject of continuing research. As a model for aiding the interpretation of some Middle Jurassic oil reservoir formations of the northern North Sea (e.g. the Brent Sands), the section is of considerable interest to, and is frequently visited by, geologists in the oil industry.

At Scalby Ness plant beds within the Scalby Formation contain an important fossil flora, well-known for its outstanding examples of numerous Ginkgoales. The most significant, *Ginkgo huttoni*, here at its type locality, closely resembles the only extant species, *Ginkgo biloba*.

There are four areas containing Ancient Woodland which are located in Prickly Bank, Stoupe Beck, Beast Cliff and Hayburn Wyke.

Beast Cliff ancient woodland comprises mainly of ash *Fraxinus excelsior* which dominates the canopy with birch *Betula spp.*, hazel *Corylus avellana* and field maple *Acer campestre*, although in more acidic situations oak *Quercus aff. robur*, rowan *Sorbus aucuparia* and holly *Ilex aquifolium* are frequent.

Hayburn Wyke ancient deciduous woodland covers the slopes above the cliff shelf and extends some way up Hayburn Wyke Beck, merging into a mixed broad leaved and conifer woodland. The canopy is dominated by oak (both *Quercus petraea* and *Q. robur*) with ash, sycamore *Acer pseudoplatanus*, birch *Betula pubescens* and elm *Ulmus glabra*.

Additional work has been completed in Robin Hood's Bay which identified the presence of badgers to the north of the village. It is likely that a number of protected species will be present along the coast.

#### **3.2.2.4 Soil & Contamination**

A significant proportion of the land at the top of the cliff is used for agricultural purposes and is considered as Grade 3 agricultural land.

A number of areas within the study area are currently part of an environmental stewardship scheme in which the land owners will get money for the environmental management of their fields.

There are a number of potentially contaminated areas within the study area which could be impacted by the erosion along the coast. There are a number of historic pits which were used for the excavation of Alum, some of which are no designated as SAMs. The potential contaminants within these pits are not known. There are also a range of man made sources of contamination including telecommunication masts, tanks (which are thought to be associated with water or sewage treatment), two water filtration sites and a electricity sub station. The location of these can be seen on Figures 7.3.1-7 using the Address Layer Reference Key in Appendix B

#### **3.2.2.5 Water**

There are numerous small water courses within the study area. These generally follow valleys from the North Yorks Moors National Park or are from springs close to the cliff edge and flow into the sea. The major water courses include:

- Oakham Beck;
- Kings Beck;
- Mill Beck;
- Stoupe Beck; and
- Hayburn Beck

There is no flooding information available for the study area although coastal flooding is not thought to be an issues along this coast line due to the steep relief of the cliffs along the majority of the frontage.

#### **3.2.2.6 Air**

This information is the same for MA24 and is outlined in section 3.2.1.6.

#### **3.2.2.7 Climatic Factors**

The mean annual temperature over the area varies from just over 9 °C to around 10.5 °C. The temperature shows both seasonal and diurnal variations, January and February are the coldest months with mean daily minimum temperatures across the

region close to 1 °C. Across the area, annual averages of sunshine are less than 1450 hours. The annual rainfall within this area is approximately 700 mm<sup>xxiv</sup>.

The climate is not significantly different to the regional and national averages. It is unlikely that the CDS is going to impact significantly on the climate of the MA. For this reason, this subject will be scoped out of requiring any further assessment for this MA.

#### **3.2.2.8 Material Assets**

The natural resources within this MA are essentially related to agriculture which is discussed in Section 3.2.3.4 above.

A small fishing population is thought to use Robin Hood's Bay and a fishery (bay fisheries) is located within Robin Hood's Bay. No information has been collected on the amount of fish collected from the study area specifically however the North East Sea Fisheries Committee regularly collect data on the fishing effort in the north East<sup>xxv</sup> (including Robin Hood's Bay). The report for 2008 indicates that the only fishing which occurs in Robin Hood's Bay is potting and in 2008 there were 3 boats, 5 men and 540 pots. Since the last survey in 2006 there has been a reduction in boats (4 in 2006) and men (7 in 2006) but the number of pots has increased significantly (340 in 2006).

A disused mining pit is also within the study area between Robin Hood's Bay and Whitby. It is currently unknown what was excavated from this pit. Although from a recent site visit it looks to have been re colonised.

#### **3.2.2.9 Cultural Heritage (including Architectural and Archaeological)**

There are six recorded scheduled monuments within the MA including part of the Saltwick Nab Alum Quarry, the Stoupe Brow Alum Works, Peak Alum Works, Burnt Howe and a World War II radar station. All of the SAMs can be seen on Figures 7.2.1-7.

There is an enormous range of historic information contained within the North Yorkshire Moors and North Yorkshire County Council Historic Environment Records and additional information found by English Heritage in the Rapid Coastal Zone Assessment.

There are several listed buildings located within the study area, most of which are within the defended area of Robin Hood's Bay. Several other are more at risk along the frontage including some on the northern cliff of Robin Hood's Bay and two other farm houses, one to the north and one to the south of Robin Hood's Bay (see Figures 7.2.4 and 7.2.2 respectively)

#### **3.2.2.10 Landscape**

The majority of the MA is located within the North York Moors National Park and there are several areas of farmland which are dispersed along the coast. The

findings of a Landscape Character Assessment are detailed in Section 3.2.1.10 of this report.

## 4 Consultation

### 4.1 Introduction

The SEA Directive requires the following consultation:

- Authorities which, because of their environmental responsibilities, are likely to be concerned by the effects of implementing the plan or programme, must be consulted on the scope and level of detail of the information to be included in the Environmental Report;
- the public and the Consultation Bodies must be consulted on the draft plan or programme and the Environmental Report, and must be given an early and effective opportunity within appropriate time frames to express their opinions;
- other EU Member States must be consulted if the plan or programme is likely to have significant effects on the environment in their territories; and
- the Consultation Bodies must also be consulted on screening determinations on whether SEA is needed for plans or programmes.<sup>xxvi</sup>

For this SEA, consultation with a range of consultees was initiated at an early stage. This provided useful information from stakeholders and public opinion on issues relevant to the plans and programmes of the SEA.

### 4.2 Steering Group

A regular monthly steering group was initiated consisting of statutory consultees and significantly affected parties, including;

- Natural England;
- English Heritage;
- Environment Agency
- Scarborough Borough Council;
- Scarborough Parish Council;
- The National Trust;
- National Park;
- Councillors; and
- Mouchel.

Information and input from the statutory consultees was included at each stage of the SEA process which helped to guide the scope of the report.

### 4.3 SEA Workshop

A SEA workshop was held on 7<sup>th</sup> May 2009 in the Fylingdales Village Hall. Initial consultation letters were sent out to twenty one statutory and non-statutory

organisations inviting them to a facilitated workshop on the SEA (see Appendix D for the full list). The workshop included a presentation on SEA and then a discussion on proposed SEA objectives. Consultees raised their opinions and concerns for a number of aspects of the SEA. The workshop was attended by representatives of the following organisations:

- Natural England;
- North Yorkshire Sea Fisheries Committee;
- North Yorkshire Moors National Park;
- The Heritage Coast;
- Robin Hood's Bay Tourism Committee;
- Fylingdales Parish Council;
- Scarborough Town Council;
- Cleveland Way Authority;
- SBC; and
- Mouchel.

Participants provided a range of comments on the baseline data and SEA objectives. Fourteen comments were made on the baseline data which are outlined, with responses, in Table 4.1. Comments on the objectives are outlined in Section 5 of this report.

*Table 4.1 – Comments from SEA workshop*

Comments on Baseline Data	Response
Consideration of properties which have access solely from the Cleveland Way	All properties within the study area have been identified.
Consideration of properties with access only from the old railway line	All properties within the study area have been identified.
Consider moor to sea cycle network not just coastal.	The additional east-west cycle way and the proposed cycle way to Whitby have been considered.
Include Environmental Stewardship agreements (agri-environment schemes)	Environmental stewardship agreements have been identified on the constraints mapping and are considered in the baseline data.
Ensure the NYCC minerals & waste core strategy is reviewed.	The NYCC mineral and waste strategy has been reviewed and is in the list of reviewed policy documents.

Comments on Baseline Data	Response
Ensure the Heritage coast intertidal survey is considered.	Rapid Coastal Zone Assessment from English Heritage is included in the baseline data.
Need to include information from the sea fisheries committee.	Information has been collected on fishing volume and type within the study area for 2006 and 2008.
The full network of public rights of way needs to be considered not just strategic ones. Also need to consider how they work as a collective.	The full network of PROW within the study area has been collated and has been mapped.
There should be no boundary on the seaward side of the Heritage Coast.	This has been extended.
Conservation areas should be included in the data.	There are no Conservation Areas within the study area. The Conservation Areas of Whitby and Flyingthorpe are outside of this.
Fylingthorpe is a separate are to Robin Hood's Bay and should be labelled separately.	Fylingthorpe has been identified on the Figures.
Information showing the grades of building and identifying any listed buildings at risk.	This has been identified on the heritage Figures.

Following the SEA workshop, a public exhibition was held where the public were invited to leave their comments, approximately 25 people attended the event. Relevant comments have been addressed and incorporated into the draft Scoping Report where possible.

Table 4.2 summarises the issues that the general public highlighted at the event and responses to each of the comments.

Table 4.2 - Comments from SEA public exhibition

Post it Note comments on maps	Response
Maintenance of sea defences poor - grants for the work not for the maintenance.	The CSS will endeavour to ensure that the best coastal strategy will be implemented for the area and will consider the next 100 years.

Post it Note comments on maps	Response
Protruding rock armour was dumped in error, as High Point Rendel admitted at the time!	The existing sea defence was strategically placed to reduce the impact of wave action upon the coastline.
Remove rock armour at south end, which was extra to requirements. This traps people when walking to RHB on a rising tide, rather than the works enhancing access as originally intended.	The SEA will aim to reduce the impact on the coastal footpaths however the disruption of existing footpaths will not be rectified within its scope.
Please remove the protruding rock armour that cuts people off when the tide is in. People with children, dogs, pushchairs and older people cannot possibly clamber over those rocks and don't want to get wet either!!	The existing sea defence was strategically placed to reduce the impact of wave action upon the coastline, the removal of which may result in detrimental effects on coastal erosion.
Erosion on railway cycle track which Scarborough Council ignores.	The SEA will follow guidance through policies on the effects of erosion on existing access routes throughout the study area. This will include assessing the existing erosion effects to the existing cycle routes.
Minimising Pollution' This is a short term objectives. 'concrete', 'vehicles', 'septic tanks' et al can be contained easily - long term protection is more important.	The SEA will consider minimising pollution in direct relation to the CSS in both the short and long term.
Minimising pollution is a cost of long term protection. It is not an objective but a tactic.	Minimising pollution is an important objective when considering the potential construction of coastal defences and the minimising of pollution during construction e.g. waste and emissions. The SEA will consider the potential amount of pollution for different management strategies.
Pumping stations and sewage treatment sites - storm outfall on beach several storms resulting in release of sewage on beach in emergencies.	The pollution caused from storm outfall is considered outside the scope of the SEA however it will consider the impact of any coastal retreat on pollution events caused by storms.

Post it Note comments on maps	Response
Local services have to be protected, not eroded by stealth if the community is to prosper.	The SEA will consider the impact of coastal management on local services, including any that may be at risk from erosion.
Stricklands tip - old (Victorian) tip on edge of cliff on clay section of Robin Hoods Bay beach - much eroded away now.	The SEA will consider the impacts of potential contaminated land within the CSS; this may also include assessing the potential release of pollution from a variety of sources.
Boggle Hole Sewage Treatment Works needs to be considered.	The treatment works is not within the 100 m study area boundary.
Old railway line needs to be an important link for walkers etc. The idea of trying to reinstate it as a working train line should not be considered.	The existing railway link has been considered with the scope of this report. Guidance from existing policies will be followed. Currently we have found no evidence of policies or proposals to reinstate the link.
Should the WWII pill box be preserved or demolished?	The WWII pill box will be considered within the scope of the report because it is of heritage value. Further assessment will need to be carried out to determine the impact of different management options.
Second World War pillbox on cliff edge between Boggle Hole and Robin Hoods Bay in vulnerable state and could be dangerous.	The WWII pill box will be considered within the scope of the report because it is of heritage value. Further assessment will need to be carried out to determine the impact of different management options.
Alum quarries and brickworks at Ravenscar need to be investigated.	The Alum Quarries have been recognised and considered within the scope of the SEA. No information on the brickworks could be found within the study area.

Post it Note comments on maps	Response
Think about disabled access and problems of access for the elderly where appropriate.	Access will be considered within the scope of the SEA. The development of the preferred options will consider the impact of disabled access and access for the elderly.
There is an area of National trust Land (1 acre) being the steps leading to the beach in Robin Hoods Bay.	This piece of land has been identified within the scope of the SEA.
Would like to see the lower and top of cliff area between Robin Hoods Bay and Boggle Hole left to nature. No concrete or alien boulders and absolutely no development or public invasion on the lower cliff SSSI.	The area will be assessed in the Environmental Report and recommendations will be made for its management.
There is continuous woodland between the two sections of ancient woodland by Hayburn Wyke.	This area has been considered within the scope of the SEA.
The area of cliff left without protection (insisted upon by Natural England) to show strata is now showing signs of under cutting due to pebble erosion.	This area has been included within the scope of the SEA.
Planning and building regs policies which reduce water runoff will reduce flash floods and erosion of cliff tops. Less tarmac, less concrete etc. less drainage over the cliff top.	Geotechnical studies are underway to identify the extent of surface runoff in the village of Robin Hoods Bay and the impacts on coastal erosion.
Small stream at end of Victoria Terrace approx. 10 m before Rocket House. Discharges over cliff edge. This washes away clay at cliff top. This is very extensive.	Geotechnical studies are underway to identify the extent of surface runoff and the impacts on the coastal erosion. These will be incorporated into the decision making process.
I agree with comments that the 'stream' at the end of Victoria Terrace discharges over the clay top of the cliff and over the years has caused considerable erosion - could it not be piped to help?	Geotechnical studies are underway to identify the extent of surface runoff and the impacts on the coastal erosion. These will be incorporated into the decision making process.

Post it Note comments on maps	Response
<p>Protection from north of existing 'sea wall' to stabilise Victoria Terrace are to almost the 1st field on the cliff (rocket post field) is needed to preserve the existing housing and Edwardian areas of RHB. To combine the effects of both land and sea erosion. Nature will have to have it's own effect on the majority of our coastline</p>	<p>The area will be assessed in the Environmental Report and recommendations will be made for its management.</p>

## 5 Key Issues and Objectives

### 5.1 Key Issues

There are several key issues which have been identified based on the issues uncovered in the baseline data. These key issues have formed the basis for identifying the objectives against which each of the potential management options will be assessed. The key issues include:

- The populated area of Robin Hood's Bay which is an important centre for tourism and local business. The frontage is at immediate risk from erosion which could impact several properties;
- The Cleveland Way is a strategic coastal footpath which is heavily used and is important for access, tourism and recreation.
- The ecology within the study area is heavily protected with European and nationally important designations. In total there is one SAC, four SSSIs and four areas of ancient woodland;
- The geology of the study area is nationally important and is an important factor in the designation of the four SSSIs; and
- The entire coastline is designated as a Heritage Coast due to its significant archaeological and heritage value. There are 6 SAMs and 172 listed buildings within the study area including the Grade I buildings surrounding Whitby Abbey;

### 5.2 Objectives

SEA objectives provide a basis to determine if the management strategy adopted for a specific location will have detrimental impacts on different aspects of the environment. The SEA objectives have been derived from environmental protection legislation or obtained from the objectives of relevant plans and programmes, specifically the Yorkshire & Humber RSS, Scarborough Core Strategy and North Yorkshire Moors Core Strategy. Opinions and objectives collected from consultation at the SEA workshop on 7<sup>th</sup> May 2009 have been considered accordingly. Appendix E contains the audit trail in the development of the objectives and how they have been refined from the SEA workshop.

SEA objectives are listed in Table 5.1. Table 5.2 identifies the objectives and a range of possible indicators given the information collected to date and taken from regional and local monitoring report sources.

Table 5.1 - SEA Objectives

Topics	Objectives
Population	1. To provide conditions for business success, economic growth and investment with specific reference to the fishing and farming industries.
	2. To support the tourism industry through the provision of access to facilities and attractions.
	3. Maintain vibrant local communities
	4. Where practicable ensure the safety and security of people and property.
	5. To maintain the transport network, encouraging the use of cycling, walking, minimising traffic and promoting access to the countryside.
	6. Maintain access to local facilities and services whilst minimising environmental impacts.
	7. Ensure local needs are met locally.
	8. To support creativity, innovation and the appropriate use of technology.
Human Health	9. To promote good health through the provision of access to leisure facilities including access to the network of footpaths.
	10. Minimise negative impacts to human health (including pollution and stress) and safeguard positive impacts.

Topics	Objectives
Flora and Fauna	11. To conserve and seek to enhance the terrestrial biological and geological environment, particularly designated sites and protected species.
	12. To conserve and seek to enhance the coastal and marine biological and geological environment, particularly designated sites and protected species.
	13. Maintain and safeguard opportunities for all to access and understand the ecological and geological environment.
	14. Minimise pollution to levels which do not damage the biological or geological environment.
Soil	15. Minimise pollution to levels which do not damage soil.
Water	16. Minimise pollution to levels which do not damage the water environment including surface water and ground water.
	17. To ensure any potential works do not increase the risk of flooding.
Material Assets	18. Manage natural resources in a way which sustain their environmental qualities as well as their productive (or economic) potential.
Cultural Heritage (including architectural and archaeological)	19. To maintain and safeguard opportunities for all to access and understand local heritage.
	20. Where practicable preserve and enhance all aspects of the historic environment.
Landscape	21. Maintain and, where possible, enhance the special landscape, local distinctiveness and settlement character.

### 5.3 Indicators

The use of indicators to monitor the environmental effects of implementation of the CSS is essential to its success. The SEA objectives have been derived from the review of related plans and programmes, and the baseline data. In some cases indicators have been recommended in the absence of adequate baseline data. In these cases, the competent authority will be required to collect relevant information in order for the environmental performance of the strategy to be monitored.

A list of the objectives, indicators, targets, trends, problems/constraints and the source of information is provided in Table 5.2.

Table 5.2 – Objectives, indicators, targets and trends

Objective	Indicators	Available Information	Targets	Trends	Problems / Constraints	Source of Information
1.To provide conditions for business success, economic growth and investment with specific reference to the fishing and farming industries.	A. Potting effort in RHB and Whitby	2008: 3 boats, 5 men, 540 pots.	Maintain/Increase fishing activity in the area	Reduction in boats and men, increase in number of pots.	Availability of fish stocks, potential introduction of no take zones.	Summary of Fishing Effort 2008, North Eastern Sea Fisheries Committee (2008)
	B. Number of farm diversification schemes approved	8 approved in 07/08 by NYMNPA; 10 approved in 07/08 by SBC	Maintain/increase agricultural productivity in the area.	Slight increase in the North York Moors from 6 in 06/07 to 8 in 07/08.	Baseline data may not be completely inside the study area as data from NYMNPA and SBC are for their respective total areas.	Annual Monitoring Report 2008, North York Moors National Park Authority (2008) & Annual Monitoring Report 2008, Scarborough Borough Council (2008).
	C. Number of people employed in the agriculture, hunting and forestry sector	257 in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead.	Maintain/increase agricultural productivity in the area.	4.6% of working people in study area compared with 3.2% in Scarborough Borough and 1.6% in Yorkshire and The Humber.	None	Information from the Office of National Statistics 2001 census
	D. Number of people employed in the fishing sector	39 people in wards of Streonshalh and Fylingdales. No people in the fishing industry in Scalby, Hackness & Stainton Dale and Lindhead.	Maintain/Increase fishing activity in the area	0.7% of working people in study area compared with 0.3% in Scarborough Borough and 0.04% in Yorkshire and The Humber.	Availability of fish stocks, potential introduction of no take zones.	Information from the Office of National Statistics 2001 census
2.To support the tourism industry through the provision of access to facilities and attractions.	E. Number of holiday cottages/hostels/hotels granted planning permission	In 07/08 84 self catering accommodation units were approved in NYMNPA	Increase sustainably	Difficult to compare, in 06/07 50 new holiday cottages and 5 additional hotel bedrooms.	Baseline data may not be completely inside the study area as data from NYMNPAs entire area.	Annual Monitoring Report 2008, North York Moors National Park Authority (2008)
	F. Number of new visitor/recreation facilities granted planning permission	1 approved in 07/08	Increase sustainably	Approval in 06/07 was the same as 07/08.	Baseline data may not be completely inside the study area as data from NYMNPAs entire area.	Annual Monitoring Report 2008, North York Moors National Park Authority (2008)

Objective	Indicators	Available Information	Targets	Trends	Problems / Constraints	Source of Information
	G. Number of people employed in the hotels and restaurants sector	608 people in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	Maintain/increase employment in tourist industry	10% of working people in study area compared with 10.4% in Scarborough Borough and 5% in Yorkshire and The Humber.	Many factors affecting tourism in the area.	Information from the Office of National Statistics 2001 census
3. Maintain vibrant local communities	H. Population of wards within the study area	13,168 people in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	Maintain population at a sustainable level.	Previous census data for the ward unknown	Population data only available every 10 years.	Information from the Office of National Statistics 2001 census
	I. % of people who believe they belong to their neighbourhood.	No information for the study area but Scarborough to establish as part of their National Performance Indicators.	Unknown	Unknown	None	National Performance Indicators Quarter 3 2008/09, Scarborough Borough Council.
	J. Number of people with good, fairly good and not good health in the study area	68.33% of people in good health, 22.57% in fairly good health, 9.42% not good health in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	Reduce the number of people not in good health.	Unknown	Population health data only available every 10 years.	Information from the Office of National Statistics 2001 census
4. Where practicable ensure the safety and security of people and property.	K. Number of households in wards within the study area	5,599 households within wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead.	Increase the dwelling as guided by RSS (Scarborough to increase dwellings by 560 a year)	Increasing number regionally although unknown how many new builds in the study area.	Unlikely to obtain planning permission for new properties within 100 m of the eroding cliff.	Information from the Office of National Statistics 2001 census
5. To maintain the transport network, encouraging the use of cycling, walking, minimising traffic and promoting access to the countryside.	L. Length of Public Rights of Way within the study area	Total length of PROW within the study area is 34 km.	To maintain and improve the total network of PROW	Unknown	Erosion is expected to sever several footpaths including the Cleveland Way.	Ordnance survey data 2006.
	M. Length of cycle way within the study area.	Total length of cycle way within the study area is 550 m. This is mostly to the north of Robin Hood's Bay.	To maintain and improve the network.	Proposed new cycle route will increase the designated cycle routes.	Erosion is expected to sever several cycle ways.	Information obtained from Sustrans 2009

Objective	Indicators	Available Information	Targets	Trends	Problems / Constraints	Source of Information
6. Maintain access to local facilities and services whilst minimising environmental impacts.	N. Number of indoor leisure visits/admissions	339,563 in Q3 of 08/09 in Scarborough Borough Council.	529,000 per quarter in Scarborough Borough Council	Unknown	Data are for entire Borough not just study area.	National Performance Indicators Quarter 3 2008/09, Scarborough Borough Council.
	O. Area of road within the wards in the study area.	Total area of highway in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead is 186.35 m <sup>2</sup> .	Maintain where practicable	Unknown	Areas of roads is not directly related to access	Information from the Office of National Statistics 2005 Enhanced Basemap
7. Ensure local needs are met locally.	P. Number of people working from home.	1,055 people mainly work from home in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	No targets set in national or local policy.	26.6% of employed people work from home compared to 17.3% in Scarborough Borough and 12% in Yorkshire and The Humber.	Many factors influencing people's ability to work from home.	Information from the Office of National Statistics 2001 census
	Q. Distance people travel to work.	1,226 travel less than 2 km; 689 between 2 km and 5 km; 387 between 5 km and 10 km; 248 between 10 km and 20 km; 202 between 20 km and 30 km and 206 over 30 km in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	No targets set in national or local policy.	Unknown locally although information suggests that people in the study area work closer to home than the regional average.	Not a direct indicator of local needs.	Information from the Office of National Statistics 2001 census
8. Creativity, innovation and the appropriate use of technology.	R. Use of technology and innovation to combat coastal erosion.	None	To increase the amount of innovation in dealing with coastal erosion.	Unknown	Difficult to objective to measure	No baseline information.
9. To promote good health through the provision of access to leisure facilities including access to the network of footpaths.	S. Number of open space, sport and recreational facilities.	SBC completed an audit of existing facilities in May 2006.	Increase	Unknown	Other factors may affect the provision of leisure facilities.	Scarborough Borough Council, data collected in May 2006
	T. Number of people with good, fairly good and not good health in the study area	68.33% of people in good health, 22.57% in fairly good health, 9.42% not good health in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	Reduce the number of people not in good health.	Unknown	Population health data only available every 10 years.	Information from the Office of National Statistics 2001 census

Objective	Indicators	Available Information	Targets	Trends	Problems / Constraints	Source of Information
	U. Length of Public Rights of Way within the study area	Total length of PROW within the study area is 34 km.	To maintain and improve the total network of PROW	Unknown	Erosion is expected to sever several footpaths including the Cleveland Way.	Ordnance survey data 2006.
10. Minimise negative impacts to human health (including pollution and stress) and safeguard positive impacts.	V. Number of people with good, fairly good and not good health in the study area	68.33% of people in good health, 22.57% in fairly good health, 9.42% not good health in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	Reduce the number of people not in good health.	Unknown	Population health data only available every 10 years.	Information from the Office of National Statistics 2001 census
	W. Number of people with a limiting, long term illness	19.10% of people have a limiting long term illness in wards of Streonshalh, Fylingdales, Scalby, Hackness & Stainton Dale and Lindhead	Reduce the number of people with long term illness	Lower than local or regional: 21.59% in Scarborough Borough Council & 19.48% in Yorkshire and The Humber	Data set is old and is only reviewed every 10 years.	Information from the Office of National Statistics 2001 census
11. To conserve and seek to enhance the terrestrial biological and geological environment, particularly designated sites and protected species.	X. Condition of 4 SSSIs including Hayburn Wyke, Robin Hood's Bay: Maw Wyke to Beast Cliff, Whitby – Saltwick and Iron Scar & Hundale Point to Scalby Ness.	Recent condition assessments have been completed for all SSSIs. All are 100% favourable except Robin Hood's Bay: Maw Wyke to Beast Cliff which is 98.75% favourable.	Maintain and enhance the condition of the SSSIs	No change since last condition assessment.	The area of unfavourable habitat is due to the construction of a sea defence and will be difficult to restore to favourable condition.	Natural England condition assessment, June 2009.
	Y. Maintain the vegetation mosaic of the Maritime Cliff and Slope at Robin Hood's Bay – Maw Wyke to Beast Cliff SAC (baseline data from Natural England)	Condition assessment completed by Natural England in 2009. Covers 83 hectares	Maintain existing features and areas	Unknown	Some habitats are heavily interlinked and difficult to determine extent. Coastal erosion has risk of impacting habitat.	Conservation objective and definitions of favourable conditions for designated features of interest, Natural England, March 2009 (Appendix C)
	Z. Maintain the Broadleaved, Mixed and Yew Woodland at Robin Hood's Bay – Maw Wyke to Beast Cliff SAC (baseline data from Natural England).	Condition assessment completed by Natural England in 2009. Covers 49 hectares	Maintain existing features and areas	Unknown	Some habitats are heavily interlinked and difficult to determine extent. Coastal erosion has risk of impacting habitat.	Conservation objective and definitions of favourable conditions for designated features of interest, Natural England, March 2009 (Appendix C)

Objective	Indicators	Available Information	Targets	Trends	Problems / Constraints	Source of Information
12. To conserve and seek to enhance the coastal and marine biological and geological environment, particularly designated sites and protected species.	AA. Maintain the Littoral Rock Woodland at Robin Hood's Bay – Maw Wyke to Beast Cliff SAC (baseline data from Natural England).	Condition assessment completed by Natural England in 2009. Covers 233 hectares.	Maintain existing features and areas.	Unknown	Some habitats are heavily interlinked and difficult to determine extent. Coastal erosion has risk of impacting habitat.	Conservation objective and definitions of favourable conditions for designated features of interest, Natural England, March 2009 (Appendix C)
	BB. Maintain the Coastal Cliff and Foreshore, Inland Outcrops and Active Process Morphology at Robin Hood's Bay – Maw Wyke to Beast Cliff SAC (baseline data from Natural England).	Condition assessment completed by Natural England in 2009.	Maintain existing features and areas.	Unknown	Some habitats are heavily interlinked and difficult to determine extent. Coastal erosion has risk of impacting habitat.	Conservation objective and definitions of favourable conditions for designated features of interest, Natural England, March 2009 (Appendix C)
13. Maintain and safeguard opportunities for all to access and understand the ecological and geological environment.	CC. Visitor numbers to ecological and geological designated sites.	No information available	Sustainable increase the numbers of people who access suitable designated sites.	Unknown	Information not available	None presently available
14. Minimise pollution to levels which do not damage the biological or geological environment.	DD. Areas of identified contaminated land and potential sources of pollution.	Unknown	Reduce the potential for contaminated sites to pollute the natural environment.	Unknown	Data on contaminated land may not be complete.	None presently available
15. Minimise pollution to levels which do not damage soil.	EE. Areas of identified contaminated land and potential sources of pollution.	Unkonwn	Reduce the potential for contaminated sites to pollute the natural environment.	Unknown	Data on contaminated land may not be complete.	None presently available

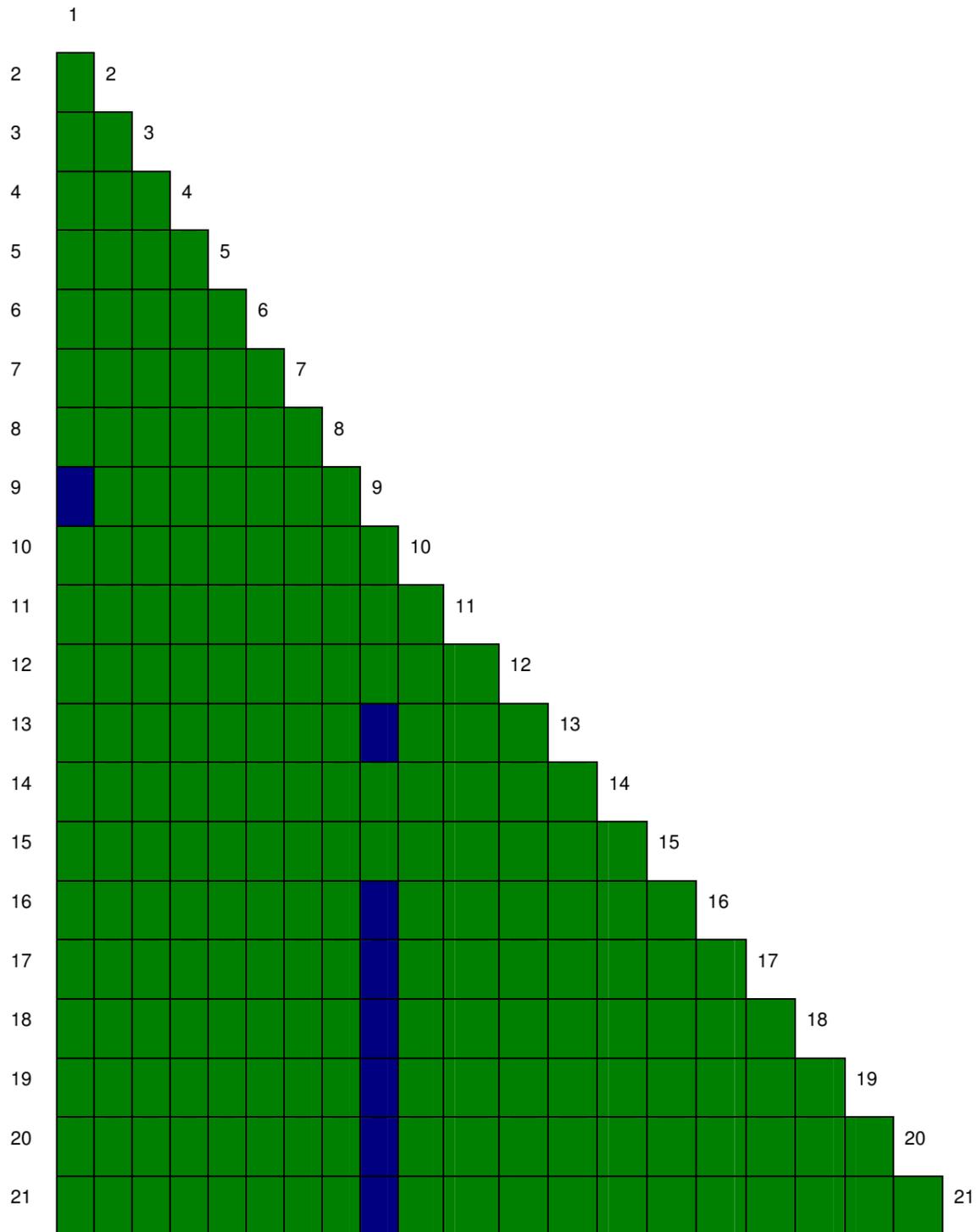
Objective	Indicators	Available Information	Targets	Trends	Problems / Constraints	Source of Information
16. Minimise pollution to levels which do not damage the water environment including surface water and ground water.	FF. Number of beaches with recognised awards.	RHB has Excellent Bathing Water Quality, Rural Beach Award and Quality Coast Aware: 'Away from it all'.	Maintain the current number or awards and increase where practicable.	Unknown	Many external factors in determining awards; could not be dependent on CSS.	Annual Monitoring Report 2008, Scarborough Borough Council (2008)
17. To ensure any potential works do not increase the risk of flooding.	GG. Number of planning permission granted contrary to the advice of the Environment Agency on either flood defence grounds or water quality.	None, although NYMNPA are waiting for information from the EA.	Decrease	Unknown	Baseline data may not be completely inside the study area as data from NYMNPA's entire area.	Annual Monitoring Report 2008, North York Moors National Park Authority (2008)
18. Manage natural resources in a way which sustain their environmental qualities as well as their productive (or economic) potential.	HH. Potting effort in RHB and Whitby.	2008: 3 boats, 5 men, 540 pots.	Maintain/Increase fishing activity in the area in a sustainable manner.	Reduction in boats and men, increase in number of pots.	Availability of fish stocks, potential introduction of no take zones.	Summary of Fishing Effort 2008, North Eastern Sea Fisheries Committee (2008)
	II. Number of farm diversification schemes approved.	8 approved in 07/08 by NYMNPA; 10 approved in 07/08 by SBC.	Maintain/increase agricultural productivity in the area in a sustainable manner.	Slight increase in the North York Moors from 6 in 06/07 to 8 in 07/08.	Baseline data may not be completely inside the study area as data from NYMNPA and SBC total area.	Annual Monitoring Report 2008, North York Moors National Park Authority (2008) & Annual Monitoring Report 2008, Scarborough Borough Council (2008).
19. To maintain and safeguard opportunities for all to access and understand local heritage	JJ. Numbers of monuments open to the public in the study area.	No information available on monuments open to the public.	Have more monuments open to the public and with public information facilities.	Unknown	Some of the monuments are very close to the edge of the cliff and will be eroded in the near future.	No baseline data
20. Where practicable preserve and enhance all aspects of the historic	KK. Number of SAMs within the study area.	7 scheduled monuments are located within the study area.	Preserve all SAMs.	Unknown	Several are very close to the existing cliff edge and are at threat.	Downloaded from English Heritage May 2009
	LL. Number of listed buildings within the study area	172 listed buildings within the study area.	Preserve all listed buildings where practical.	Unknown	Several are very close to the existing cliff edge and are at threat.	Downloaded from English Heritage May 2009

Objective	Indicators	Available Information	Targets	Trends	Problems / Constraints	Source of Information
environment.	MM. Number of monuments/buildings 'at risk' within the study area	One Scheduled Ancient Monument at risk in study area: the Brewhouse, Whitby Abbey	Reduce the number of monuments/buildings at risk.	Trend in NYMNPA is slight decrease from 224 in 06/07 to 222 in 07/08.	None	Heritage at Risk, Yorkshire and the Humber, English Heritage (2008)
21. Maintain and, where possible. Enhance the special landscape, local distinctiveness and settlement character.	NN. Number of conservation area appraisals carried out.	No appraisals currently been completed on Conservation Areas within the study area	Complete conservation area appraisals borough wide a year.	Increasing by two a year.	There are twenty five conservation areas within the study area.	Annual Monitoring Report 2008, North York Moors National Park Authority (2008) & Annual Monitoring Report 2008, Scarborough Borough Council (2008).
	OO. Number of applications refused due to adverse impact on trees, woodland, hedgerows and walls.	4 refusals in 07/08 (27% of applications assessed against policy).	No Target	Number increasing, 3 in 06/07, 4 in 07/08.	Baseline data may not be completely inside the study area as data from NYMNPA's entire area.	Annual Monitoring Report 2008, North York Moors National Park Authority (2008)

#### 5.4 Testing the Compatibility of the SEA Objectives

In order to ensure that the SEA objectives are mutually compatible, a compatibility assessment has been completed; the results are illustrated as a matrix in Figure 5.1.

Figure 5.1 - Compatibility matrix



	Compatible
	No Relationship
	Incompatible

Figure 5.1 indicates that almost all of the proposed objectives are mutually compatible and can be achieved together without causing any detrimental impacts to one another. There is one objective (number 9) which appears to have fewer links to the others. However this should not impact the suitability of this objective.

## 6 Next Steps

### 6.1 Introduction

The SEA objectives identified in this report will be used to determine the suitability of different options for management of the coast. The Coastal Strategy Study has four possible strategies that can be applied to each Management Area, these are set out in Table 6.1.

Table 6.1 - CSS Options

Option Types – general definitions	
Do Nothing	<p>Where a specific line need not be defended, so that the coastline can be allowed to evolve without human intervention. This option does allow some management (such as the realignment of footpaths) and monitoring.</p> <p>The Do Nothing, or no cost, option will be considered for all frontages in order to provide a baseline against which all alternative options can be compared.</p>
Active Intervention	<p>This option allows for the intervention to manage a length of coastline using engineering methods by either:</p> <ul style="list-style-type: none"> <li>• Maintaining the line of the existing defence (hard defences); or</li> <li>• sustaining the line of the existing defence (soft defences).</li> </ul>
Advance the Line	<p>This option allows the frontage to be managed and defended at a line forward (seawards) of the existing defence line.</p> <p>This option is very rarely used in coastal management as it is considered to be an unsustainable long term option.</p>
Managed Realignment	<p>Manage a line landward of the present line, to accommodate coastal flooding and erosion and in the longer term to promote a more stable coastal formation. Individual assets may be protected by holding the existing line on smaller scales than the above definitions.</p>

### 6.2 Questions for Consideration

This scoping report identifies all of the potential issues associated with the future management of MA24 and MA25. A range of environmental topics have been scoped out and scoped in depending on the baseline data which has been collected. This document has been circulated to a number of statutory and non-statutory consultees for consultation. Below is a list of questions which will enable reviewers

to identify if there are any areas of the report which are missing or and sections which could be added to make the assessment more robust.

1. Do you agree that Air can be scoped out of MA24 and MA25 for the assessment?
2. DO you agree that Climatic Factors can be scoped out of MA24 and MA25 for the assessment?
3. Do you agree that Water can be scoped out of MA24 for the assessment?
4. Do you consider the objectives and associated indicators relevant to the assessment of the CSS?
5. Are there objectives that could be added or deleted?
6. Are there other relevant published programmes or plans that should be considered?
7. Are there additional sources of relevant information that should be taken into account in the baseline review?

Answers to these questions will ensure that clear and formal responses are received from consultees and will help inform any additions or exclusions for the assessment and the Environmental Report. If you would like to comment, please send responses to these questions to Scarborough Borough Council within the five week statutory consultation period from publication of this report.

## 7 Figures

*Figure 7.1.1 – Ecology Overview*

*Figure 7.1.2 – Ecology Overview*

*Figure 7.1.3 – Ecology Overview*

*Figure 7.1.4 – Ecology Overview*

*Figure 7.1.5 – Ecology Overview*

*Figure 7.1.6 – Ecology Overview*

*Figure 7.1.7 – Ecology Overview*

*Figure 7.2.1 – Heritage Overview*

*Figure 7.2.2 - Heritage Overview*

*Figure 7.2.3 - Heritage Overview*

*Figure 7.2.4 - Heritage Overview*

*Figure 7.2.5 - Heritage Overview*

*Figure 7.2.6 - Heritage Overview*

*Figure 7.2.7 - Heritage Overview*

*Figure 7.3.1 – Land Use Overview*

*Figure 7.3.2 - Land Use Overview*

*Figure 7.3.3 - Land Use Overview*

*Figure 7.3.4 - Land Use Overview*

*Figure 7.3.5 - Land Use Overview*

*Figure 7.3.6 - Land Use Overview*

*Figure 7.3.7 - Land Use Overview*

*Figure 7.4.1 – Digital Terrain Model*

*Figure 7.4.2 - Digital Terrain Model*

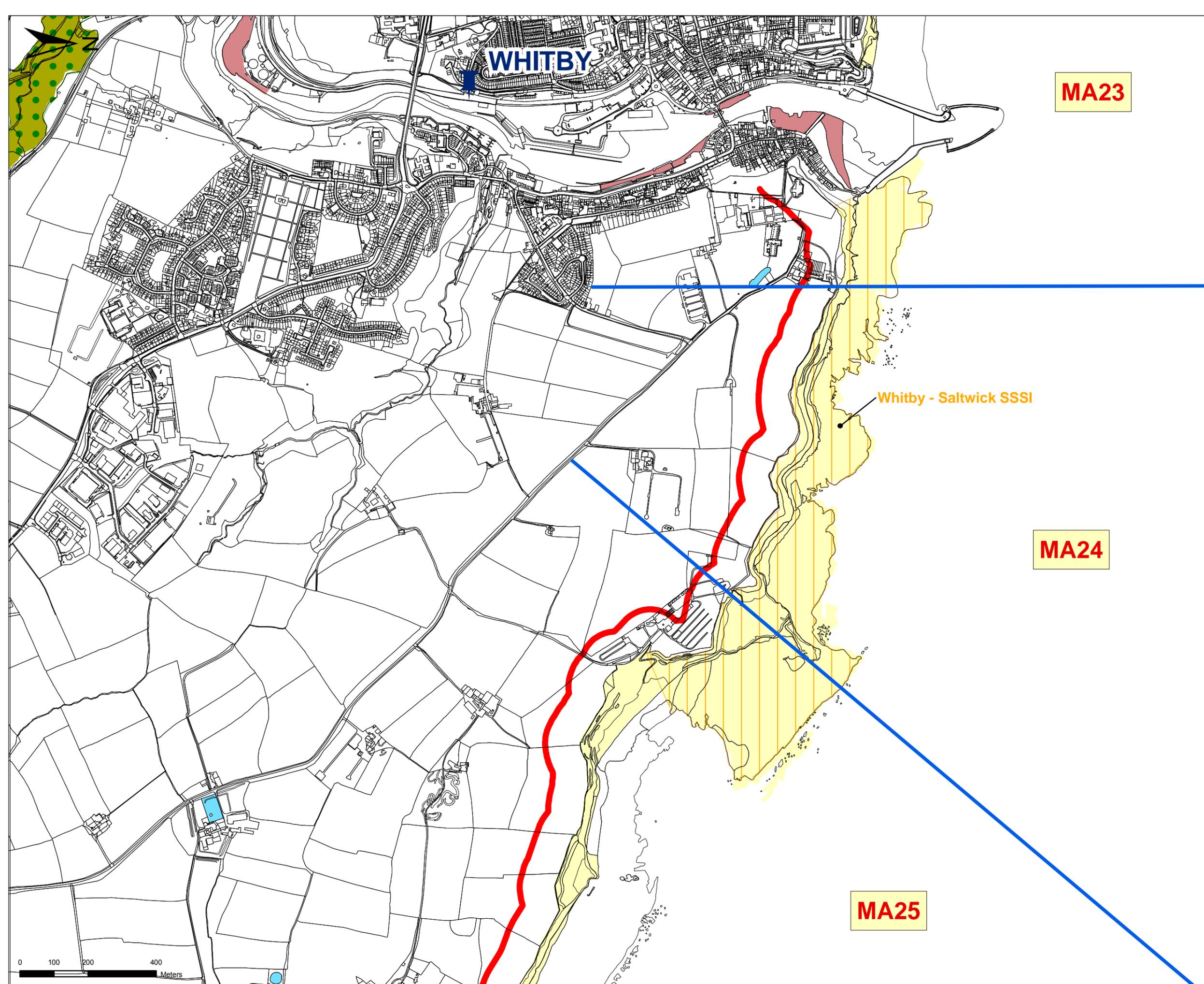
*Figure 7.4.3 - Digital Terrain Model*

*Figure 7.4.4 - Digital Terrain Model*

*Figure 7.4.5 - Digital Terrain Model*

*Figure 7.4.6 - Digital Terrain Model*

*Figure 7.4.7 - Digital Terrain Model*



**Legend**

-  Sites of Special Scientific Interest
-  Special Protection Areas
-  Special Areas of Conservation
-  Ancient Woodland Inventory
-  Ponds and Rivers
- Biodiversity Action Plan**
-  Blanket Bog
-  Lowland Mixed Deciduous Woodland
-  Maritime Cliff and Slope
-  Mudflats
-  Saline Lagoons
-  Undetermined Grassland
-  Upland Heathland
-  Upland Mixed Ashwoods
-  Wet Woodland
-  Major Towns
-  Coastal Study Area

**MA23**

**MA24**

**MA25**

Whitby - Saltwick SSSI



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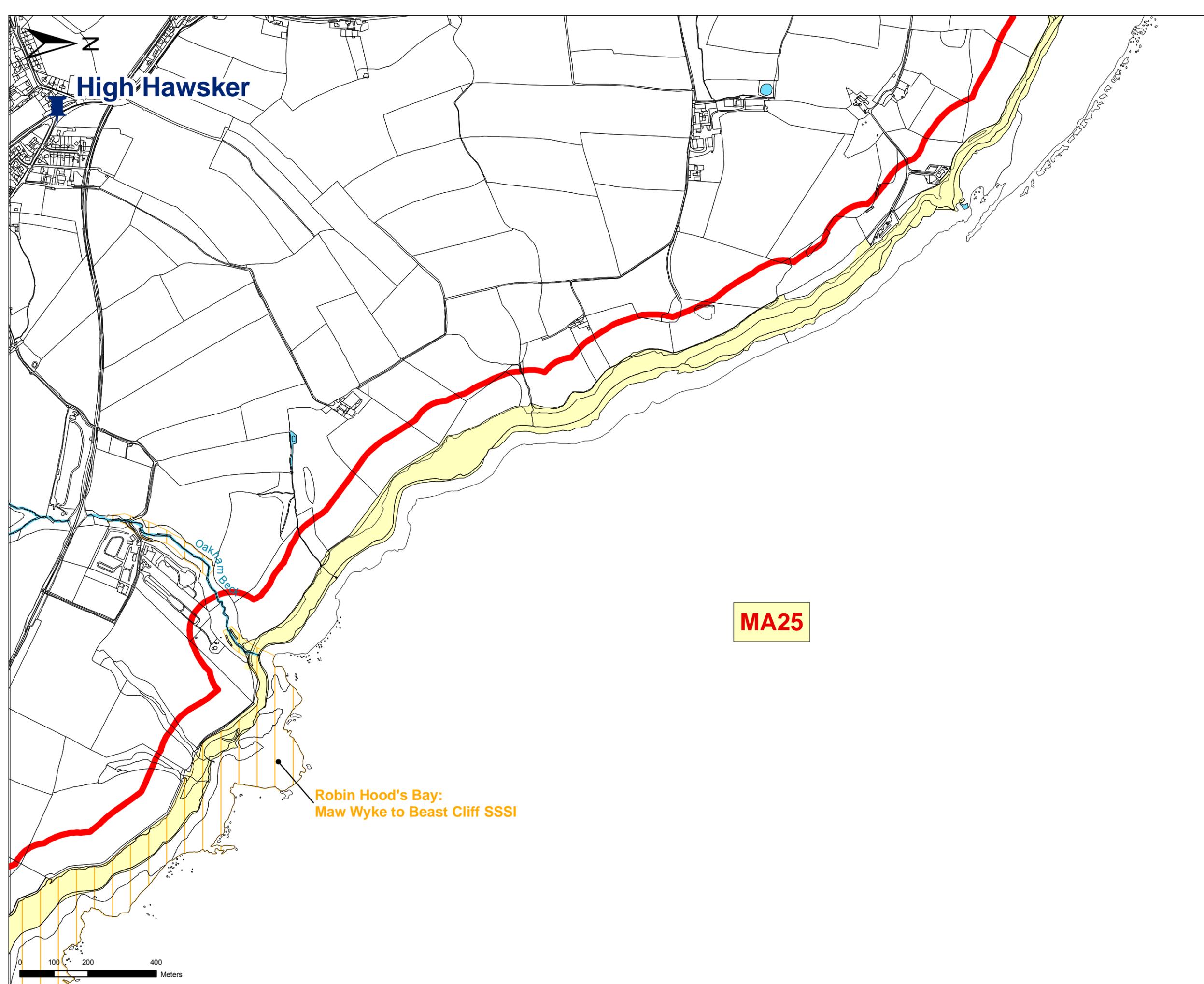
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**Project** Robin Hood's Bay Coastal Strategy Study

**Title** Robin Hood's Bay Ecology Overview

**Figure No.** **Figure: 7.1.1**



**Legend**

- Sites of Special Scientific Interest
- Special Protection Areas
- Special Areas of Conservation
- Ancient Woodland Inventory
- Ponds and Rivers
- Biodiversity Action Plan**
- Blanket Bog
- Lowland Mixed Deciduous Woodland
- Maritime Cliff and Slope
- Mudflats
- Saline Lagoons
- Undetermined Grassland
- Upland Heathland
- Upland Mixed Ashwoods
- Wet Woodland
- Major Towns
- Coastal Study Area



**MA25**

**Robin Hood's Bay:  
Maw Wyke to Beast Cliff SSSI**



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Title **Robin Hood's Bay Ecology Overview**

Figure No. **Figure: 7.1.2**



Fylingthorpe

Robin Hood's Bay

Angus Beck

Beast Cliff to Whitby  
(Robin Hood's Bay) SAC

Robin Hood's Bay:  
Maw Wyke to Beast Cliff SSSI

25.2

25.1

25.1

MA25

**Legend**

-  Sites of Special Scientific Interest
-  Special Protection Areas
-  Special Areas of Conservation
-  Ancient Woodland Inventory
-  Ponds and Rivers
- Biodiversity Action Plan**
-  Blanket Bog
-  Lowland Mixed Deciduous Woodland
-  Maritime Cliff and Slope
-  Mudflats
-  Saline Lagoons
-  Undetermined Grassland
-  Upland Heathland
-  Upland Mixed Ashwoods
-  Wet Woodland
-  Major Towns
-  Coastal Study Area



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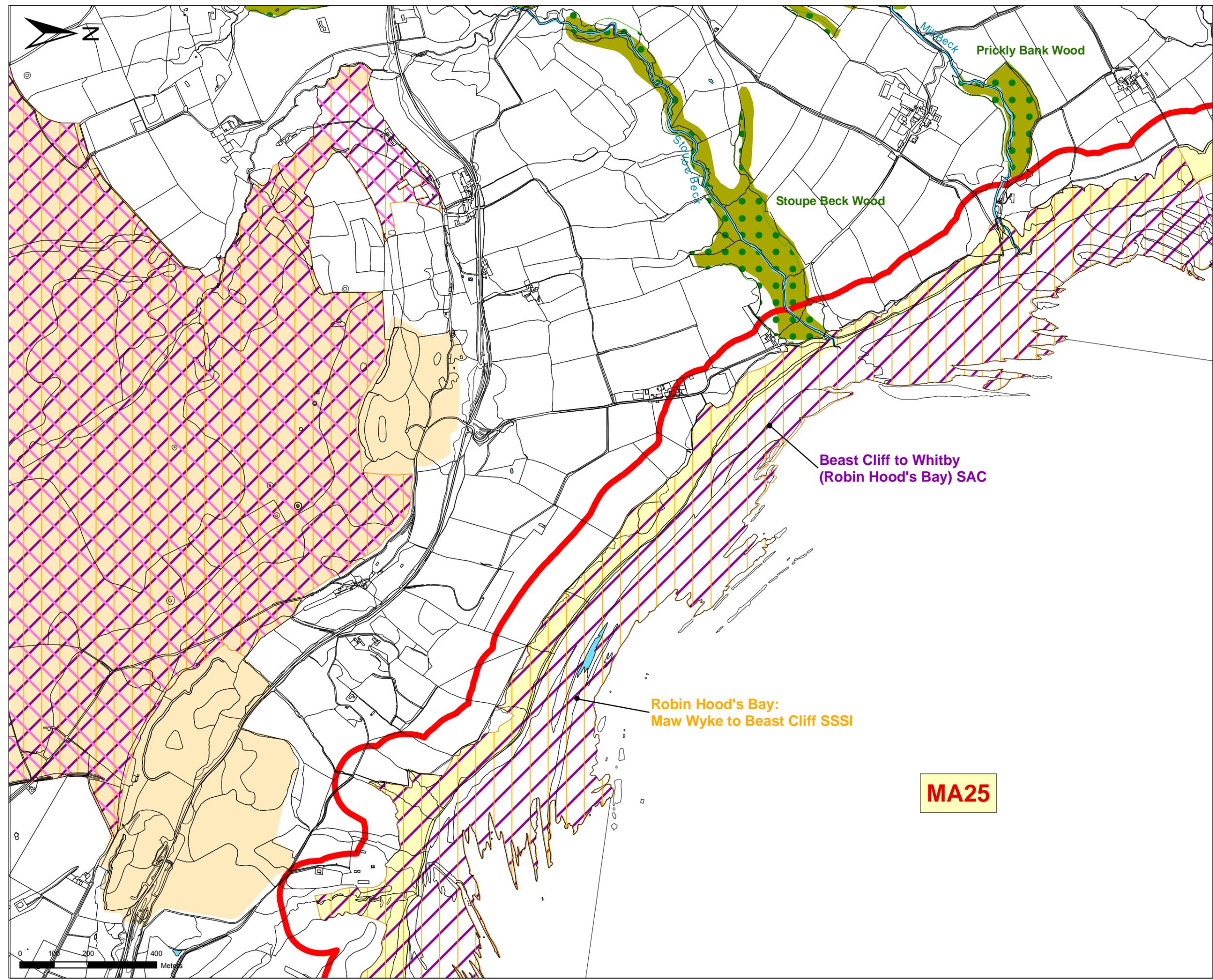


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Title **Robin Hood's Bay Ecology Overview**

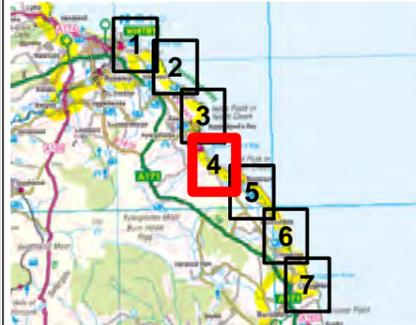
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0 100 200 400 Meters



### Legend

-  Sites of Special Scientific Interest
-  Special Protection Areas
-  Special Areas of Conservation
-  Ancient Woodland Inventory
-  Ponds and Rivers
- Biodiversity Action Plan**
-  Blanket Bog
-  Lowland Mixed Deciduous Woodland
-  Maritime Cliff and Slope
-  Mudflats
-  Saline Lagoons
-  Undetermined Grassland
-  Upland Heathland
-  Upland Mixed Ashwoods
-  Wet Woodland
-  Major Towns
-  Coastal Study Area



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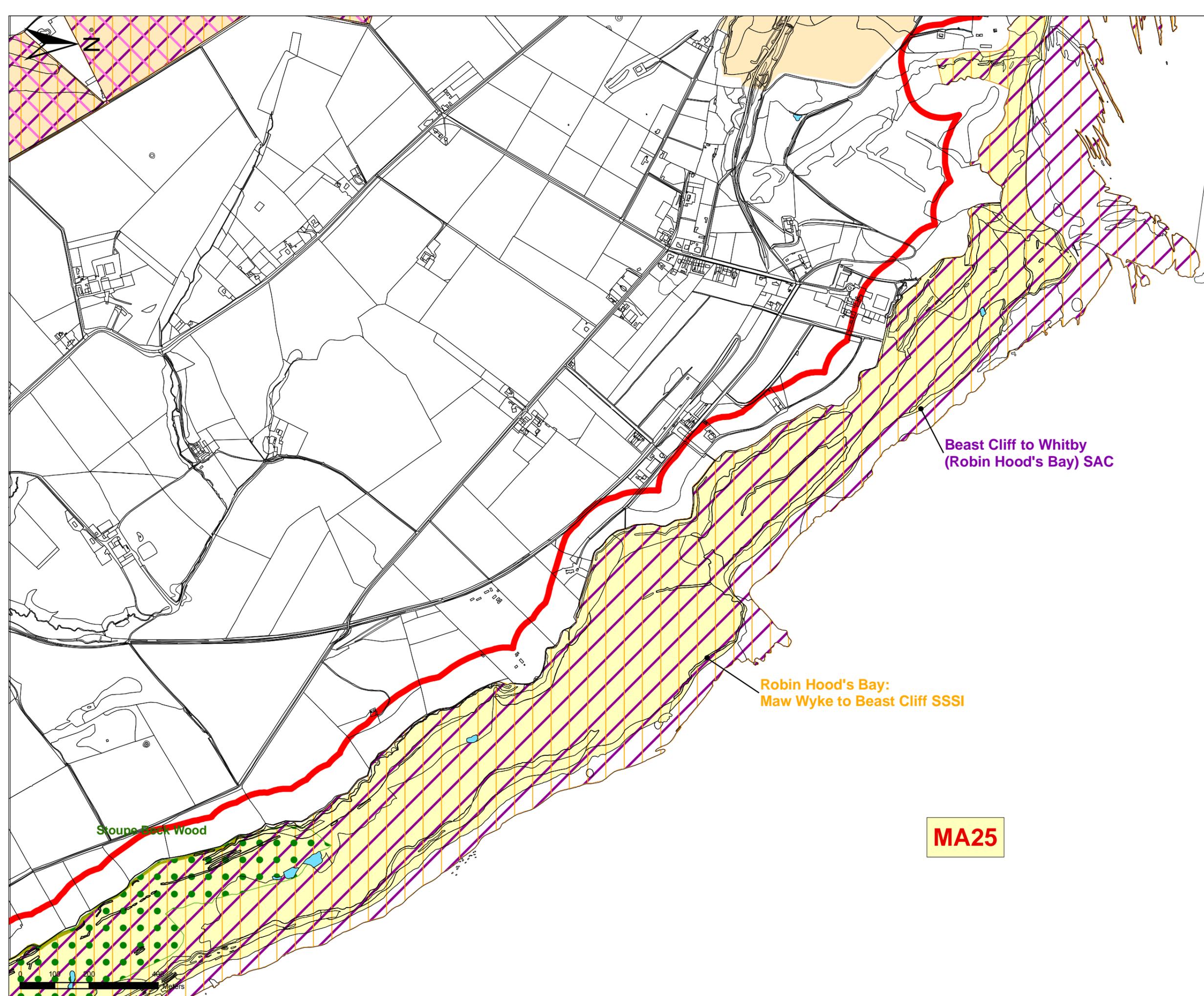


**Project** Robin Hood's Bay Coastal Strategy Study

**Title** Robin Hood's Bay Ecology Overview

**Figure No.** Figure: 7.1.4

**MA25**



**Legend**

- Sites of Special Scientific Interest
- Special Protection Areas
- Special Areas of Conservation
- Ancient Woodland Inventory
- Ponds and Rivers
- Biodiversity Action Plan**
- Blanket Bog
- Lowland Mixed Deciduous Woodland
- Maritime Cliff and Slope
- Mudflats
- Saline Lagoons
- Undetermined Grassland
- Upland Heathland
- Upland Mixed Ashwoods
- Wet Woodland
- Major Towns
- Coastal Study Area



Beast Cliff to Whitby  
(Robin Hood's Bay) SAC

Robin Hood's Bay:  
Maw Wyke to Beast Cliff SSSI

**MA25**

Stoupe Beck Wood

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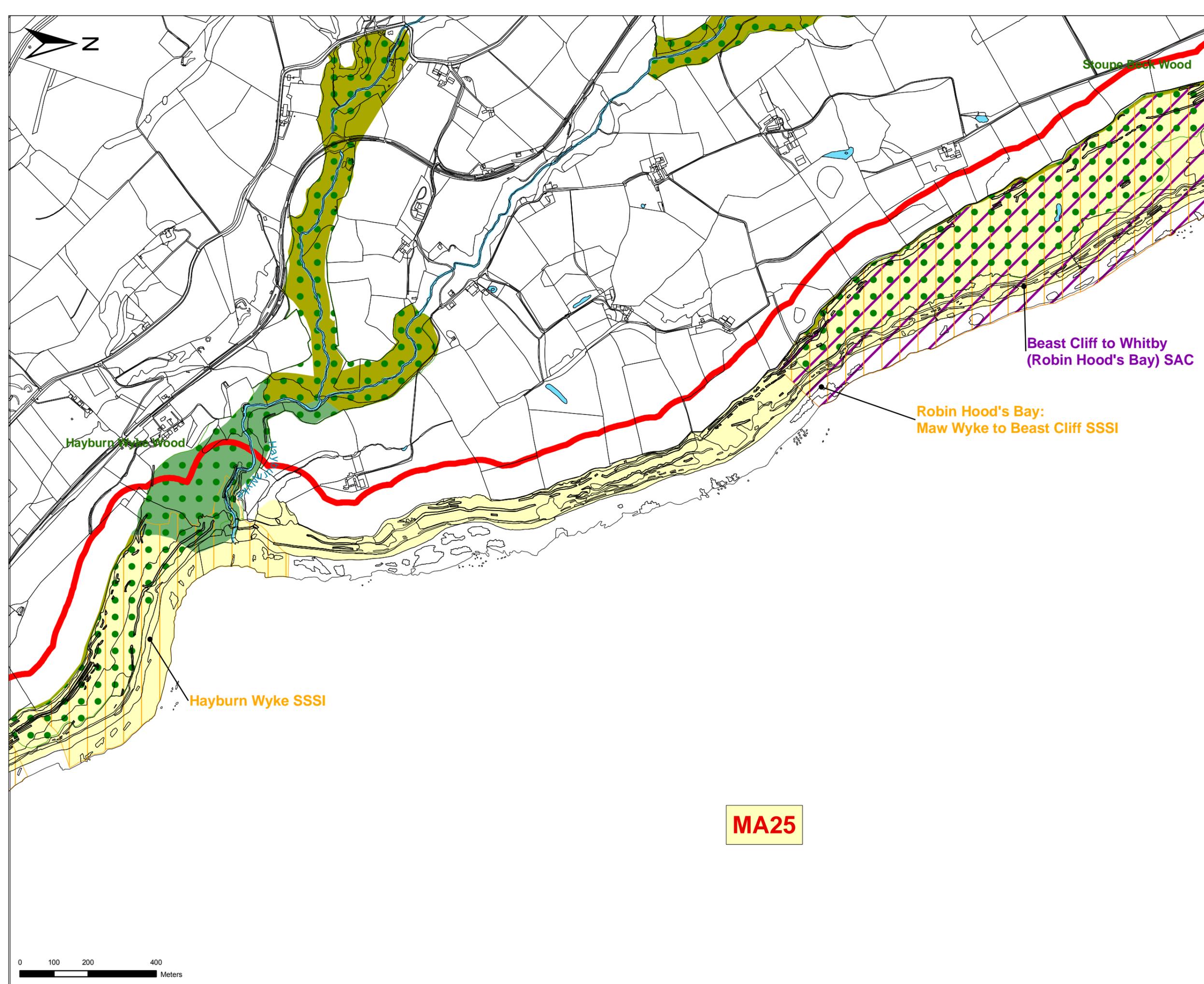


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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Ecology Overview**

Figure No. **Figure: 7.1.5**



- ### Legend
- Sites of Special Scientific Interest
  - Special Protection Areas
  - Special Areas of Conservation
  - Ancient Woodland Inventory
  - Ponds and Rivers
  - Biodiversity Action Plan**
  - Blanket Bog
  - Lowland Mixed Deciduous Woodland
  - Maritime Cliff and Slope
  - Mudflats
  - Saline Lagoons
  - Undetermined Grassland
  - Upland Heathland
  - Upland Mixed Ashwoods
  - Wet Woodland
  - Major Towns
  - Coastal Study Area

Beast Cliff to Whitby  
(Robin Hood's Bay) SAC

Robin Hood's Bay:  
Maw Wyke to Beast Cliff SSSI

Hayburn Wyke Wood

Hayburn Wyke SSSI



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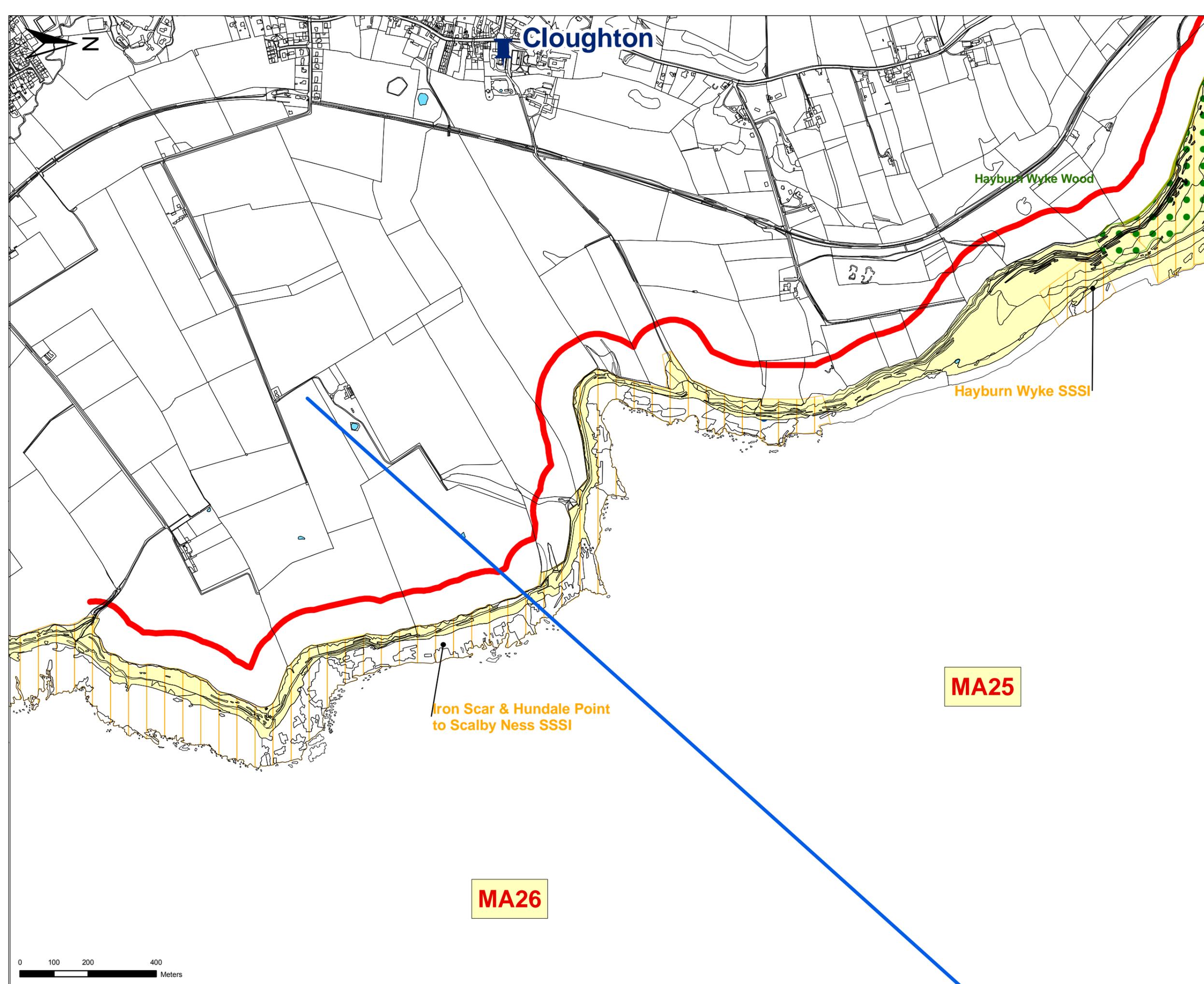
Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Ecology Overview**

Figure No. **Figure: 7.1.6**

**MA25**

0 100 200 400 Meters



**Legend**

-  Sites of Special Scientific Interest
-  Special Protection Areas
-  Special Areas of Conservation
-  Ancient Woodland Inventory
-  Ponds and Rivers
- Biodiversity Action Plan**
-  Blanket Bog
-  Lowland Mixed Deciduous Woodland
-  Maritime Cliff and Slope
-  Mudflats
-  Saline Lagoons
-  Undetermined Grassland
-  Upland Heathland
-  Upland Mixed Ashwoods
-  Wet Woodland
-  Major Towns
-  Coastal Study Area



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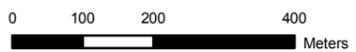


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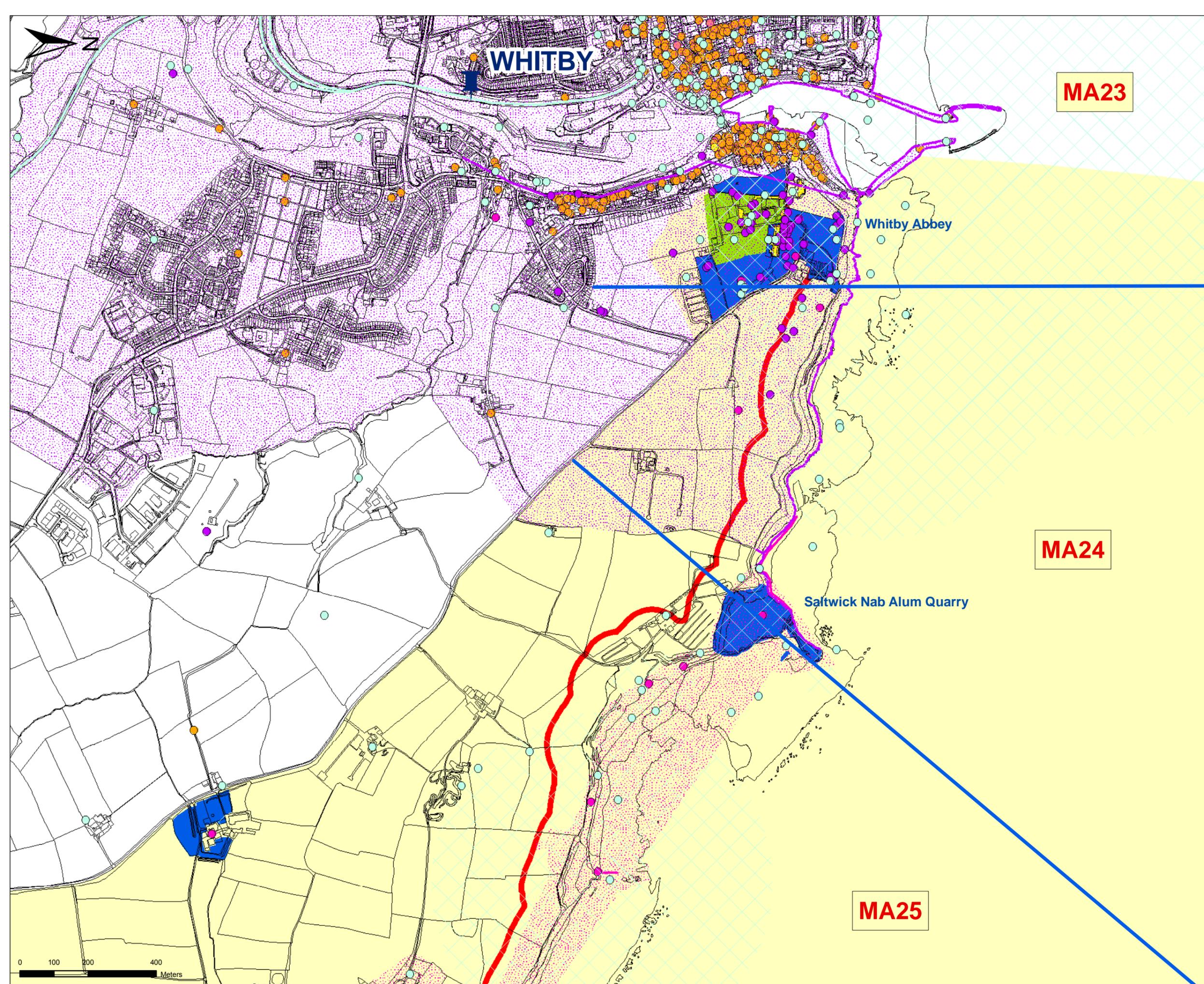
Title **Robin Hood's Bay Ecology Overview**

Figure No. **Figure: 7.1.7**



**MA25**

**MA26**



**Legend**

-  Major Towns
-  Coastal Study Area
-  Heritage Coast
- English Heritage**
-  Registered Park and Garden
-  Record of Scheduled Monument
- Listed Building
-  I
-  II
-  II\*
- North Yorkshire Moors National Park HER**
-  
- Rapid Coastal Zone Assessment**
-  
- North Yorkshire County Council HER**
-  

**MA23**

**MA24**

**MA25**

**WHITBY**

Whitby Abbey

Saltwick Nab Alum Quarry



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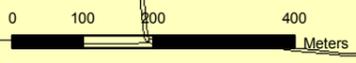
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**Project** Robin Hood's Bay Coastal Strategy Study

**Title** Robin Hood's Bay Heritage Overview

**Figure No.** **Figure: 7.2.1**





**Legend**

-  Major Towns
-  Coastal Study Area
-  Heritage Coast
- English Heritage**
-  Registered Park and Garden
-  Record of Scheduled Monument
- Listed Building
-  I
-  II
-  II\*
- North Yorkshire Moors National Park HER**
-  
- Rapid Coastal Zone Assessment**
-  
- North Yorkshire County Council HER**
-  



**MA25**

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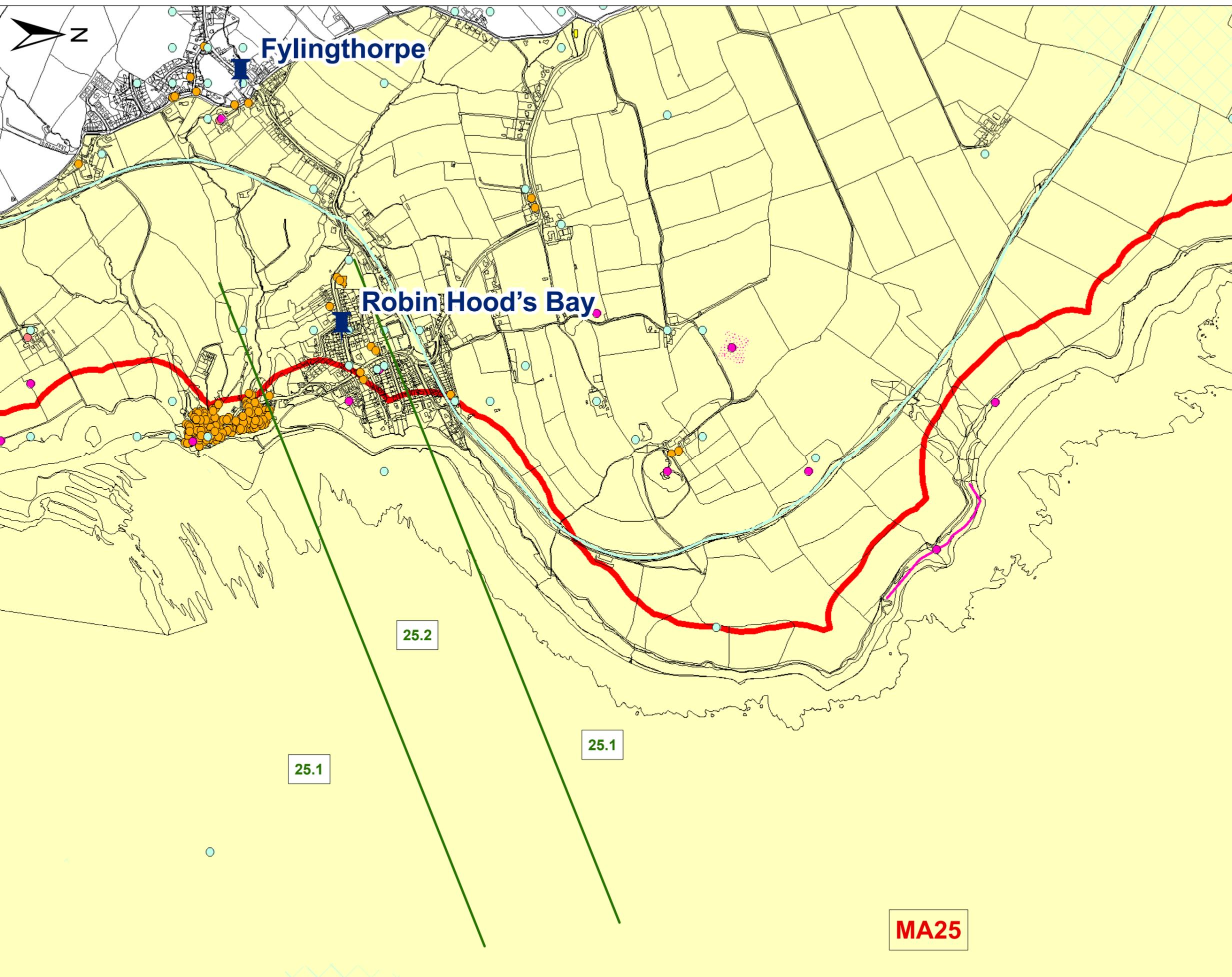
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**Project** Robin Hood's Bay Coastal Strategy Study

**Title** Robin Hood's Bay Heritage Overview

**Figure No.** **Figure: 7.2.2**



- ### Legend
- Major Towns
  - Coastal Study Area
  - Heritage Coast
  - English Heritage**
    - Registered Park and Garden
    - Record of Scheduled Monument
  - Listed Building
    - I
    - II
    - II\*
  - North Yorkshire Moors National Park HER**
    -
  - Rapid Coastal Zone Assessment**
    - 
    -
  - North Yorkshire County Council HER**
    -



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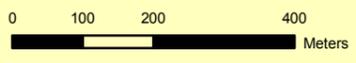
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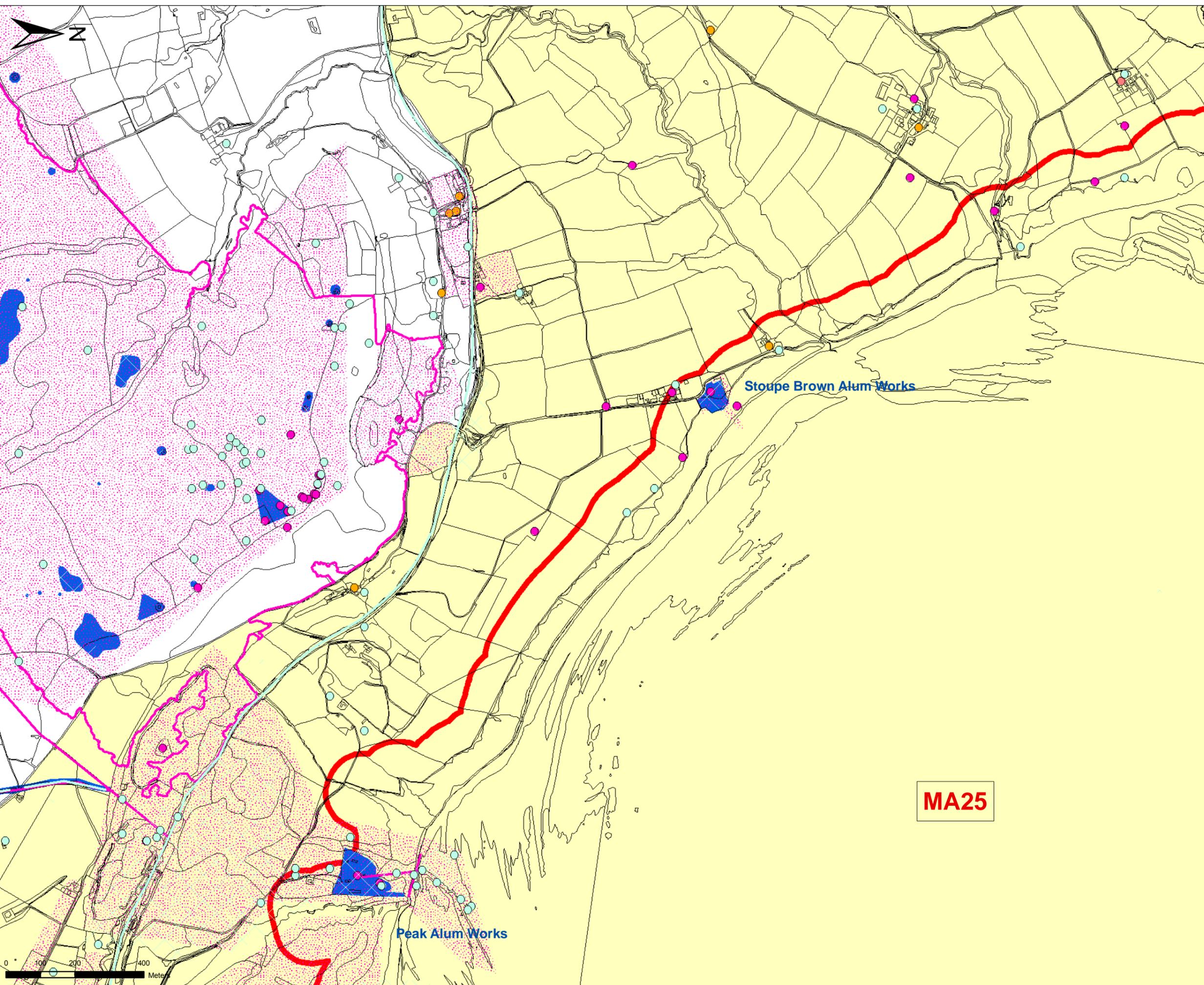
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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Heritage Overview**

Figure No. **Figure: 7.2.3**





**MA25**

**Legend**

- Major Towns
- Coastal Study Area
- Heritage Coast
- English Heritage**
- Registered Park and Garden
- Record of Scheduled Monument
- Listed Building
- I
- II
- II\*
- North Yorkshire Moors National Park HER**
- Rapid Coastal Zone Assessment
- North Yorkshire County Council HER



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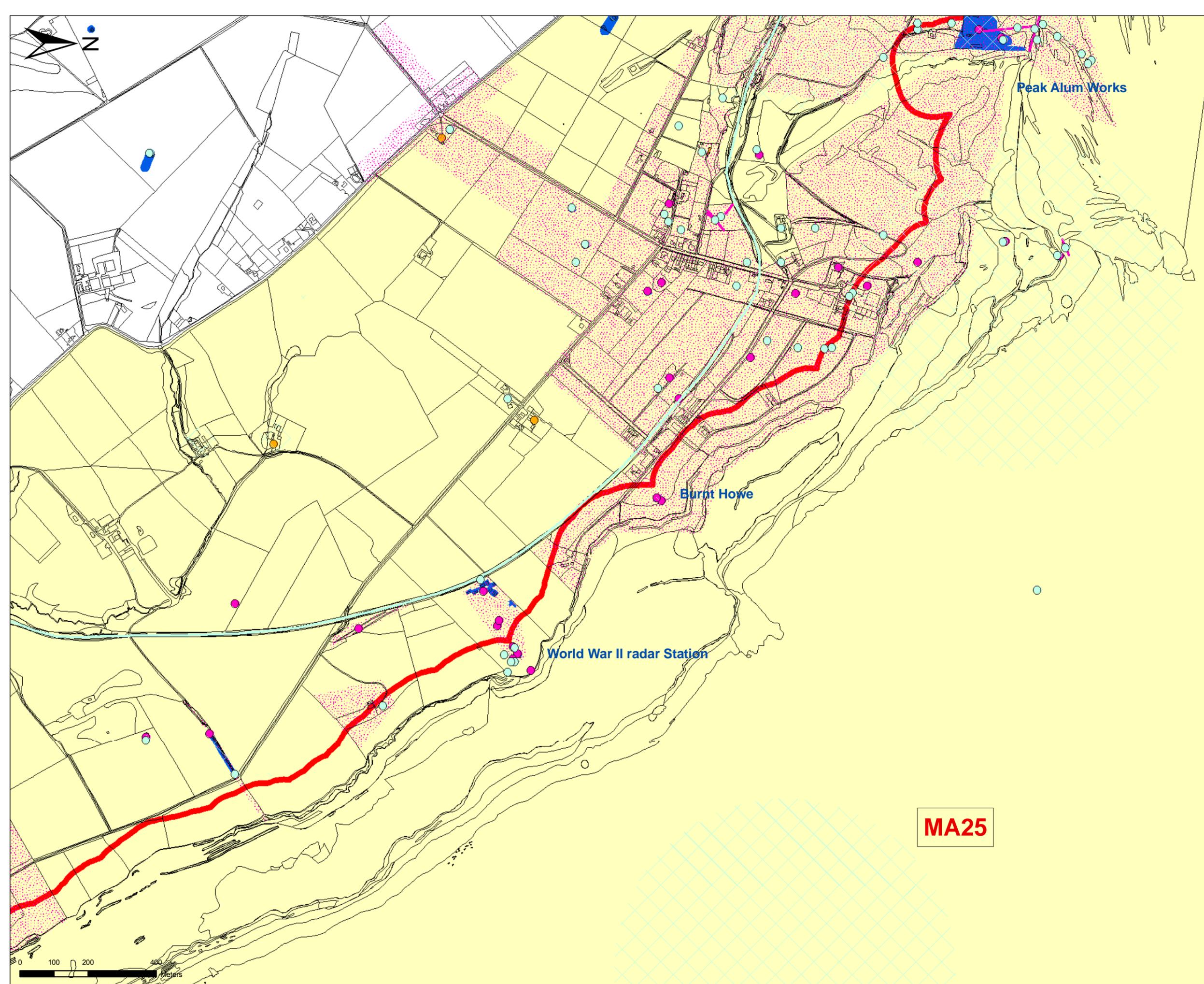


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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Heritage Overview**

Figure No. **Figure: 7.2.4**



### Legend

-  Major Towns
-  Coastal Study Area
-  Heritage Coast
- English Heritage**
-  Registered Park and Garden
-  Record of Scheduled Monument
- Listed Building
-  I
-  II
-  II\*
- North Yorkshire Moors National Park HER**
- 
- Rapid Coastal Zone Assessment**
- 
- North Yorkshire County Council HER**
- 



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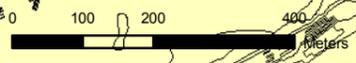
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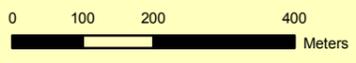
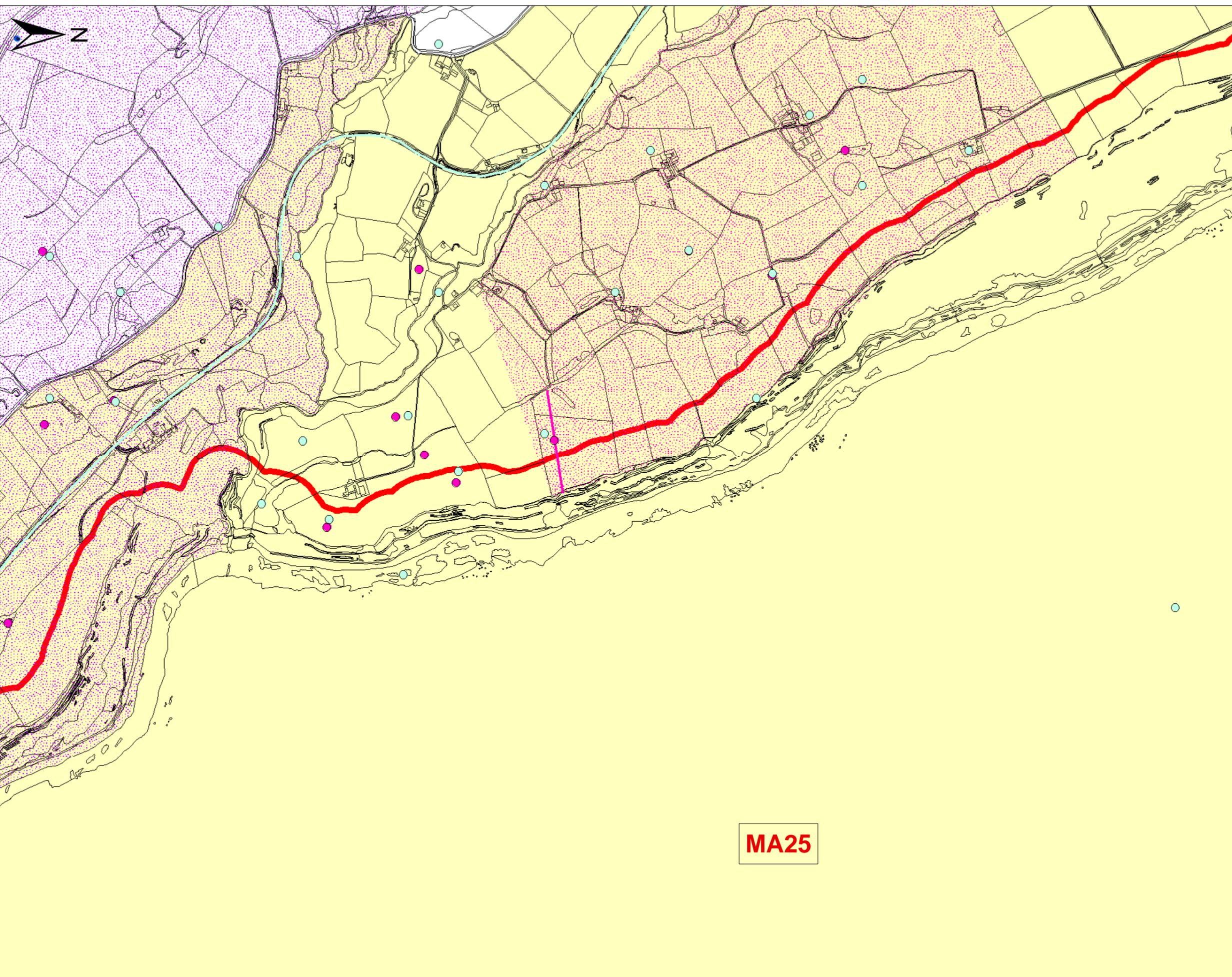
Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Heritage Overview**

Figure No. **Figure: 7.2.5**

**MA25**





**MA25**

- Legend**
- Major Towns
  - Coastal Study Area
  - Heritage Coast
  - English Heritage**
    - Registered Park and Garden
    - Record of Scheduled Monument
  - Listed Building
    - I
    - II
    - II\*
  - North Yorkshire Moors National Park HER**
    - Point
    - Line
    - Area
  - Rapid Coastal Zone Assessment**
    - Point
    - Line
    - Area
  - North Yorkshire County Council HER**
    - Point
    - Line
    - Area



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 Date of issue **30/06/2009** Drawn **SC**

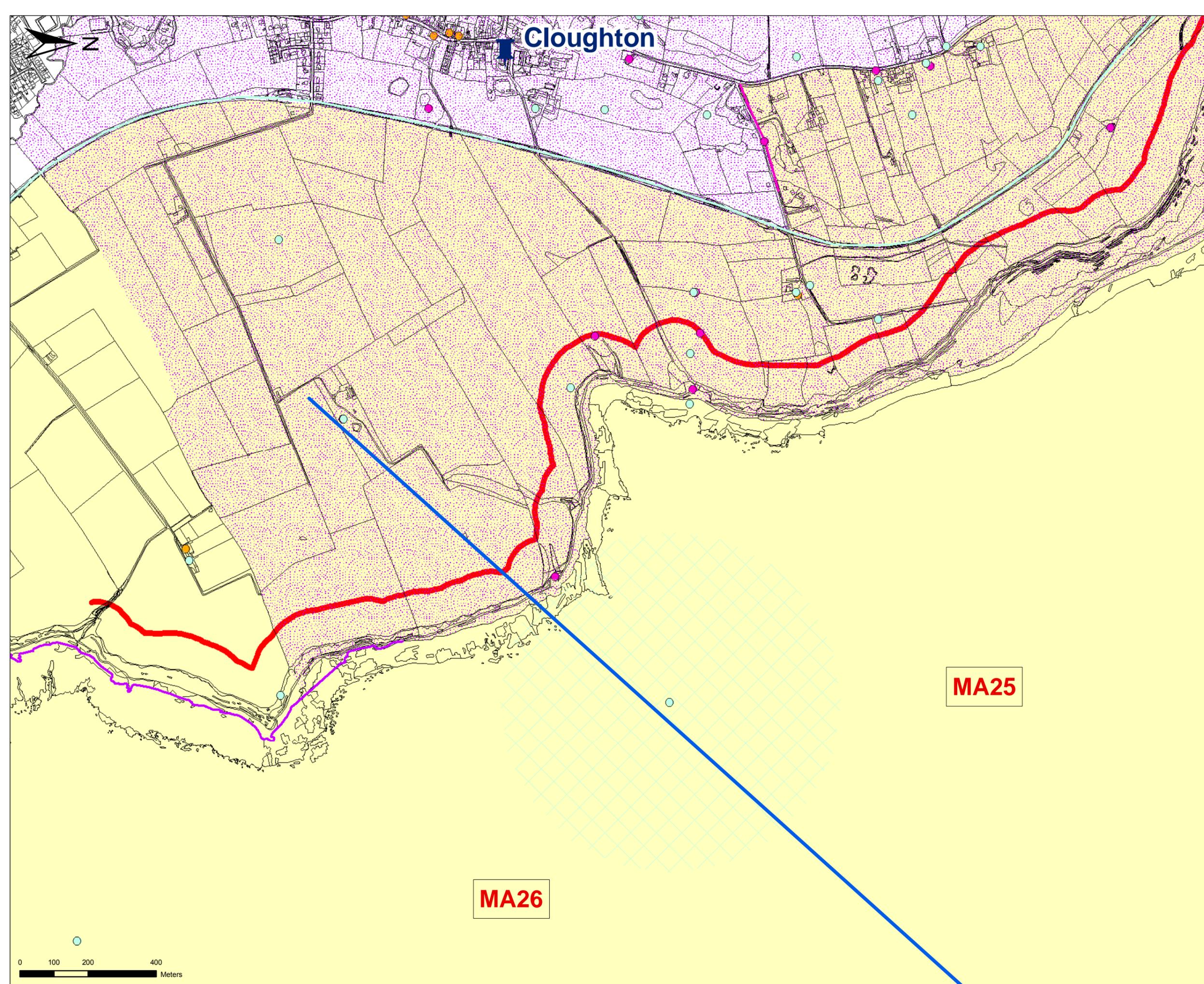
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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Heritage Overview**

Figure No. **Figure: 7.2.6**



**Legend**

- Major Towns
- Coastal Study Area
- Heritage Coast
- English Heritage**
- Registered Park and Garden
- Record of Scheduled Monument
- Listed Building
- I
- II
- II\*
- North Yorkshire Moors National Park HER**
- 
- Rapid Coastal Zone Assessment**
- 
- North Yorkshire County Council HER**
- 



**MA25**

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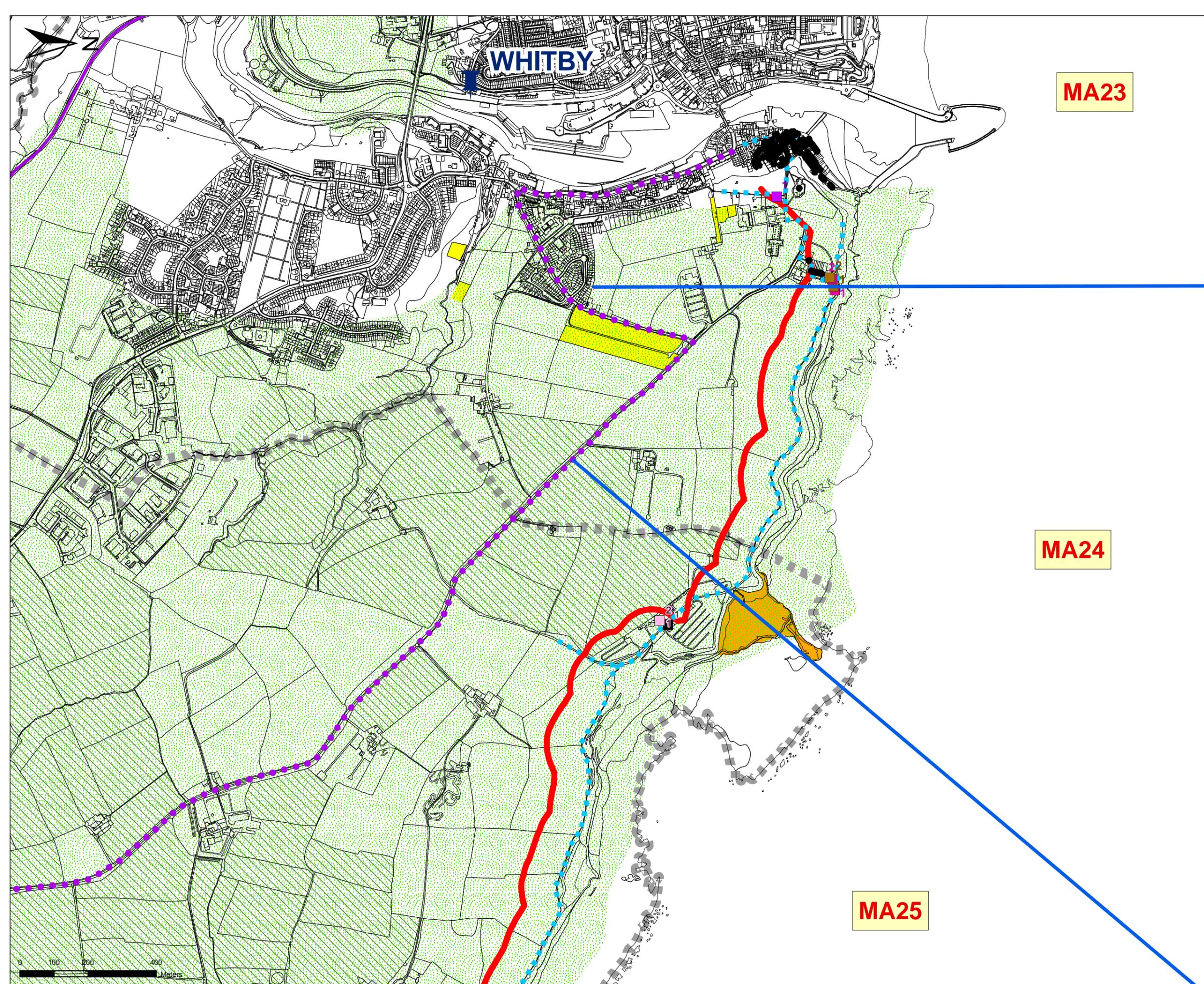


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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Heritage Overview**

Figure No. **Figure: 7.2.7**



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**MA23**

**MA24**

**MA25**

**Legend**

- Key Community Facilities (5)
- Tourism & Recreation (9)
- Utilities (7)
- Commercial (14)
- Fisheries (1)
- Public Assets (5)
- Industrial and Contaminated Land (2)
- Dwellings (527)
- Footpaths
- Cycleways**
- Existing
- Proposed
- Agricultural Land (GRADE 3)
- Allotments
- Environmental Stewardship
- National Trust Land
- National Park
- Major Towns
- Coastal Study Area



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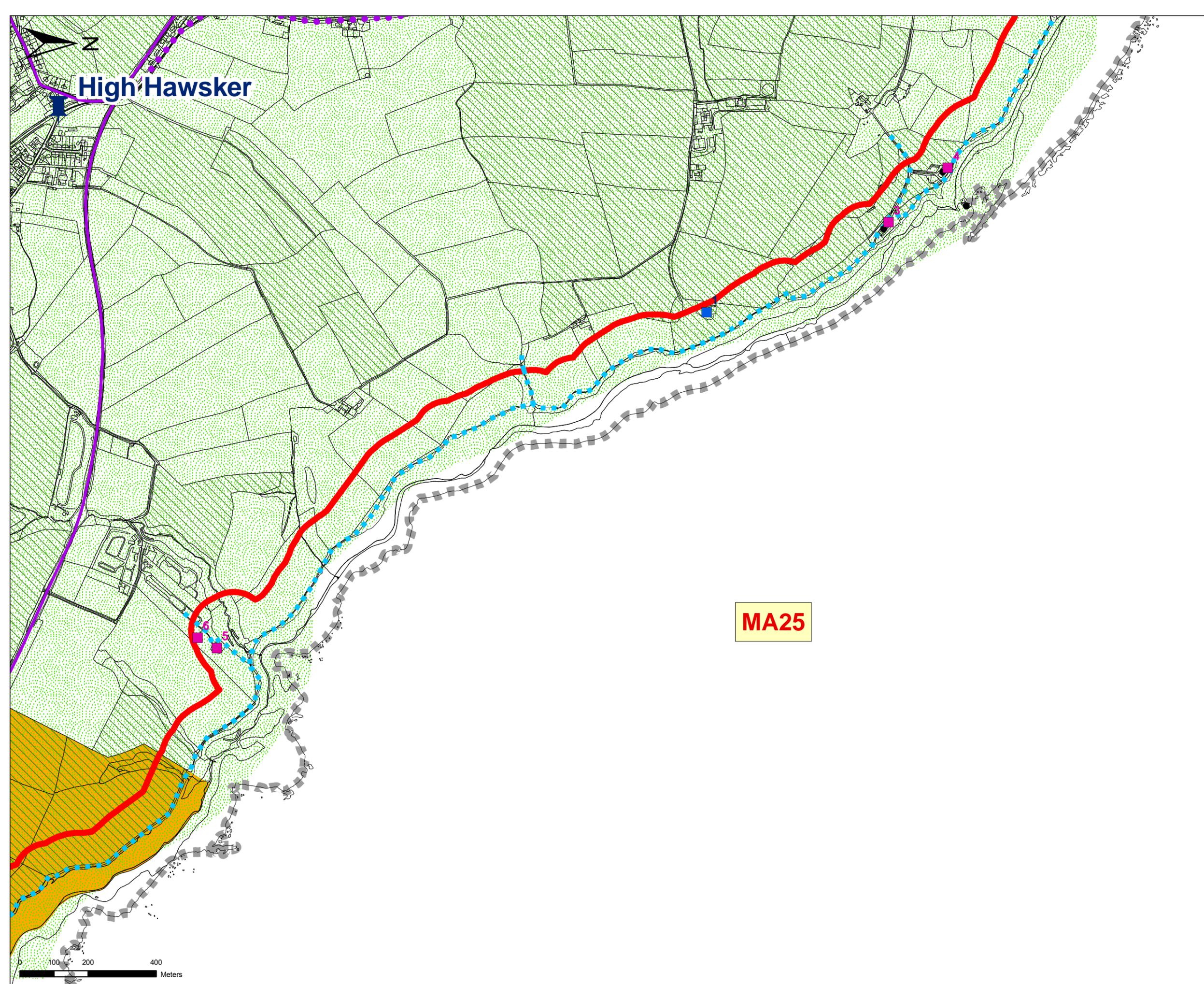
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**Project** Robin Hood's Bay Coastal Strategy Study

**Title** Robin Hood's Bay Land Use Overview

**Figure No.** Figure: 7.3.1



### Legend

- Key Community Facilities (5)
- Tourism & Recreation (9)
- Utilities (7)
- Commercial (14)
- Fisheries (1)
- Public Assets (5)
- Industrial and Contaminated Land (2)
- Dwellings (527)
- Footpaths
- Cycleways**
- Existing
- Proposed
- ▨ Agricultural Land (GRADE 3)
- Allotments
- ▨ Environmental Stewardship
- National Trust Land
- ▨ National Park
- Major Towns
- Coastal Study Area



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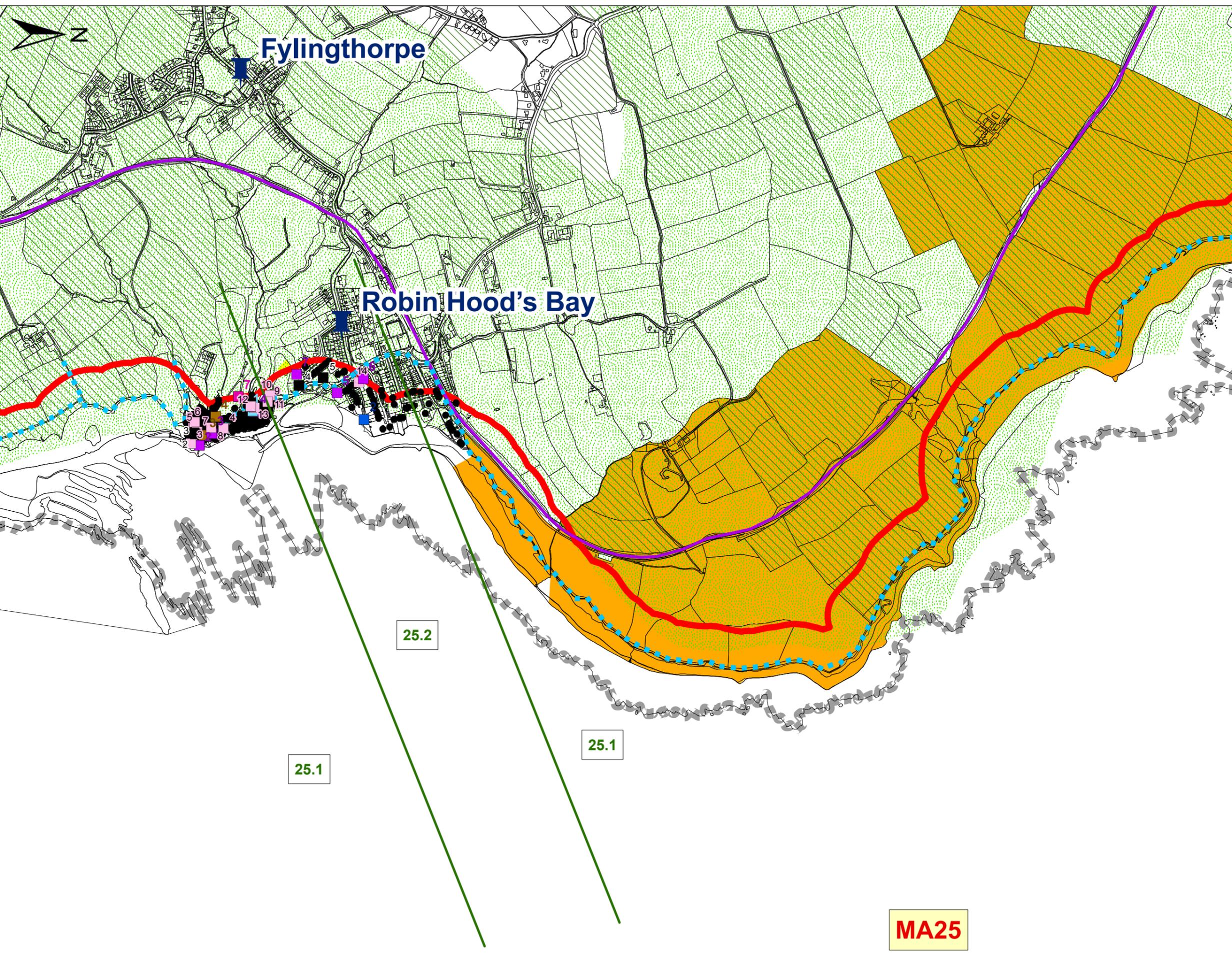


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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Land Use Overview**

Figure No. **Figure: 7.3.2**



**Legend**

- Key Community Facilities (5)
- Tourism & Recreation (9)
- Utilities (7)
- Commercial (14)
- Fisheries (1)
- Public Assets (5)
- Industrial and Contaminated Land (2)
- Dwellings (527)
- Footpaths
- Cycleways**
- Existing
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- Agricultural Land (GRADE 3)
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- Environmental Stewardship
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- Major Towns
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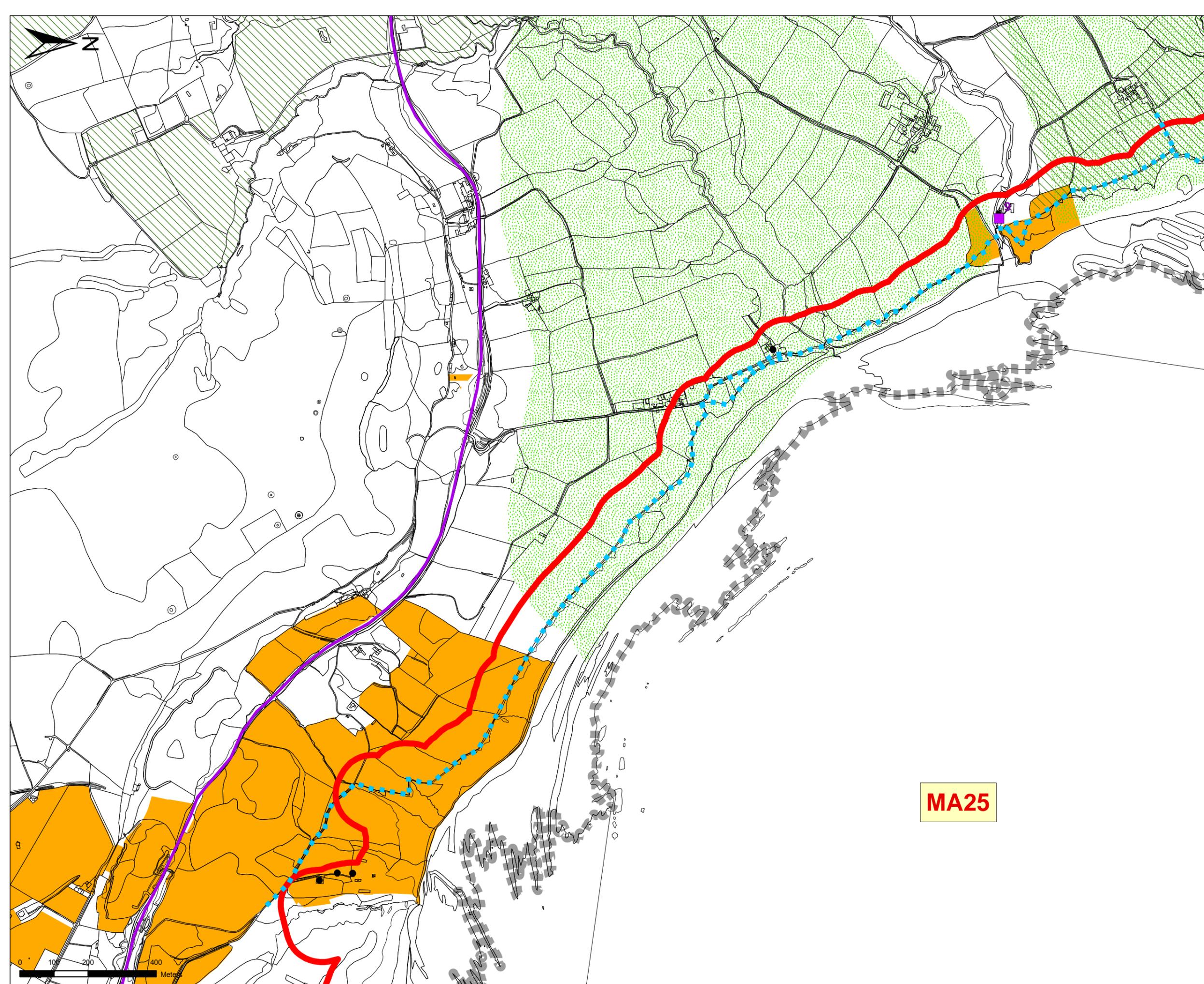
**Project** Robin Hood's Bay Coastal Strategy Study

**Title** Robin Hood's Bay Land Use Overview

**Figure No.** **Figure: 7.3.3**



**MA25**



### Legend

- Key Community Facilities (5)
- Tourism & Recreation (9)
- Utilities (7)
- Commercial (14)
- Fisheries (1)
- Public Assets (5)
- Industrial and Contaminated Land (2)
- Dwellings (527)
- Footpaths
- Cycleways**
- Existing
- Proposed
- Agricultural Land (GRADE 3)
- Allotments
- Environmental Stewardship
- National Trust Land
- National Park
- Major Towns
- Coastal Study Area



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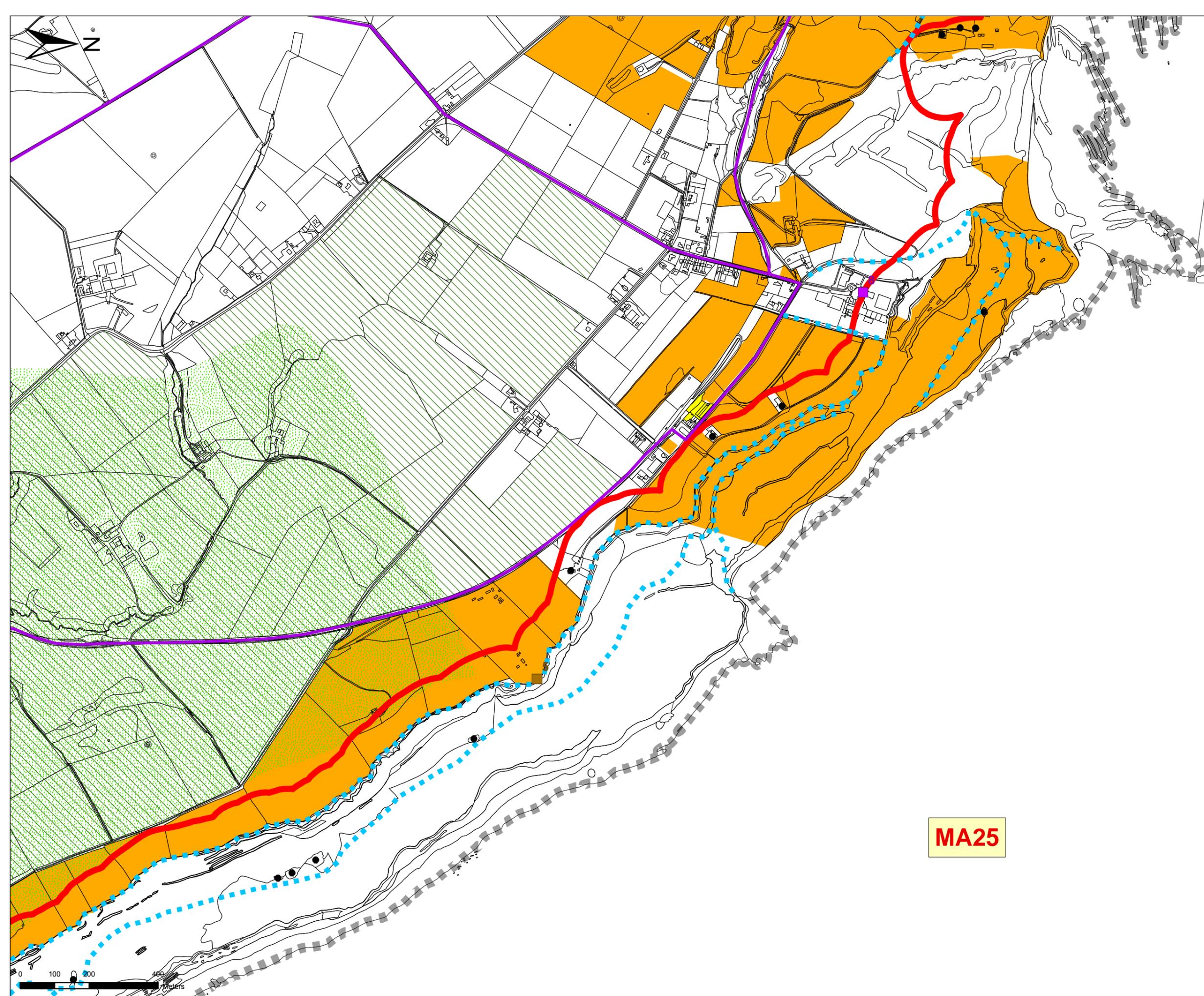
Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Land Use Overview**

Figure No. **Figure: 7.3.4**

**MA25**





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**Legend**

- Key Community Facilities (5)
- Tourism & Recreation (9)
- Utilities (7)
- Commercial (14)
- Fisheries (1)
- Public Assets (5)
- Industrial and Contaminated Land (2)
- Dwellings (527)
- ■ ■ Footpaths
- Cycleways**
- Existing
- ● ● Proposed
- Agricultural Land (GRADE 3)
- Allotments
- Environmental Stewardship
- National Trust Land
- National Park
- Major Towns
- Coastal Study Area



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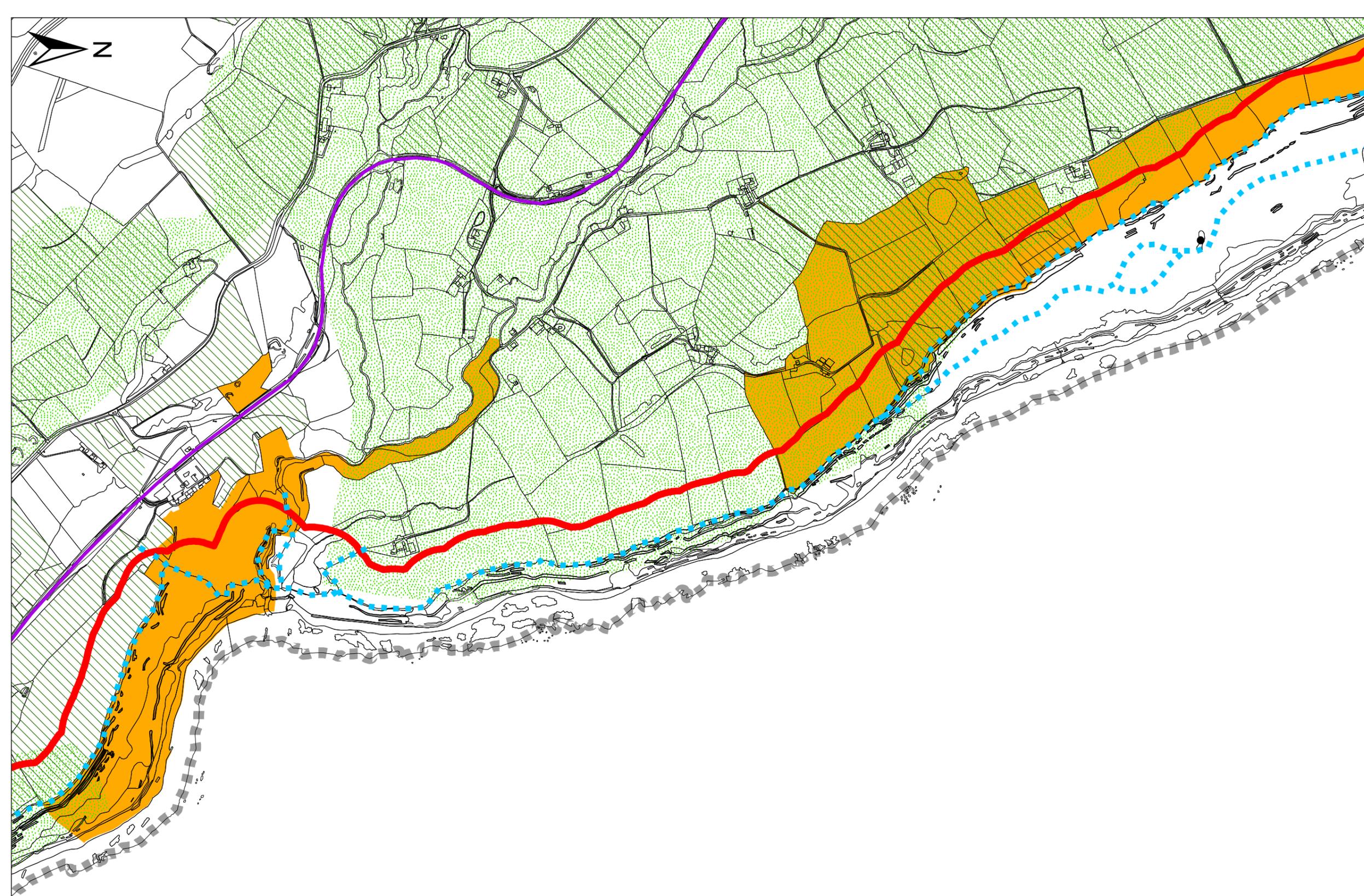


Client 

Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Land Use Overview**

Figure No. **Figure: 7.3.5**



### Legend

- Key Community Facilities (5)
- Tourism & Recreation (9)
- Utilities (7)
- Commercial (14)
- Fisheries (1)
- Public Assets (5)
- Industrial and Contaminated Land (2)
- Dwellings (527)
- Footpaths
- Cycleways**
- Existing
- Proposed
- Agricultural Land (GRADE 3)
- Allotments
- Environmental Stewardship
- National Trust Land
- National Park
- Major Towns
- Coastal Study Area



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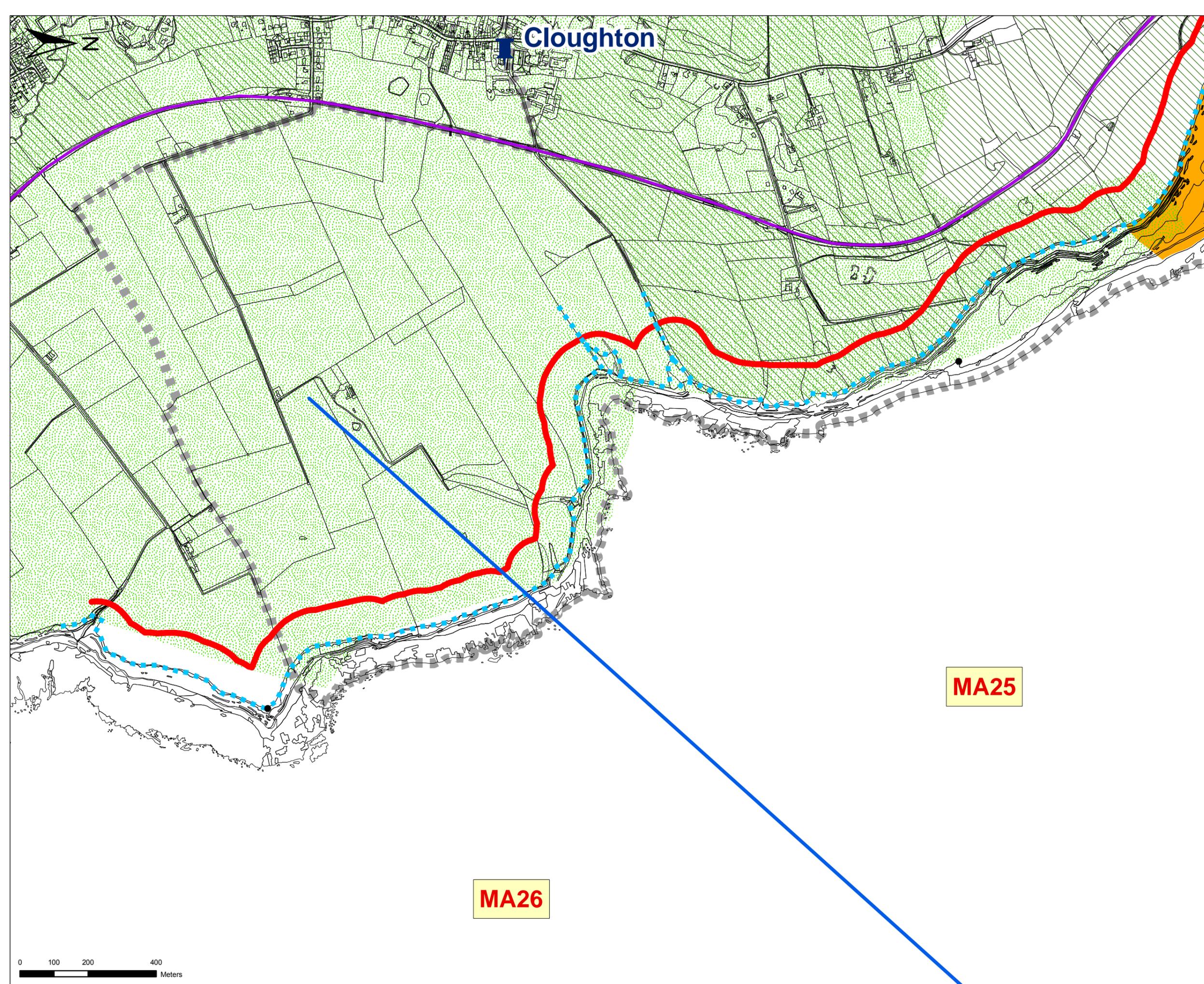
Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Land Use Overview**

Figure No. **Figure: 7.3.6**

**MA25**





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**Legend**

- Key Community Facilities (5)
- Tourism & Recreation (9)
- Utilities (7)
- Commercial (14)
- Fisheries (1)
- Public Assets (5)
- Industrial and Contaminated Land (2)
- Dwellings (527)
- ■ Footpaths
- Cycleways**
- Existing
- ● Proposed
- Agricultural Land (GRADE 3)
- Allotments
- Environmental Stewardship
- National Trust Land
- National Park
- Major Towns
- Coastal Study Area



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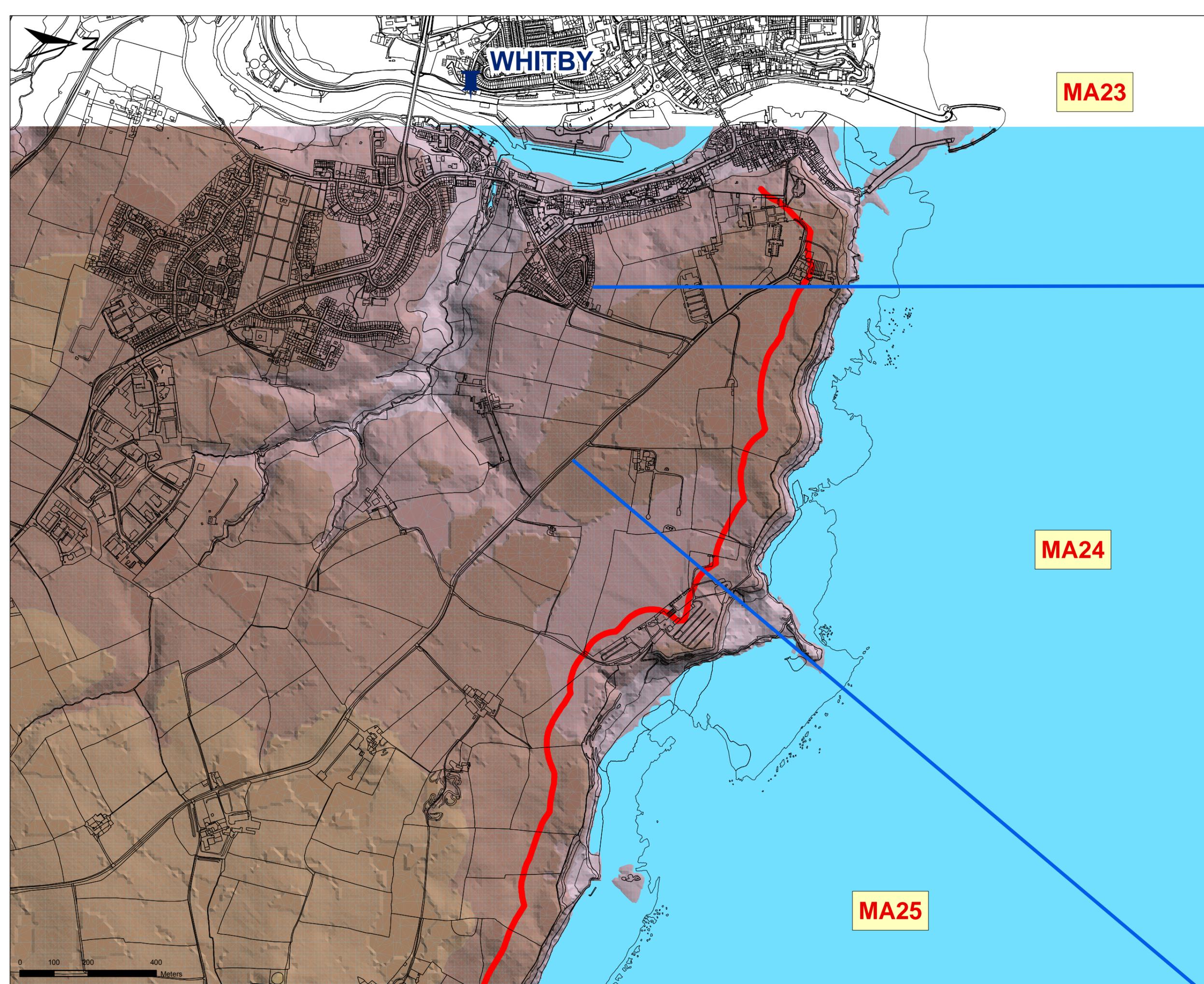


**Project** Robin Hood's Bay Coastal Strategy Study

**Title** Robin Hood's Bay Land Use Overview

**Figure No.** **Figure: 7.3.7**





### Legend

Major Towns

Coastal Study Area

### Digital Terrain Model

Elevation (m)

	250 - 275		100 - 125
	225 - 250		75 - 100
	200 - 225		50 - 75
	175 - 200		25 - 50
	150 - 175		0 - 25
	125 - 150		Sea



Scale at A3 **1:10000**

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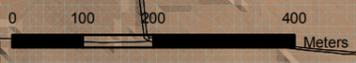


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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Digital Terrain Model**

Figure No. **Figure: 7.4.1**





**High Hawsker**

**MA25**

**Legend**

Major Towns

Coastal Study Area

**Digital Terrain Model**

Elevation (m)

	250 - 275		100 - 125
	225 - 250		75 - 100
	200 - 225		50 - 75
	175 - 200		25 - 50
	150 - 175		0 - 25
	125 - 150		Sea



Scale at A3 **1:10000**

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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Digital Terrain Model**

Figure No. **Figure: 7.4.2**





**Legend**

-  Major Towns
-  Coastal Study Area

**Digital Terrain Model**

Elevation (m)

	250 - 275		100 - 125
	225 - 250		75 - 100
	200 - 225		50 - 75
	175 - 200		25 - 50
	150 - 175		0 - 25
	125 - 150		Sea



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Project **Robin Hood's Bay Coastal Strategy Study**

Title **Robin Hood's Bay Digital Terrain Model**

Figure No. **Figure: 7.4.3**



**MA25**

## Appendix A – Baseline Population Statistics

All of the information in this Table was downloaded from the Office for National Statistics on 25/06/09 and is derived from the 2001 national census.

Census Topic	Type	Streonshalh	Fylingdales	Scalby, Hackness & Stainton Dale	Lindhead	TOTAL or AVERAGE
2001 Population: All people (Persons, Apr01)	Count	4,863	2,252	3,953	2,100	<b>13,168</b>
All Households (Households, Apr01)	Count	2,016	906	1,765	912	<b>5,599</b>
General Health: Good (Persons, Apr01)	%	68.91	65.81	68.73	69.86	<b>68.33</b>
General Health: Fairly good (Persons, Apr01)	%	21.67	23.09	23.50	22.00	<b>22.57</b>
General Health: Not good (Persons, Apr01)	%	9.42	11.10	7.77	8.14	<b>9.11</b>
People aged 16-74: Economically Active Unemployed (Persons, Apr01)	%	5.16	2.03	1.63	2.63	<b>2.86</b>

Census Topic	Type	Streonshalh	Fylingdales	Scalby, Hackness & Stainton Dale	Lindhead	TOTAL or AVERAGE
People with a limiting long-term illness (Persons, Apr01)	%	19.10	22.11	18.62	19.19	<b>19.76</b>
Economically active (Persons)	Count	2,211	1,007	1,721	953	<b>5,892</b>
Works mainly at or from home (Persons)	Count	257	296	336	166	<b>1,055</b>
Distance travelled to work: Less than 2 km (Persons)	Count	715	231	202	78	<b>1,226</b>
Distance travelled to work: 2 km to less than 5 km (Persons)	Count	204	212	188	85	<b>689</b>
Distance travelled to work: 5 km to less than 10 km (Persons)	Count	67	92	139	89	<b>387</b>
Distance travelled to work: 10 km to less than 20 km (Persons)	Count	90	58	80	20	<b>248</b>
Distance travelled to work: 20 km to less than 30 km (Persons)	Count	81	69	38	14	<b>202</b>

Census Topic	Type	Streonshalh	Fylingdales	Scalby, Hackness & Stainton Dale	Lindhead	TOTAL or AVERAGE
Distance travelled to work: 30 km and over (Persons)	Count	85	58	40	23	<b>206</b>
A. Agriculture, hunting and forestry (Persons)	Count	47	77	94	39	<b>257</b>
B. Fishing (Persons)	Count	31	8	0	0	<b>39</b>
C. Mining and quarrying (Persons)	Count	47	19	6	5	<b>77</b>
D. Manufacturing (Persons)	Count	261	88	191	121	<b>661</b>
E. Electricity, gas and water supply (Persons)	Count	14	5	13	0	<b>32</b>
F. Construction (Persons)	Count	191	80	66	55	<b>392</b>
G. Wholesale and retail trade, repairs (Persons)	Count	417	141	270	145	<b>973</b>
H. Hotels and restaurants (Persons)	Count	247	134	148	79	<b>608</b>

Census Topic	Type	Streonshalh	Fylingdales	Scalby, Hackness & Stainton Dale	Lindhead	TOTAL or AVERAGE
I. Transport, storage and communications (Persons)	Count	104	32	60	43	<b>239</b>
J. Financial intermediation (Persons)	Count	14	19	56	27	<b>116</b>
K. Real estate, renting and business activities (Persons)	Count	105	61	128	75	<b>369</b>
L. Public administration and defence, social security (Persons)	Count	72	35	121	51	<b>279</b>
M. Education (Persons)	Count	130	108	187	87	<b>512</b>
N. Health and social work (Persons)	Count	247	113	242	133	<b>735</b>
O. Other community, social and personal service activities (Persons)	Count	100	51	90	46	<b>287</b>
P. Private households with employed persons (Persons)	Count	0	0	3	0	<b>3</b>

Census Topic	Type	Streonshalh	Fylingdales	Scalby, Hackness & Stainton Dale	Lindhead	TOTAL or AVERAGE
Q. Extra-territorial organisations and bodies (Persons)	Count	0	3	0	3	6
Area of Road (Enhanced Basemap) (Areas, Jan05)	Square meters (m <sup>2</sup> ) (thousands)	186.35	469.96	1,027.28	278.63	<b>1,962.22</b>
Area of Greenspace; (Enhanced Basemap) (Areas, Jan05)	Square meters (m <sup>2</sup> ) (thousands)	2,526.46	64,972.45	98,445.82	18,006.77	<b>183,951.50</b>

## Appendix B – Address Layer Data Reference Key

Category Number	Type	Additional Information
<b>Key Community Facilities</b>		
1	HM COASTGUARD RESCUE	Lookout
2	HM COASTGUARD RESCUE	H M Coastguard building
3	HIGHER EDUCATION	Mens Institute
4	CHURCH	Church
5	HM COASTGUARD RESCUE	Lookout
<b>Tourism</b>		
1	YOUTH HOSTEL	Youth Hostels Association
2	HOTEL	Bay Hotel
3	HOTEL	Ye Dolphin Hotel
4	INN	Laurel Inn
5	HOTEL	Victoria Hotel
6	PUBLIC HOUSE	The Bay Tree
7	CARAVANNING	Caravan Park
8	GOLF	Raven Hall and Hotel Golf Course
9	YOUTH HOSTEL	Boggle Hole
<b>Utilities</b>		
1	TELECOMMUNICATIONS	Mast
2	TELECOMMUNICATIONS	Mast
3	TANK	Tank

Category Number	Type	Additional Information
4	TANK	Tank
5	WATER FILTRATION	Filter Beds
6	WATER FILTRATION	Filter Beds
7	ELECTRICITY SUB STATION	Electricity Sub Station
<b>Commercial</b>		
1	GENERAL COMMERCIAL	Norman Hurst Enterprises LTD
2	GENERAL COMMERCIAL	Whitby Holiday Park
3	GENERAL COMMERCIAL	The Old Coastguard Station
4	OFFICE	Bayfair Publications
5	GENERAL COMMERCIAL	Mariondale Fish & Chip Shop
6	OFFICE	Music in Miniature Exhibition
7	SHOPPING	Bulmer's Sweet Shop
8	GENERAL COMMERCIAL	Picnics
9	SHOPPING	Pages Books
10	GENERAL COMMERCIAL	Treasure Chest
11	GENERAL COMMERCIAL	Poppies (of Bloomswell)
12	SHOPPING	Sectets
13	SHOPPING	Muir Lea Stores
14	GENERAL COMMERCIAL	White Owl Holiday Apartments
<b>Fisheries</b>		
1	FISHERY	Bay Fisheries
<b>Public Assets</b>		

Category Number	Type	Additional Information
1	PUBLIC TELEPHONE	Public Telephone
2	PUBLIC CONVENIENCE	Public Convenience at Bulmer's Sweet Shop
3	PUBLIC TELEPHONE	Public Telephone 5 m from Bulmer's Sweet Shop
4	PUBLIC CONVENIENCE	Public Convenience 32 m from 12 Laburnum Avenue
5	PUBLIC CAR PARKING	Car Park 6 m from Marriott Station Road
<b>Industrial and Contaminated Land</b>		
1	MINERAL AND FUEL EXTRACTION	Pit (disused) 327 m from Widdyfield Farm
2	FACTORY	Paul R Howard Woodworking, The Old Rocket House

## Appendix C - Conservation Objectives and Definitions of Favourable Condition for Robin Hoods Bay – Maw Wyke to Beast Cliff SSSI and Beast Cliff to Whitby (Robin Hood's Bay) SAC

# Conservation objectives and definitions of favourable condition for designated features of interest



These Conservation Objectives relate to all designated features on the SSSI, whether designated as SSSI, SPA, SAC or Ramsar features.

Government and Maritime Team  
Genesis 1, University Road,  
Heslington,  
York, YO10 5ZQ  
01904 435500  
01904 435520  
Email address

Name of Site of Special Scientific Interest (SSSI)	
Robin Hood's Bay –Maw Wyke to Beast Cliff	
Names of designated international sites	
Special Area for Conservation (SAC)	Beast Cliff to Whitby (Robin Hood's Bay)
Special Protection Area (SPA)	NA
Ramsar	NA
Relationship between site designations	
Beast Cliff to Whitby (Robin Hood's Bay) SAC covers the southern end of the SSSI.	

Version control information	
Status of this Version (Draft, Consultation Draft, Final)	Consultation Draft 1
Prepared by	Joanna Redhead
Date of this version	16-03-09
Date of generic guidance on favourable condition used	CSM guidance for Littoral rock and inshore sublittoral rock habitats, version August 2004. CSM guidance for maritime cliff and slope habitats, version August 2004. Conservation objectives assembly spreadsheet, Version 5, 15 <sup>th</sup> Feb 2008. Geological guidance 2006.
Other notes/version history	Draft version 1, Robbie Fisher, 19 May 2006

Quality assurance information		
Checked by	Name	Date 16 <sup>th</sup> March 2009
	Emma Leighton Signature	

## **Conservation Objectives and definitions of Favourable Condition: notes for users**

### **Conservation Objectives**

SSSIs are notified because of specific biological or geological features. Conservation Objectives define the desired state for each site in terms of the features for which they have been designated. When these features are being managed in a way which maintains their nature conservation value, then they are said to be in 'favourable condition'. It is a Government target that 95% of the total area of SSSIs should be in favourable condition by 2010.

### **Definitions of Favourable Condition**

The Conservation Objectives are accompanied by one or more habitat extent and quality definitions for the special interest features at this site. These are subject to periodic reassessment and may be updated to reflect new information or knowledge; they will be used by Natural England and other relevant authorities to determine if a site is in favourable condition. The standards for favourable condition have been developed and are applied throughout the UK.

### **Use under the Habitats Regulations**

The Conservation Objectives and definitions of favourable condition for features on the SSSI may inform the scope and nature of any 'appropriate assessment' under the Habitats Regulations. An appropriate assessment will also require consideration of issues specific to the individual plan or project. The habitat quality definitions do not by themselves provide a comprehensive basis on which to assess plans and projects as required under Regulations 20-21, 24, 48-50 and 54 - 85. The scope and content of an appropriate assessment will depend upon the location, size and significance of the proposed project. Natural England will advise on a case by case basis.

Following an appropriate assessment, competent authorities are required to ascertain the effect on the integrity of the site. The integrity of the site is defined in paragraph 20 of ODPM Circular 06/2005 (DEFRA Circular 01/2005) as 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. The determination of favourable condition is separate from the judgement of effect upon integrity. For example, there may be a time-lag between a plan or project being initiated and a consequent adverse effect upon integrity becoming manifest in the condition assessment. In such cases, a plan or project may have an adverse effect upon integrity even though the site remains in favourable condition.

The formal Conservation Objectives for European Sites under the Habitats Regulations are in accordance with paragraph 17 of ODPM Circular 06/2005 (DEFRA Circular 01/2005), the reasons for which the European Site was classified or designated. The entry on the Register of European Sites gives the reasons for which a European Site was classified or designated.

### **Explanatory text for Tables 2 and 3**

Tables 2, 2a and 3 set out the measures of condition which we will use to provide evidence to support our assessment of whether features are in favourable condition. They are derived from a set of generic guidance on favourable condition prepared by Natural England specialists, and have been tailored by local staff to reflect the particular characteristics and site-specific circumstances of individual sites. Quality Assurance has ensured that such site-specific tailoring remains within a nationally consistent set of standards. The tables include an audit trail to provide a summary of the reasoning behind any site-specific targets etc. In some cases the requirements of features or designations may conflict; the detailed basis for any reconciliation of conflicts on this site may be recorded elsewhere.

## **Conservation Objectives**

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition (\*), with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar) as individually listed in Table 1.

### **Habitat Types represented (Biodiversity Action Plan categories)**

Maritime Cliff and Slope;  
Broadleaved mixed and yew woodland;  
Littoral Rock.

### **Geological features (Geological SiteTypes)**

EO - Inland Outcrops;  
EC - Coastal cliffs and foreshore;  
IA – Active process geomorphological

(\*) or restored to favourable condition if features are judged to be unfavourable.

Standards for favourable condition are defined with particular reference to the specific designated features listed in Table 1, and are based on a selected set of attributes for features which most economically define favourable condition as set out in Table 2, Table 2a and Table 3:

**Table 1 Individual designated interest features**

BAP Broad Habitat type / Geological Site Type	Specific designated features	Explanatory description of the feature for clarification	SSSI designated interest features	SAC designated interest features	SPA bird populations dependency on specific habitats			Ramsar criteria applicable to specific habitats			
					Annex 1 species	Migratory species	Waterfowl assemblage	1a Wetland characteristics	2a Hosting rare species &c	3a 20000 waterfowl	3c 1% of population
Maritime Cliff and Slope	SAC feature: Vegetated sea cliffs of the Atlantic and Baltic coast.  Mosaic of vegetated maritime cliff and slope habitats including species rich and unimproved grassland; calcareous grassland; neutral grassland; acid grassland; coastal heathland; bracken; coastal woodland; wet flushes; bare ground.	Dynamic coastal vegetation communities on naturally slumping soft cliffs.  NVC types present include: MG7; H7d; MC8a; MC8, MC9; MG7; MG1; W22; S10; CG2; MC9; H8; AG; H10; MG1; MG5; U2b; CG; U16; MG12; MG6; OV27; OV26; ET; AP; M23; OV24; S26b	✓	✓							
Broadleaved mixed and yew Woodland	SAC feature: Vegetated sea cliffs of the Atlantic and Baltic coast	Dynamic coastal vegetation communities on naturally slumping soft cliffs  The Beast Cliff to Millers Nab section is nationally important for its coastal/woodland	✓	✓							

		vegetation.  NVC types present include: W1; W8; W9; W22; W25; W9; WW; W23; W5; W8; W21; W24)									
Littoral Rock	Biological communities on Intertidal rock reef  Main shore habitats are: <ul style="list-style-type: none"> <li>• Moderately exposed shore (flat bedrock);</li> <li>• Moderately exposed shore (large and massive boulder fields);</li> <li>• Exposed rocky shore.</li> </ul>	Marine interest feature. Varied geology plays a major role in creating exceptionally wide range of habitats and associated communities. Site shows complete zonation of rocky shore biotopes; rich and varied lower shore communities, the nationally uncommon <i>Rhodothamniella floridula</i> biotope is found at the base of recent slumps.	✓								
EO - Inland Outcrops	GCR 267 Aalenian – Bajocian Hawsker Bottoms	Hawsker Bottoms is a key palaeobotanical and stratigraphical site and has the best inland exposure of the Scarborough Formation, here near the northern limit of its outcrop. It has provided one of the most varied fossil faunas from this portion of the Middle Jurassic, including the only corals so far	✓								

		recorded from this formation.									
EC - Coastal Cliffs and foreshore	GCR 1013 Hettangian-Plieinsbachian Normanby Styne Batts-Miller's Nab	One of Britains's classic geological localities famous for more than 150 years for its exposures of Lower Jurassic rocks. These cover the mid-lower Sinemurian-Upper Pleinsbachian time interval and this section has the most complete sequence of these stages in Britain. Robin Hood's Bay shows the only section through the entire Upper Sinemurian and a non-condensed development of the ibex ammonite zone in a 200 m thick Lias succession offering unrivalled study opportunities.	✓								
EC- Coastal cliffs and foreshore	GCR 152 Mezozoic palaeobotany Beast Cliff	In the Beast Cliff area a number of plant bearing horizons occur within the Saltwick and Cloughton Formations. Many species occur which area seldom found at Yorkshire's other famous Jurassic plant localities. Many species (63) of filicales, bennettitales, cycads	✓								

		and conifers are recorded from Beast Cliff; a prolific palaeobotanical locality with notable rarities.									
EC – Coastal cliffs and foreshore	GCR 158 Mezozoic palaeobotany- Maw Wyke (Hawsker Bottoms).	Hawsker Bottoms is a key palaeobotanical and stratigraphical site and has the best inland exposure of the Scarborough Formation, here near the northern limit of its outcrop. It has provided one of the most varied fossil faunas from this portion of the Middle Jurassic, including the only corals so far recorded from this formation.	✓								
EC – Coastal cliffs and foreshore	GCR 258 Toarcian. Castle Chamber – Maw Wyke	A site of international stratigraphic significance for its exposures of Toarcian and Pliensbachian rocks. A complete section from the Dogger Formation through the Alum Shales, Jet Rock series and Grey shales into the Middle Lias Ironstone series is represented. Extensive exposures of historic renown.	✓								
EC –	GCR 259 Toarcian	Blea Wyke is the single	✓								

Coastal cliffs and foreshore	Millers Nab – Blea Wyke	<p>most important exposure in the Aalenian and Upper Toarcian rocks of Yorkshire. It has the most important coastal exposure of it here relatively thick Dogger Formation, with its World famous, highly fossiliferous ‘ Nerinea’ bed. There is also a relatively thick, and complete Upper Toarcian sequence, which contrasts with the incomplete sequence found on the north side of the nearby Peak Fault. Blea Wyke is the only site where Peak Mudstone member and Fox Cliff Siltsone Member are developed.</p>									
EC – Coastal cliffs and foreshore	GCR 264 Aalenian – Bajocian Blea Wyke	<p>The base of the Middle Jurassic sequence is well exposed around Blea Wyke and includes a relatively thick Dogger Formation with a famous and fossiliferous ‘Nerinea Bed’ of Aalenian age. The succeeding dominantly, non-marine Ravenscar Group is</p>	✓								

		well developed including its component Saltwick, Eller Beck, Cloughton and Scarborough Formations.									
IA – Active process geomorphological	GCR 1943 Coastal Geomorphology of England, Robin Hoods Bay	Robin Hood's Bay is an important site for coastal geomorphology for a series of well-developed shore platforms cut mainly across outcrops of Lower Lias shales – siltstone rhythms. The surface morphology of the platforms reflects the arrangement of bedding within a broadly anticlinal structure which has been planed off.	✓								

NB. Features where asterisks are in brackets (\*) indicate habitats which are not notified for specific habitat interest (under the relevant designation) but because they support notified species.

**Table 2 Habitat extent objectives**

<b>Conservation Objective for habitat extent</b>	To maintain the designated features in favourable condition, which is defined in part in relation to a balance of habitat extents (extent attribute). Favourable condition is defined at this site in terms of the following site-specific standards.
<b>Extent - Dynamic balance</b>	On this site favourable condition requires the maintenance of the extent of each habitat type (either designated habitat or habitat supporting designated species). Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

<b>Habitat Feature (BAP Broad Habitat level, or more detailed level if applicable)</b>	<b>Estimated extent (ha) and date of data source/estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
Maritime Cliff and Slope	83ha in total.  Derived from Natural England Unit Map. (19 May 2006)	No significant loss of feature extent subject to natural change.  Detailed extent of NVC habitats for Robin Hood's Bay to Beast Cliff is provided in Milliken, W. and Pendry, C., <i>Survey on behalf of English Nature</i> , Nov 2003. Subsequent assessments should be comparisons with this baseline, using aerial photography and other remote sensing data.	It is likely to be very difficult to make accurate assessments of extent for certain habitats, especially if they form complex mosaic with other habitats. The emphasis here should be more on assessing whether any component habitat has been obviously reduced by anthropogenic factors, such as agricultural development, fly tipping, etc.  Allow natural geomorphological coastal processes such as cliff recession and slumping to proceed freely. Active coastal processes are essential for maintaining the range of habitats and associated species that reflect different stages of cliff formation and succession.  Avoid introduction of physical constraints that will reduce the mobility of the cliff and damage the features of interest.

Broadleaved mixed and yew Woodland	49 ha in total  Derived from Natural England Unit Map. (19 May 2006)	No loss of extent of ancient coastal woodland.  Field survey and/or aerial photography, in relation to baseline map.  Detailed extent of NVC habitats for Robin Hood's Bay to Beast Cliff is provided in Milliken, W. and Pendry, C., <i>Survey on behalf of English Nature</i> , Nov 2003. Subsequent assessments should be comparisons with this baseline, using aerial photography and other remote sensing data.	Stand loss due to natural processes is acceptable within the changing mosaic of the soft cliff.
Littoral Rock	233 ha  Derived from Natural England Unit Map. (19 May 2006)	No net loss of extent subject to natural change	Allow natural processes such as erosion and cliff collapse to proceed freely. Changes in extent would be considered unfavourable if attributable to activities which interrupt natural coastal processes such as coastal protection schemes or coastal development. Management should also aim to maintain good water quality.
EO - Inland Outcrops	NA		
EC - Coastal Cliffs and foreshore	NA		
IA – Active process geomorphological	NA		

### Audit Trail

#### Rationale for habitat extent attribute

(Include methods of estimation (measures), and the approximate degree of change which these are capable of detecting).

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<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Other Notes</b>

**Table 3a Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>Maritime Cliff and Slope</b> at <b>Robin Hood's Bay – Maw Wyke to Beast Cliff</b> in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.	Habitat extent	Detailed extent of NVC habitats for Robin Hood's Bay to Beast Cliff is provided in Milliken, W. and Pendry, C., Survey on behalf of English Nature, Nov 2003. Subsequent assessments should be comparisons with this baseline, using aerial photography and other remote sensing data.  For the section of the SSSI north of Robin Hood's Bay the extent of NVC habitats should be estimated from aerial photography and other remote sensing data.	No significant loss of feature extent. There should also be a targeted site-based assessment of important features.	It is likely to be very difficult to make accurate assessments of extent for certain habitats, especially if they form complex mosaics with other habitats. The emphasis here should be more on assessing whether any component habitat has been obviously reduced by anthropogenic factors, such as building defences, fly tipping, etc	Yes
Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub,	Vegetation structure: vegetation zones and	Milliken, W. and Pendry, C., <i>Survey on behalf of English Nature</i> , Nov 2003, includes 16 maps of the site showing	The vegetation mosaic typical of the site should be maintained, although the location of each habitat may change due to natural processes.	The site is unmanaged but may benefit from low density grazing to maintain the habitat mosaic - if	Yes

<p>heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.</p>	<p>transitions</p>	<p>vegetation units with an estimated proportion of each habitat within each unit.</p> <p>Subsequent assessments should be comparisons with this baseline, using similar methods (using a combination of transects where feasible, viewing the habitats from the cliff top/bottom, aerial photography and remote sensing data). Ideally the position of the transects should be recorded using GPS.</p>	<p>The site has a mosaic of vegetated maritime cliff and slope habitats including: Species rich and unimproved grassland; Calcareous grassland (<i>Briza media</i>; <i>C. flacca</i>; <i>Anthyllis vulneraria</i>; <i>Parnassia palustris</i>); Neutral grassland (including <i>Dactylorhiza fushsii</i>, <i>Orchis mascula</i>, <i>Vicia sylvatica</i>); Acid grassland (<i>Calluna vulgaris</i>; <i>Erica cinerea</i>; <i>Epetrum nigrum</i>; <i>Solidago virgaris</i>) <i>Phyllitis scolopendrium</i> (harts tongue) <i>Polystichum setiferum</i> (soft shield-fern); Coastal heathland Bracken; coastal woodland; Wet flushes; Bare ground.</p> <p>(Maw Wyke to Robin Hood's Bay includes: MG7; W22; H7d; MC8a; MC8, MC9</p> <p>Robin Hood's Bay NVC MG7; MG1; W22; S10</p> <p>Robin Hood's Bay to Beast Cliff includes NVC: CG2; MC9; H8; W22; W25; W9, AG; WW; H10; W21; MG1; MG5; U2b; CG; U16; W23; MG12; MG6; W1; W24; W5; W8; W9; OV27; OV26; ET; AP; M23; OV24; S26b)</p>	<p>ungrazed the scrub may succeed the grasslands.</p>	
<p>Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.</p>	<p>Vegetation structure: vegetation zones and transitions</p>	<p>A transect based study should be carried out to assess the zonation patterns typical of the site. Subsequent assessments should be comparisons with this baseline, using similar methods. Ideally the position of the transects should be recorded using GPS.</p>	<p>There should be no obvious recent disruption of the site's characteristic zonation pattern, as defined through previous base-line studies.</p>	<p>Soft cliffs may support up to three or four vegetation zones. It should be possible to determine a pioneer zone, possibly followed by grassland and scrubland zones. Very sheltered sites, however, may lack any clear zonation pattern.</p>	<p>Yes</p>

<p>Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.</p>	<p>Vegetation structure: maritime slope pioneer community</p>	<p>For Robin Hood's Bay to Beast Cliff, AG** community (<i>Agrostis stolonifera</i> – <i>Tussilago farfara</i> maritime mesotrophic grassland) baseline extent = 19.77ha (source: Milliken, W. and Pendry, C., <i>Survey on behalf of English Nature</i>, Nov 2003).</p> <p>Similar baselines should be prepared for the remainder of the SSSI using oblique fixed-point photography. Subsequent assessments should be comparisons with this baseline, made using the same method and photography points.</p>	<p>The area of exposed soil should not fall below a target value set on a site-by-site basis. Record the area of exposed soil using oblique fixed point photography.</p> <p><i>Agrostis stolonifera</i> – <i>Tussilago farfara</i> community includes wild carrot (<i>Daucus carota</i>) uncommon in Yorkshire</p>	<p>Sparsely vegetated ground and exposed soil are important for specialist invertebrates e.g. mining bees and wasps. This site has the rare semi aquatic beetle <i>Ochthebius exsculptus</i>. Wet exposed clay areas include invertebrate species such as <i>Bembidion nitidulum</i>; <i>Potamopyrg jenkinsi</i>; dry exposed areas <i>Chthonius ischnocheles</i>; <i>Candidula intersecta</i>.</p>	<p>Yes</p>
<p>Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.</p>	<p>Indicators of local distinctiveness: notable species*</p>	<p>Use GPS to pinpoint location of the species on an annotated map. For small populations use fixed point photography. Survey should be carried out at the season appropriate for the species</p> <p>Record presence/absence of invertebrate species.</p> <p><b>The site should be fully assessed for invertebrate species as there are many rare species.</b></p>	<p>Populations of notable species (vascular plants, bryophytes, lichens, fungi, invertebrates) should be maintained or enhanced.</p> <p>Uncommon vascular plants: <i>Gentianella amarella</i>; <i>G. campestris</i>; <i>Ophrys apifera</i>; <i>Coeloglossum viride</i>; <i>Platanthera chlorantha</i>, <i>P. bifolia</i>; <i>Epipactis helleborine</i>.</p> <p>Very local wood vetch (<i>Vicia sylvatica</i>) found on slumped ground.</p> <p>Uncommon woodland species include: <i>Cephalanthera longifolia</i> (Narrow-leaved helleborine-nationally rare and declining species recorded on Beast Cliff);</p>	<p>Soft cliffs are especially important for certain notable invertebrates (bees, wasps, beetles, flies and butterflies) that are dependent on bare ground and pioneer plant communities associated with land slips.</p> <p>The key point here is to ensure that the full assemblage of rare and scarce species is not undergoing any decline, possibly towards local extinction. This attribute is</p>	

			<p>Soft shield fern (<i>Polystichum setiferum</i>) and <i>Corydalis claviculata</i> (climbing corydalis) both uncommon in Yorkshire – found on Beast Cliff.</p> <p>Invertebrate species include:  very rare rove beetle <i>Trimium brevicorne</i>; uncommon <i>Mesopoldras amaenus</i>; the scarce pill woodlouse <i>Armadillidium pulchellum</i>;</p> <p>Woodland and scrub-woodland support rich varied invertebrate fauna including many local and rare species, some of which are characteristic of ancient woodland: <i>Quedius plagiatus</i> and <i>Mesites tardii</i> (v. local deadwood associated beetles); <i>Tachyporus atriceps</i>, <i>Mniophila muscorum</i> (moss and litter inhabiting); <i>Chrysomela aenea</i> (alder leaf beetle) and <i>Lyciella illota</i> (lauxaniid fly); scarce canopy living soldier beetle (<i>Ragonycha translucida</i>); <i>Malthodes guttifer</i>; <i>M. mysticus</i>; ancient deadwood breeding fly (<i>Xylophagus ater</i>); very local marsh fly (<i>Renocera strobli</i>); and many wood boring species including <i>Mesites tardii</i>; <i>Ablasiaanaxenor</i>; <i>Eulophus thespius</i>; <i>Mesopoldras amaenus</i> (uncommon in North); Carabidae; Ptiliidae; Coccinellidae; Chrysomelidae; Nitidulidae)</p> <p>3 ancient woodland molluscs have been recorded: point snail (<i>Acicula fusca</i>), ash-black slug (<i>Limax cinereoniger</i>); brown snail (<i>Zenobiella subrufescens</i>)</p>	<p>only applicable (mandatory) for those spp which are recognised as part of the reason for notification of the habitat feature but are not notified features in their own right or covered by other targets for this feature.</p>
Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as	Indicators of local distinctiveness	Flushes too numerous to map and also transient because of landslipping and	Site-specific targets should be set to maintain the key species of flush vegetation. The overall extent and	Maritime flush communities can support a number of uncommon species, such

<p>woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.</p>	<p>s: maritime slope flush vegetation*</p>	<p>mass movement. Record presence/absence of key invertebrate and plant species. Map the location of the main pools using GPS and record key species.</p>	<p>hydrological status of flushes should be maintained, although the unstable nature of soft cliffs may mean that the distribution of flushes throughout the site may change. Rare or local species include: <i>Triglochin palustris</i> (marsh arrowgrass); common butterwort (<i>Pinguicula vulgaris</i>); distant sedge (<i>Carex distans</i>) Red Data Book flies (<i>Oxycera pardalina</i>; <i>Dolichopus signifer</i>) found near flush on Beast Cliff. Wet flushes and seepages are important for water beetles, craneflies Species rich pools on Beast Cliff support a number of species which are rare or local species in N.Yorks: common club rush (<i>Schoenoplectus lacustris</i>); marsh cinquefoil (<i>Potentilla palustris</i>); Lesser bulrush (<i>Typha angustifolia</i>); Greater spearwort (<i>Ranunculus lingua</i>); white water lily (<i>Nymphaea alba</i>); Bog bean (<i>Menyanthes trifoliata</i>)</p>	<p>as <i>Equisetum telmateia</i> and <i>Schoenus nigricans</i>, especially where base-rich conditions prevail. Again this vegetation is often unlikely to fit any currently recognised NVC community.</p>	
<p>Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.</p>	<p>Geomorphological naturalness</p>	<p>Assess percentage of linear extent constrained by artificial structures. The baseline should relate to the situation at the time of notification, but if pre-notification structures are causing problems they should be reported. The habitat should be regarded as unfavourable if any recent</p>	<p>Cliff habitat free of artificial sea defences except those at Robin Hood's Bay village. No artificial modification of flushes and seepages</p>	<p>This mainly applies to coastal protection systems built in front of, and particularly on the slopes of, soft cliffs, in order to slow or stop the rate of erosion. These have the effect of stabilising the cliff face, resulting in geological exposures being obscured, bare soil and early pioneer</p>	<p>Yes</p>

		activities or constructions are affecting the cliff's natural geomorphology or hydrology.		stages being progressively overgrown, and wet flushes drying out.	
Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.	Indicators of local distinctiveness: Coastal heath	Use the method developed for common standard monitoring for lowland heath.  Record presence/absence of <i>Bembidion nigricorne</i> ; <i>Altica britteni</i> invertebrate species.	Use the targets developed for common standard monitoring for lowland heath.	There is a small community of NVC H7d <i>Calluna vulgaris-Scilla verna</i> heath, <i>Empetrum nigrum</i> sub-community at the northern end of the site. This is a northern sub community almost exclusive to northern Scotland.  V. local heathland beetles: <i>Bembidion nigricorne</i> ; <i>Altica britteni</i> have been reported nr Ravenscar.	
Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.	Indicators of local distinctiveness: Coastal scrub and woodland*	Use the method developed for common standards monitoring for woodland.	Use the targets developed for common standards monitoring for woodland.	In more sheltered situations, scrub can become overly dominant, and spread at the expense of maritime heath or maritime grassland. In these situations it is unlikely to be seen as a feature of interest, and scrub clearance programmes may be required.	
Soft maritime cliff and slope: Soft cliffs may include a range of vegetation types such as woodland and scrub, heathland or grassland. Much of the vegetation may not fit any of the currently recognised NVC communities.	Indicators of local distinctiveness: extent and quality of cliff top grassland*	Use the method developed for common standards monitoring for the relevant grassland type	Use the targets developed for common standards monitoring for the relevant grassland type	At this site there are important stands of acid, neutral and calcareous grassland vegetation that will require monitoring.  The Frog orchid ( <i>Coeloglossum viride</i> )	

				which has a restricted distribution throughout the UK is found on Common Cliff.	
Hard maritime cliff and slope	Habitat extent	A baseline map should be prepared to show the distribution of sea cliff vegetation, preferably using aerial photography and other remote sensing data. Subsequent assessments should be comparisons with this baseline, using similar methods.	No significant loss of feature extent. There should also be a targeted site-based assessment of important features.	It is likely to be very difficult to make accurate assessments of extent for certain habitats, especially if they form complex mosaic with other habitats. The emphasis here should be more on assessing whether any component habitat has been obviously reduced by anthropogenic factors, such as agricultural development, fly tipping, etc.	Yes
Hard maritime cliff and slope	Vegetation structure: vegetation zones and transitions	A baseline transect-based study should be carried out to assess the zonation patterns typical of the site. Subsequent assessments should be comparisons with this baseline, using similar methods. The position of transects should ideally be recorded using GPS.	The range of zones and transitions typical of the site, including transitions to other habitats, should be maintained.	Maritime cliffs may support up to five vegetation zones including - maritime rock crevice/cliff ledge community, maritime therophyte community, maritime grassland, maritime heath, maritime scrub. However, very sheltered sites may lack any clear zonation pattern.	Yes
Hard maritime cliff and slope	Vegetation structure: vegetation zones and transitions	A baseline transect-based study should be carried out to assess the zonation patterns typical of the site. Subsequent assessments should be comparisons with this baseline, using similar methods. The position of transects should ideally be	There should be no obvious recent disruption of the site's characteristic zonation pattern, as defined through previous base-line studies.	Maritime cliffs may support up to five vegetation zones including - maritime rock crevice/cliff ledge community, maritime therophyte community, maritime grassland, maritime heath, maritime scrub. However, very	Yes

		recorded using GPS.		sheltered sites may lack any clear zonation pattern.	
Hard maritime cliff and slope	Vegetation structure: maritime grassland	Assess the general height of the main vegetation layer within representative areas.	Ungrazed stands: the maritime grassland sward should be clearly ungrazed and should in general exceed a height of 10cm.	The objective for ungrazed stands is to maintain a thick, mattress-like community of <i>Festuca rubra</i> , which in some cases can be important for burrowing seabirds. The percentage area of grassland to have a sward height of more or less than 10cm should be decided on a site-by-site basis.	Yes
Hard maritime cliff and slope	Vegetation structure: maritime grassland	Assess the general height of the main vegetation layer within representative areas.	Grazed stands: the maritime grassland sward should in general be no higher on average than 10cm.	The objective for grazed swards the objective is to prevent the site becoming overly rank due to lack of grazing. The percentage area of grassland to have a sward height of more or less than 10cm should be decided on a site-by-site basis.	Yes
Hard maritime cliff and slope	Vegetation structure: maritime therophyte vegetation*	Record the percentage area of bare ground within clearly defined sample areas or using transects.	The average area of bare ground should not fall below 10% of the defined area.	There should be some bare ground, but this is likely to vary from site to site and from season to season. Because of the seasonal nature of this community it can only be properly assessed during spring or early summer.	
Hard maritime cliff and slope	Vegetation composition: rock-crevice and cliff-ledge vegetation	A list of all key species for the site should be compiled. These could be recorded using Oblique Fixed Point Photography.	Viable populations of any of the following species found on the site should be maintained: <i>Armeria maritima</i> , <i>Asplenium marinum</i> , <i>Aster tripolium</i> , <i>Cochlearia officinalis</i> , <i>Crithmum maritimum</i> , <i>Lavatera</i>	This is a very variable feature that may be absent from certain sites, especially some of the more sheltered sites, but	Yes

			arborea, Ligusticum scoticum, Limonium spp, Plantago maritima, Sedum rosea, Spergularia rupicola, Brassica oleracea and Inula crithmoides.	should be regarded as mandatory at all sites where its present. It may have important site-specific elements. Certain species, such as Ligusticum scoticum, are restricted to northern sites, whilst others, such as Crithmum maritimum have a more southern distribution. On calcareous cliffs the uncommon Brassica oleracea maritime cliff-ledge community (MC4) may be present.
Hard maritime cliff and slope	Vegetation composition: maritime therophyte vegetation*	Field observations using e.g. structured walk, transects.	At least one of the following annual species should be at least occasional: Cerastium diffusum ssp diffusum, Catapodium marinum, Bromus hordeaceus ssp. ferronii.	The vegetation is likely to be an Armeria maritima-Cerastium diffusum ssp diffusum therophyte community (MC5), which is known to support a number of rare winter annuals, such as Herniaria ciliolata, Mibora minima, and Ononis reclinata. It may not be present at certain sites but should be regarded as mandatory at all sites where it is present. Where rare annuals are present they should also be included in the assessment under 'Indicators of local distinctiveness'. The presence of invasive non-native species is undesirable and is covered

				under 'Negative indicator species'.	
Hard maritime cliff and slope	Vegetation composition: positive indicator species of grazed maritime grassland*	Assess the frequency (using the DAFOR scale) of desirable maritime forbs. Ideally, sample points should be registered using a Differential Geographical Positioning System (GPS).	In addition to <i>Festuca rubra</i> , two or more of the following species should be at least occasional in the sward: <i>Anthyllis vulneraria</i> , <i>Armeria maritima</i> , <i>Crithmum maritimum</i> , <i>Daucus carota</i> , <i>Hyacinthoides non-scripta</i> , <i>Ligusticum scoticum</i> (in Scotland) <i>Plantago coronopus</i> , <i>Plantago maritima</i> , <i>Silene uniflora</i> , <i>Scilla verna</i> .	The maritime fringe is normally no further than 10m from the cliff top. The vegetation within this zone is likely to be a <i>Festuca rubra</i> – <i>Armeria maritima</i> maritime grassland (MC8). At certain sites it may be advantageous to extend this assessment into the para-maritime zones. On calcareous cliffs this may include either a <i>Festuca rubra</i> - <i>Daucus carota</i> community (MC11) or a <i>Festuca rubra</i> - <i>Scilla verna</i> sub community of the <i>Festuca ovina</i> - <i>Carlina vulgaris</i> grassland (CG1f). On acidic cliffs <i>Festuca rubra</i> – <i>Holcus lanatus</i> maritime grassland (MC9) or a <i>Festuca rubra</i> – <i>Plantago</i> spp maritime grassland (MC10) are more likely to predominate.	
Hard maritime cliff and slope	Vegetation composition: positive indicator species of ungrazed maritime grassland*	Assess the cover and frequency of <i>Festuca rubra</i> using e.g. structured walk, transects	In exposed situations <i>Festuca rubra</i> should be at least abundant and have a frequency close to 100%. In sheltered situations targets will be set on a site-by-site basis.	In exposed situations, the main community type is likely to be a species poor version of the <i>Festuca rubra</i> – <i>Armeria maritima</i> maritime grassland (MC8), but in more sheltered situations the vegetation is likely to be more diverse and may be important for	

				other plant species. The uncommon <i>Festuca rubra</i> – <i>Hyacinthoides non-scripta</i> maritime bluebell community may be present. (See also 'Indicators of local distinctiveness')
Hard maritime cliff and slope	Indicators of local distinctiveness: notable species*	Use GPS to pinpoint location of the species on an annotated map. For small populations use fixed point photography. Survey should be carried out at the season appropriate for the species.	Populations of notable species (vascular plants, bryophytes, lichens, fungi and invertebrates) should be maintained or enhanced	The key point here is to ensure that the full assemblage of rare and scarce species is not undergoing any decline, possibly towards local extinction. In the maritime fringe of grazed grassland species such as <i>Asparagus officinalis</i> ssp. <i>prostratus</i> , <i>Parapholis incurva</i> , <i>Tephrosieris integrifolia</i> , <i>Silene nutans</i> and <i>Trifolium occidentale</i> should be considered. In the para-maritime zone of calcareous grazed grassland, species such as <i>Aster linosyris</i> and <i>Genista tinctoria</i> spp <i>littoralis</i> may need to be considered. In the para-maritime zone of acidic grazed grassland, species such as <i>Allium schoenoprasum</i> , <i>Astragalus danicus</i> , <i>Oxytropis halleri</i> , <i>Primula scotica</i> , <i>Trifolium occidentale</i> or <i>Tephrosieris integrifolia</i> may need to be

				considered. This attribute is only applicable (mandatory) for those spp which are recognised as part of the reason for notification of the habitat feature but are not notified features in their own right or covered by other targets for this feature.	
Hard maritime cliff and slope	Vegetation composition: negative indicator species	Assess the frequency of undesirable species using e.g. structured walk, transects.	3) Invasive non-native plant species should be absent or rare if already present.	'Weed' species characteristic of fertile soils may be a problem. At some sites it may be necessary to include non-native invasive species such as <i>Carpobrotus edulis</i> or <i>Disphyma crassifolium</i> .	Yes
Hard maritime cliff and slope	Vegetation composition: frequency of bracken and scrub*	Assess the frequency of bracken and scrub using the DAFOR scale.	Where maritime grassland or maritime heathland are deemed to be important features, bracken and scrub should be no more than occasional throughout the site.	At certain sheltered sites bracken can form an important community, often supporting understory species such as bluebells. Maritime scrub, such as gorse or blackthorn, may form an important part of the maritime zonation. This habitat may be important for invertebrates.	
Hard maritime cliff and slope	Vegetation composition: negative indicator species	Assess the frequency of undesirable species using e.g. structured walk, transects.	1) The following species should be no more than rare: <i>Cirsium arvense</i> , <i>Cirsium vulgare</i> , <i>Lolium perenne</i> , <i>Rumex obtusifolius</i> , <i>Rumex crispus</i> , <i>Senecio jacobaea</i> , <i>Trifolium repens</i> , <i>Urtica dioica</i> .	'Weed' species characteristic of fertile soils may be a problem. At some sites it may be necessary to include non-native invasive species such as <i>Carpobrotus edulis</i> or <i>Disphyma crassifolium</i> .	Yes
Hard maritime cliff and slope	Vegetation	Assess the frequency of	2) In exposed situations broad-leaved	'Weed' species	Yes

	composition: negative indicator species	undesirable species using e.g. structured walk, transects.	grasses such as <i>Agrostis stolonifera</i> , <i>Dactylis glomerata</i> and <i>Holcus lanatus</i> should be sub-dominant to <i>Festuca rubra</i> .	characteristic of fertile soils may be a problem. At some sites it may be necessary to include non-native invasive species such as <i>Carpobrotus edulis</i> or <i>Disphyma crassifolium</i> .	
Hard maritime cliff and slope	Indicators of local distinctiveness: coastal scrub*	Use the method developed for monitoring scrub in the common standards guidance for woodlands.	Use the targets developed for monitoring scrub in the common standards guidance for woodlands.	In more sheltered situations, scrub can become overly dominant, and spread at the expense of maritime heath or maritime grassland. In these situations it is unlikely to be seen as a feature of interest, and scrub clearance programmes may be required.	
Hard maritime cliff and slope	Indicators of local distinctiveness: coastal heath*	Use the method developed for common standards monitoring for lowland heath.	Use the targets developed for common standards monitoring for lowland heath.	Heathland is frequently interspersed with grazed coastal turf, areas of bracken and bare rock, reflecting variations in soil depth and fertility, topography and shelter from prevailing winds.	

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>

**Rationale for selection of measures of condition (features and attributes for use in condition assessment)**  
 (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).

**Other Notes**

All NVC types (including woodland) are listed under the vegetation structure as they occur as a mosaic at this site. This list is not exclusive and other habitats may be present at the site. Ground truthing should be undertaken to assess which habitats are found at the site. An invertebrate survey should be undertaken to fully assess the interest at the site.

**Table 3b Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>Broadleaved, Mixed and Yew Woodland at Robin Hood's Bay – Maw Wyke to Beast Cliff</b> in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	

<b>Site-specific standards defining favourable condition</b>					
<b>Criteria feature</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Site-specific Targets</b>	<b>Comments</b>	<b>Use for CA?</b>
All woodland types - to be adapted to reflect local distinctiveness	Habitat extent	Detailed extent of woodland habitats for Robin Hood's Bay to Beast Cliff is provided in Milliken, W. and Pendry, C., Survey on behalf of English Nature, Nov 2003.	No loss of ancient semi-natural stands. At least current extent of recent semi-natural stands maintained, although their location may alter.	Stand loss due to natural processes e.g. as a result of landslip or in minimum intervention stands is acceptable.  Stand destruction may occur if the	Yes

		Subsequent assessments should be comparisons with this baseline, using aerial photography and other remote sensing data.	No loss of ancient woodland. Some species present at the site are indicative of long-established woodland: <i>Allium ursinum</i> (ramsons) <i>Galium odoratum</i> (sweet woodruff) <i>Sanicula europaea</i> (sanicle)	understorey and ground flora are irretrievably damaged even if the canopy remains intact. As a guideline, loss can be defined as at least 0.5 ha or 0.5% of the stand area, whichever is the smaller. 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland. Targets for extent may be modified where a target has been set to increase the extent of other habitat features on the site at the expense of woodland	
All woodland types - to be adapted to reflect local distinctiveness	Structure and Natural processes	Assess by field survey using structured walk and/or transects.  The majority of woodland on this site is at Beast Cliff. It is largely inaccessible from the top of the cliff. Best access is via a path which descends Common Cliff near the coastguard look out, and proceeds south along the cliff allowing 'access' from below.	Understorey (2-5m) present over at least 20% of total stand area. Canopy cover present over 30-90 % of stand area. At least three age classes spread across the average life expectancy of the commonest trees. some areas of relatively undisturbed mature/old growth stands or a scatter of large trees allowed to grow to over-maturity/death on site (e.g. a minimum of 10% of the woodland or 5-10 trees per ha). A minimum of 3 fallen lying trees >20 cm diameter per ha and 4 trees per ha allowed to die standing.  Natural processes of stand growth, gap formation, tree and stand decline allowed to operate over most of the site.	Different woodland types will differ in their expected cover in different layers e.g. in beech or oak woods the shrub layer is often sparse. This should be reflected in the tailoring of these targets to particular sites. In coppiced stands a lower canopy cover (of standards) can be accepted, as will also be the case in parkland. More detailed targets for deadwood may be appropriate where this is an important element of the woodland (see section 5.9). Note however that assessment of dead wood targets may be difficult to carry out and caution should be exercised in judging condition for this element.  NB: deadwood is important at this site for invertebrates.	Yes
All woodland types - to be adapted to reflect local	Composition	Assess by field survey using structured walk and/or transects.	At least 95% of cover in any one layer of site-native or acceptable naturalised species.	At Boggle Hole 0.26ha of NVC W8e <i>Geranium robertianum</i> sub community was recorded in Milliken, W. and	Yes

distinctiveness		<p>The majority of woodland on this site is at Beast Cliff. It is largely inaccessible from the top of the cliff. Best access is via a path which descends Common Cliff near the coastguard look out, and proceeds south along the cliff allowing 'access' from below.</p> <p>For inaccessible areas use oblique/aerial photography and remote sensing data to compare against baseline in Milliken, W. and Pendry, C., Survey on behalf of English Nature, Nov 2003.</p>	<p>Species found include:  <i>Fraxinus excelsior</i> (Ash)  <i>Betula</i> sp. (Birch)  <i>Corylus avellana</i> (hazel)  <i>Acer campestre</i> (maple)  <i>Quercus</i> spp. (Oak)  <i>Sorbus acuparia</i> (Rowan)  <i>Ilex aquifolium</i> (Holly)  <i>Alnus glutinose</i> (Alder)  <i>Salix</i> spp. (Willow)  <i>Luzula sylvatica</i> (woodrush)  <i>Mercurialis perennis</i> (Dogs mercury)  <i>Chrysosplenium oppositifolium</i> (opposite-leaved golden saxifrage)</p> <p>Beast Cliff includes NVC: W22; W25; W9, WW; W21; W23; W1; W24; W5; W8.</p> <p>Death, destruction or replacement of native woodland species through effects of introduced fauna or other external unnatural factors not more than 10% by number or area in a five year period.</p>	<p>Pendry, C., Survey on behalf of English Nature, Nov 2003. In this area sycamore and ash dominate the canopy (although the composition does not reflect the W8e classification very closely). <i>Urtica dioica</i> (nettles) present in sycamore woodland indicate nutrient enrichment from farmland; negative indicator species should be monitored as an indicator of pollution.</p> <p>Where cover in any one layer is less than 100% then the 95% target applies to the area actually covered by that layer. Factors leading to the death or replacement of woodland species could include pollution or new diseases. Damage to species by non-native species that does not lead to their death is not necessarily unacceptable. Excessive browsing/grazing, even by native ungulates, may be undesirable if it causes shifts in the composition/structure of the stand.</p>	
All woodland types - to be adapted to reflect local distinctiveness	Indicators of local distinctiveness	<p>Assess by field survey using structured walk and/or transects, or as appropriate to feature.</p> <p><b>Woodland invertebrate fauna is important and a full survey should be undertaken.</b></p>	<p>50% of ground flora cover referable to relevant NVC community.</p> <p>Target(s) also to be set to maintain distinctive elements at current extent/levels and/or in current locations, e.g. to maintain important microhabitats</p>	<p>This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not covered adequately by the previous attributes, or by separate guidance (e.g. notified species features). For notable species it is not intended to set a target for detailed species monitoring,</p>	Yes

			(other than dead wood), patches of associated habitats, transitions between habitats, or existing populations of locally notable species (other than trees/shrubs).	rather to provide a rapid indication of presence/ absence and/or approximate extent, allowing for natural fluctuations in population size. Distinctive elements and patches should be marked on maps for ease of checking in the field where possible.	
All woodland types - to be adapted to reflect local distinctiveness	Regeneration potential	Assess by field survey using structured walk and/or transects.	Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period (or equivalent regrowth from coppice stumps).  No planting.	A proportion of gaps at any one time may develop into permanent open space; equally some current permanent open space/glades may in time regenerate to closed canopy. Regeneration may often occur on the edges of woods rather than in gaps within it. The density of regeneration considered sufficient is clearly less in parkland sites than in high forest; in coppice most of the regeneration will be as stump regrowth. The minimum level of regeneration to be acceptable from a nature conservation viewpoint is likely to be much less than that needed where wood production is also an objective.	Yes

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
Many of the habitats within the mosaic do not closely represent the NVC category that has been assigned. For this reason a reduced site specific target of 50% of ground flora cover referable to relevant NVC community has been set and may need adjusting following site visits.
No planting target set as this site is unmanaged and should remain so.

<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b> (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
<b>Other Notes</b>

**Table 3c Site-Specific definitions of Favourable Condition** *[insert separate Table 3 for each BAP broad habitat]*

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>Littoral Rock at Robin Hood's Bay –Maw Wyke to Beast Cliff</b> in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
Littoral Rock	Distribution of biotopes. Spatial arrangement of biotopes at specified locations	Transect surveys should be completed in the same locations as those in the report ' <i>Marine Intertidal Survey of Robin Hoods Bay Sensitive Marine Area</i> ', A. Brunstrom, Sept 2000-April 2001 to assess the spatial arrangement of biotopes.	Maintain the distribution and/or spatial arrangement of the biotope subset, allowing for natural succession/known cyclical change.  Biotopes present are: Bulmer Steel: ELR, MB, Bpat Fves 1; ELR, MB, Bpat; ELR, MB, Myt B; ELR, MB, M LR, RKP, FK	The wrinkle fishery in the bay area may impact on the site.  Surveys should be completed to assess the impact of the sewage treatment system.  Where changes in distribution/spatial pattern are known to be clearly attributable to cyclical succession or an expected shift in distribution then the target value should accommodate this variability. Where there is a change in	Yes

		<p>Robin Hoods Bay slipway:  MLF, BF, Fves B  ELR, MB, B pat  LR, RKp, Cor  SLR, F. Fves  MLR, R, OSM  LR, RKp, FK  MLR, FB, Fser. R  MIR. KR, Ldig. Ldig  ELR, Bo. B Pat</p> <p>Landing scar and East Scar:  ELR, M, B, Bpat.Sem  ELR, MB, Myt B  MLR, BF, Fves. B  MLR, BF, Fser. R  SLR, F, FveS  MLR, Eph Rho  MIR, KR Ldig Ldig</p> <p>Boggle Hole:  ELR, MB, Bpat, Sem  MLR. BF, Fves B  SLR, F, Fves  ELR, MB, Myt, B  MLR, BF, Fser R  MLR, BF, Fser, Fser, Bo  LR, RKp, FK  MIR, KR, Ldig Ldig</p> <p>Peak steel:  ELR, C, off  ELR, Myt, B  ELR, Myt  ELR, B Pat Sem</p> <p>Blea Wyke Steel:</p>	<p>biotope distribution/spatial pattern outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.</p>
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			ELF, B.pat Fves 1 ELR, B. pat, Sem ELR, Myt, B ELR, Myt		
Littoral Rock	Extent	233 ha = total extent of littoral rock. Derived from Natural England Unit Map. (19 May 2006).  Extent has not been measured for wave cut platform and boulder shore (or individual biotopes). It may be possible to estimate this from aerial photography or remote sensing data.	No change in extent of inshore sublittoral rock subject to natural change.	It may be necessary to set a target that declines each monitoring cycle where there is an established natural loss of extent, or sufficient data available to predict (via a model) a downward trend in extent. Departure from this predicted target then would be a trigger for investigation and the feature may be considered unfavourable. Where the field assessment judges extent to be unfavourable, and subsequent investigation reveals the cause is clearly attributable to cyclical natural processes, the final assessment will require expert judgement to determine the reported condition of the feature. The feature's condition could be declared favourable where the officer is certain that the conservation interest of the feature is not compromised by the failure of this attribute to meet its target condition. Changes in extent would be considered unfavourable if attributable to activities which interrupt natural coastal processes such as coastal protection schemes or coastal development.	Yes
Littoral Rock	Extent of sub-feature or representative/notable biotopes	Assessment of the extent of (a) biotope(s) identified for the site due to their nature conservation importance.  Site 3 Boggle Hole (surveyed in <i>'Marine Intertidal Survey of Robin Hood's Bay Sensitive</i>	No change in the extent of the biotope(s) identified for the site allowing for natural succession/known cyclical change.	Where there is natural variation in extent or in cyclical succession between biotopes, then the target value should accommodate this variability. The target needs to identify biotopes that would be expected to be part of that natural cycle. Where there is a change in extent outside the expected variation or a change in the structure of the sub-feature leading to a loss of the conservation interest of the site, then condition should be considered unfavourable.	

		<p><i>Marine Area</i>, A. Brunstrom, Sept 2000-April 2001) has two nationally uncommon red algal turf biotopes: ELR Coff MLR.OSM These biotopes are not listed in the criteria but should be included in subsequent transect surveys to check their presence and extent.</p> <p>The nationally uncommon <i>Rhodothamniella floridula</i> biotope is found at the base of recent slumps.</p>			
Littoral Rock	Presence and/or abundance of specified species	Assessment of the presence/absence or abundance of a specified species identified for the feature.	Maintain presence and/or abundance of the specified species. Absence of the specified species (such as an undesirable non-native species)	Species selected should reflect the specific biological characteristics or key conservation interest of the designated site. Where a change in presence and abundance of specified species is known to be clearly attributable to natural succession then the target value should accommodate this variability. Where there is a change in biotope quality outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.	
Littoral Rock	Presence of representative/notable biotopes	Assess the presence of named biotopes.	Maintain the presence of the specified biotope allowing for natural succession/ known cyclical change.	Biotopes selected should reflect the specific biological characteristics of the designated site. Where there is natural variation in, or cyclical succession between biotopes, then the target value should accommodate this variability. The target needs to identify	

				biotopes that would be expected to be part of that natural cycle. Where there is a change outside the expected variation or a change in the structure of the sub-feature leading to a loss of the conservation interest of the site, then condition should be considered unfavourable.	
Littoral Rock	Biotope composition of the littoral rock and inshore sublittoral rock	Repeated assessment of overall biotope composition or a subset of specified biotopes identified for the site.	Maintain the variety of biotopes identified for the site, allowing for natural succession or known cyclical change:	Where changes in biotope composition are known to be attributable to natural processes (e.g. winter storm/flood events, changes in supporting processes or mass recruitment or dieback of characterising species) then the target value should accommodate this variability. Where there is a change in biotope composition outside the expected variation or a loss of the conservation interest of the site, then condition should be considered unfavourable.	Yes

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b>
(The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
It is recommended that aerial photography be used to assess extent of littoral rock biotope features.
<b>Other Notes</b>

**Table 3d Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>Coastal cliffs and foreshore (EC), Inland Outcrops (EO) and Active process geomorphological (IA)</b> at <b>Robin Hood's Bay –Maw Wyke to Beast Cliff</b> in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	
Refer to the GBNCRS Site Reports for details of designated features: Beast Cliff – Miller's Nab, North Yorkshire (1991) Maw Wyke – Miller's Nab, North Yorkshire (1991) <b>Add site map with geological sites marked to assist with condition assessments: Maw Wyke, Hawsker Bottoms, Normanby Styte Batts, Castle Chamber, Miller's Nab, Blea Wyke, Beast Cliff.</b>	

<b>Site-specific standards defining favourable condition</b>					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
<b>EC - Coastal cliffs and foreshore</b>	Exposure of features of interest	Visual/ fixed-point photography	The features of interest are exposed or can practically be re-exposed by 1 or 2 people, using hand tools, in half a day.		<b>yes</b>
	Vegetation	Visual/ fixed-point photography	Vegetation is not obscuring or damaging the features of interest		<b>yes</b>
	Scree and sediment build up	Visual/ fixed-point photography	Build up of scree and sediment from weathering and collapse of faces is not obscuring the features of interest.		<b>yes</b>
	Tipping or landfill	Visual/ fixed-point photography	There is no unconsented tipping or landfill obscuring or damaging the features of interest	<b>Not likely to be a problem</b>	<b>yes</b>

	Tree planting	Visual/ fixed-point photography	There is no unconsented tree planting obscuring or damaging the features of interest	<b>Not likely to be a problem on coastal slopes.</b>	<b>yes</b>
	Engineering works	Visual/ fixed-point photography	There are no unconsented engineering works obscuring or damaging the features of interest	<b>Ensure that coastal protection works/ slope stabilisation works by Scarborough Borough Council or private defence works do not damage features of interest.</b>	<b>yes</b>
	Geological specimen collecting	Visual/ fixed-point photography	Specimen collecting is not damaging the features of interest.	<b>Fossil collecting is very popular in Robin Hoods Bay, this is not considered to be damaging where fossils are collected from rocks which have fallen on the beach.</b>	<b>yes</b>
	Coastal processes	Visual/ fixed-point photography	Coastal processes, which cause erosion, are not constrained by human activities or structures within or adjacent to the site	One section of sea wall currently exists in front of the main town of Robin Hoods Bay.	<b>yes</b>
<b>EO - Inland Outcrops</b>	Exposure of features of interest	Visual/ fixed-point photography	The features of interest are exposed or can be re-exposed by 1 or 2 people , using hand tools in half a day.		<b>yes</b>
	Vegetation	Visual/ fixed-point photography	Vegetation is not obscuring or damaging the features of interest		<b>yes</b>
	Scree and	Visual / fixed-point photography	Build-up of scree and		<b>yes</b>

	sediment build-up		sediment from weathering and collapse of faces is not obscuring the features of interest.		
	Tipping or landfill	Visual/ fixed-point photography	There is no unconsented tipping or landfill obscuring or damaging the features of interest		yes
	Tree planting	Visual/ fixed-point photography	There is no unconsented tree planting obscuring or damaging the features of interest	<b>Not likely to be a problem.</b>	yes
	Engineering works	Visual/ fixed-point photography	There are no engineering works obscuring or damaging the features of interest	<b>Coastal protection works or slope stabilisation works may be an issue around settlements.</b>	yes
	Natural processes	Visual / fixed-point photography	Natural processes, which cause erosion are not constrained within or adjacent to the site.		yes
	Geological specimen collecting	Visual/ fixed-point photography	There is no irresponsible or inappropriate specimen collecting	<b>Fossil collecting on inland sites not likely to be as intensive as on the coast.</b>	yes
<b>IA – Active process geomorphological</b>	Exposure of features of interest	Visual/ fixed-point photography	The features of interest are exposed or can practically be re-exposed if required		yes
	Condition of features of interest	Visual/ fixed-point photography	The features of interest remain intact and are evolving naturally.		yes
	Natural processes	Visual / fixed- point photography	There is no impediment to active geomorphological processes.		yes
	Capacity for re-creation	Visual / fixed point photography	The features of interest can be re-created by natural		yes

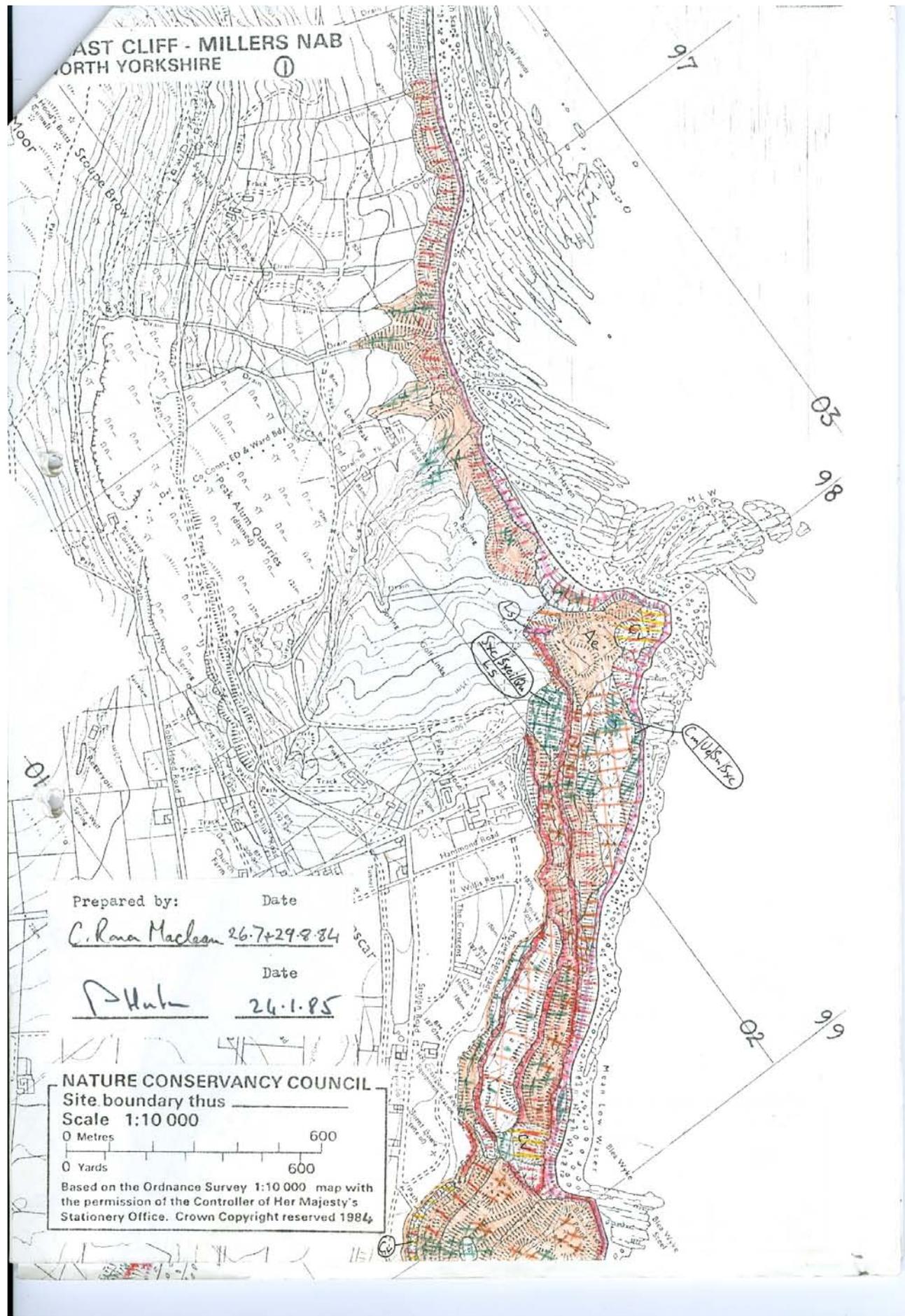
			processes where they have been damaged or destroyed.		
	Context and surroundings	Visual / fixed point photography	The context and relationship of the features of interest to the surroundings have not been diminished through physical damage and use of the surrounding land does not lead to changes that might detrimentally affect the features of interest.		
	Tipping or landfill	Visual/ fixed-point photography	There is no unconsented tipping or landfill obscuring or damaging the features of interest	<b>Not likely to be a problem on this site.</b>	<b>yes</b>
	Quarrying	Visual / fixed point photography	The features of interest have not been damaged or removed by quarrying.	<b>Not likely to be a problem</b>	<b>yes</b>
	Tree planting	Visual/ fixed-point photography	There is no unconsented tree planting obscuring or damaging the features of interest	<b>Not likely to be a problem.</b>	<b>yes</b>
	Engineering works	Visual/ fixed-point photography	There are no engineering works obscuring or damaging the features of interest		<b>yes</b>
	Geological specimen collecting	Visual/ fixed-point photography	Specimen collecting is not damaging the features of interest.	<b>Fossil collecting is popular in Robin Hood's Bay but not likely to impact on geomorphological Processes.</b>	<b>yes</b>

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b> (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
<b>Other Notes</b>

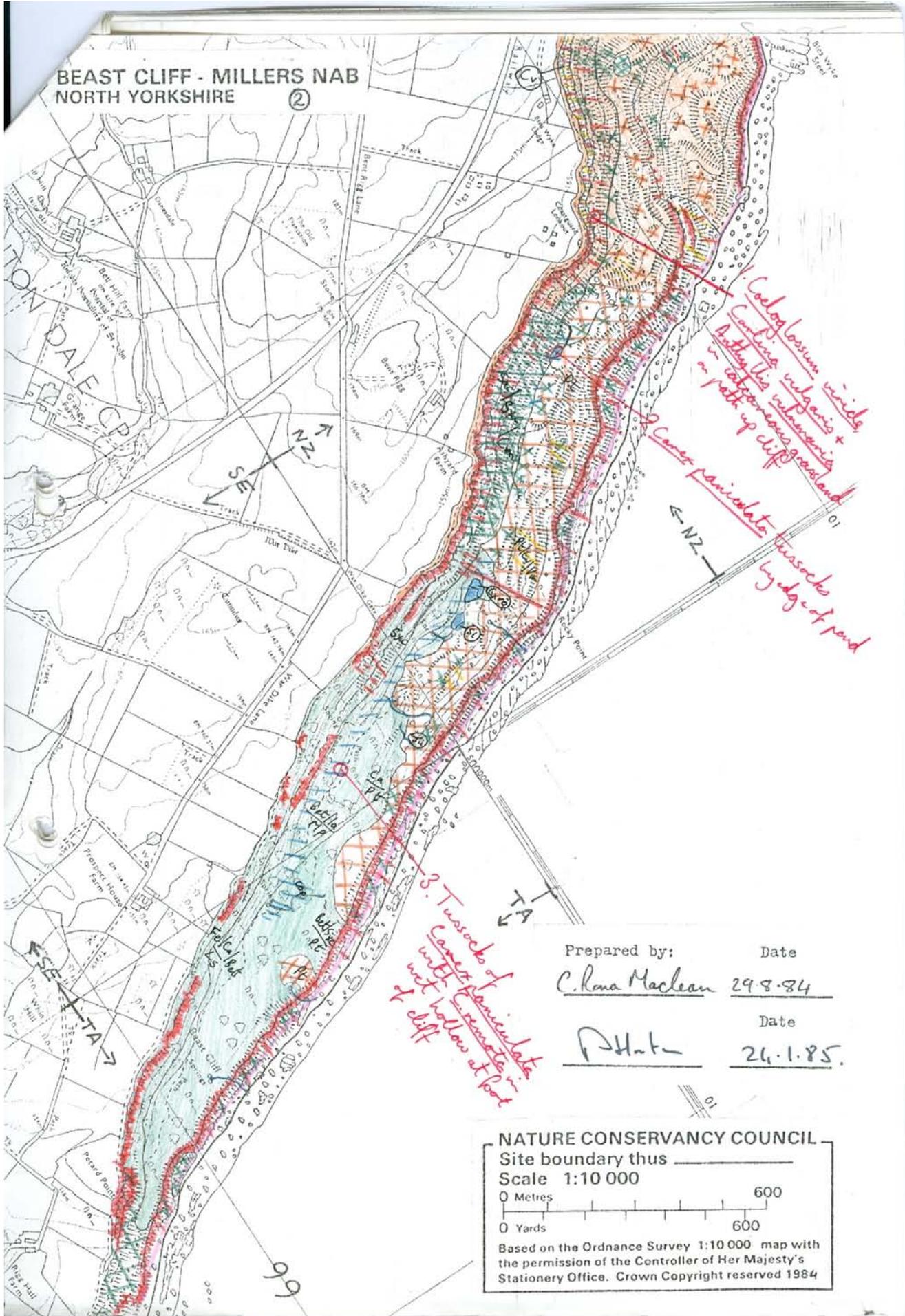
Annex 1      Maps

Science File Robin Hood's Bay: Maw Wyke to Beast Cliff NZ 90 SR 7 (York office) has a CD containing aerial photography and GIS maps referred to in the Milliken and Pendry 2003 report.

EAST CLIFF - MILLERS NAB  
NORTH YORKSHIRE



**BEAST CLIFF - MILLERS NAB  
NORTH YORKSHIRE** ②



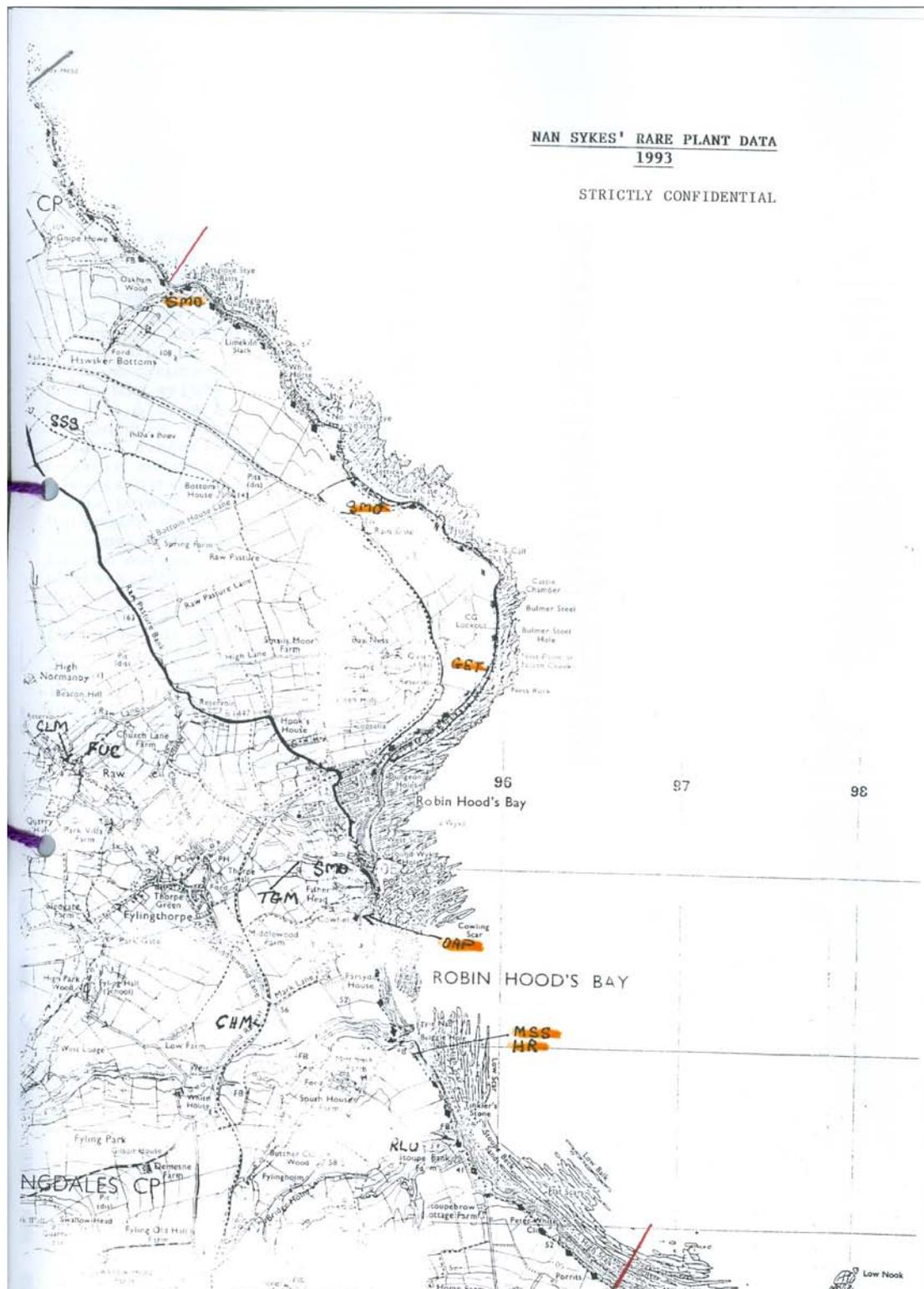
Prepared by: C. Rena Maclean Date: 29.8.84

Date: 24.1.85

**NATURE CONSERVANCY COUNCIL**  
 Site boundary thus \_\_\_\_\_  
 Scale 1:10 000  
 0 Metres 600  
 0 Yards 600  
 Based on the Ordnance Survey 1:10 000 map with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved 1984

NAN SYKES' RARE PLANT DATA  
1993

STRICTLY CONFIDENTIAL



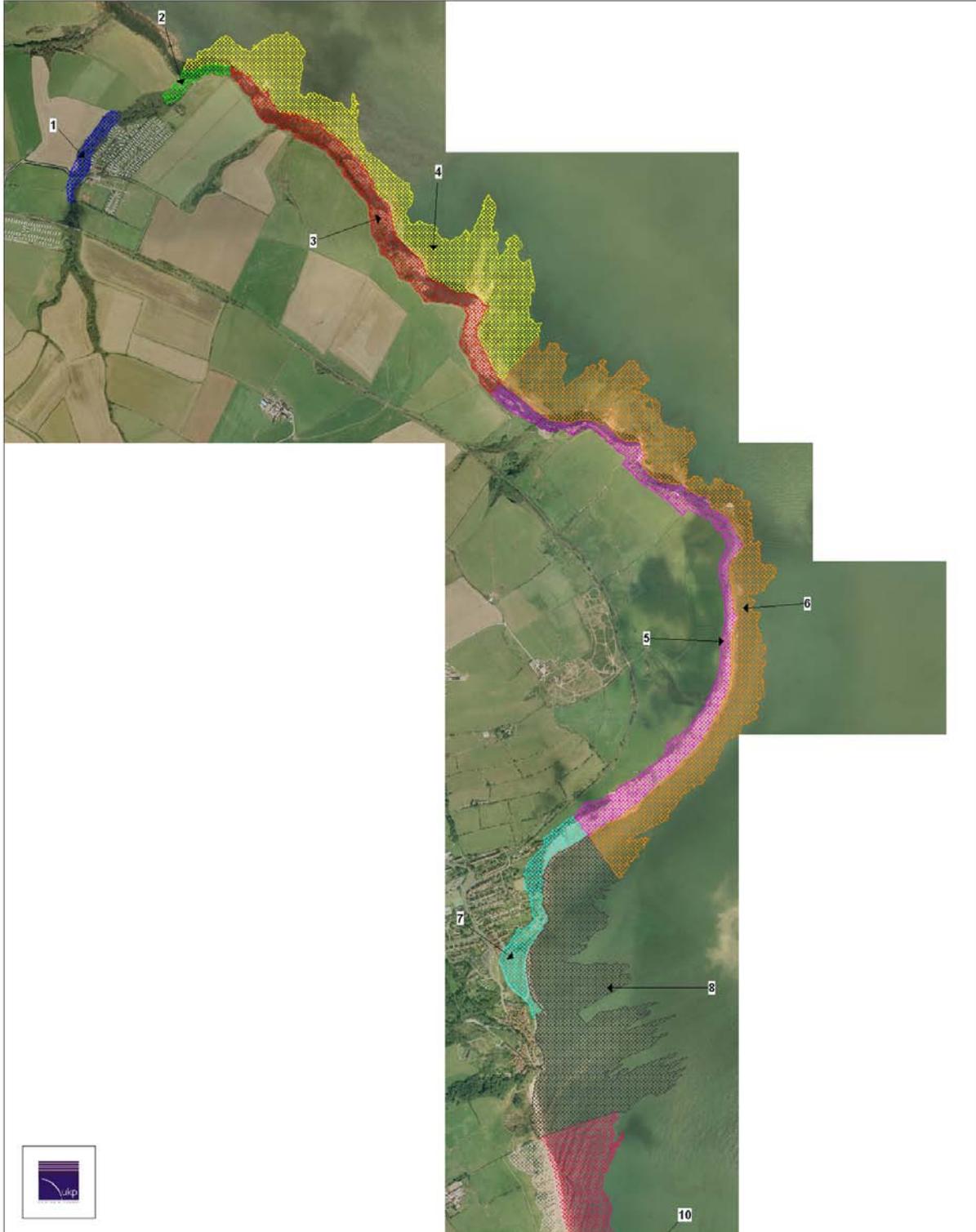
1993 Plant species of local interest.

- SMO *Smyrnum olustratum* (Alexanders)
- GET *Genista tinctoria* (Dyer's greenweed)
- OAP *Ophrys apifera* (Bee orchid)
- MSS *Melilotus altissima* (Tall melilot)
- HR *Hippophae rhamnoides* (Sea buckthorn)



# Robin Hoods Bay SSSI/SAC

## Conservation Objective Unit Map



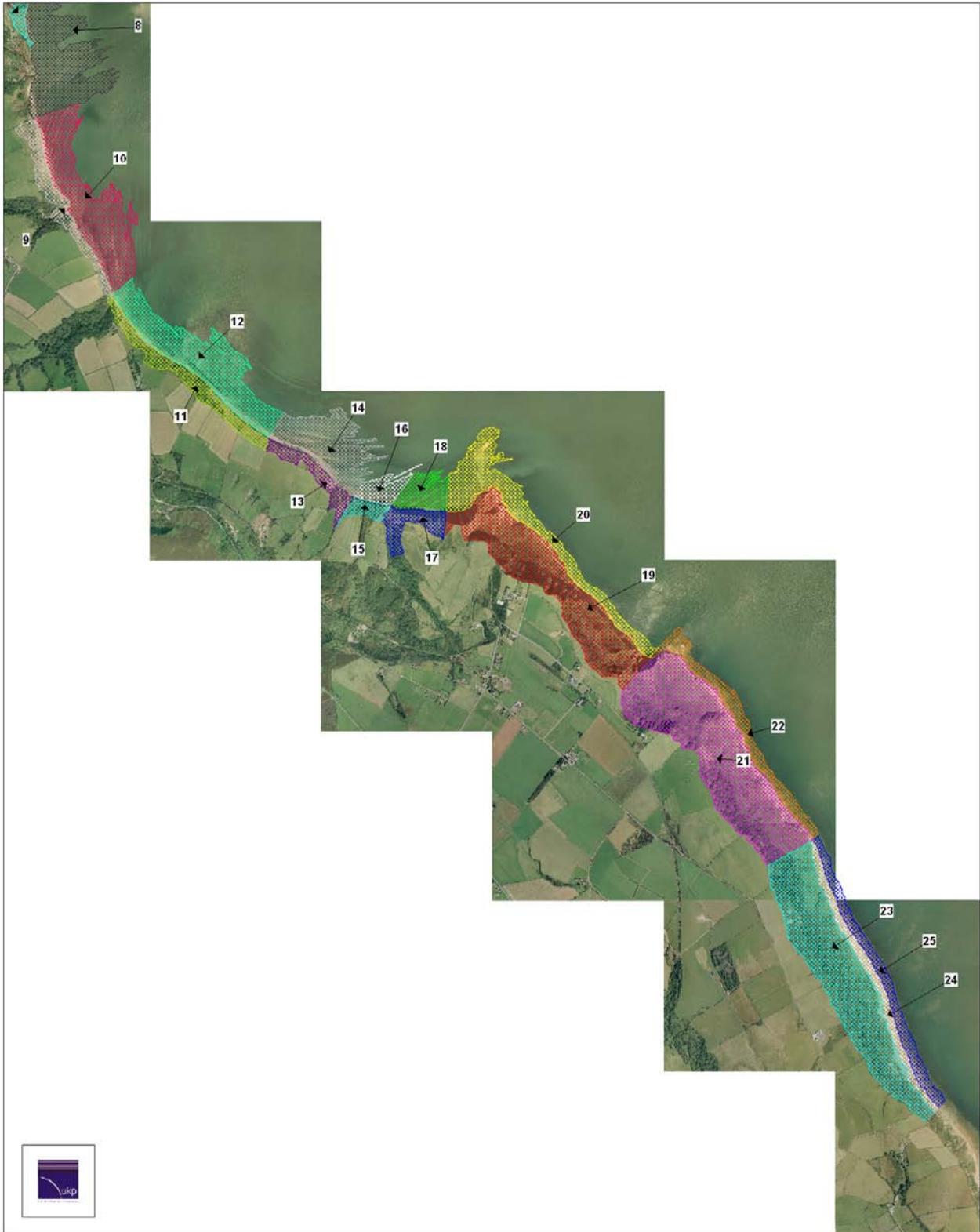
Scale 1:25000

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Aerial Photography © UXP Licence No. UXP2005/02

Map 1 of 1  
Drawn By Robbie Fisher  
Date: 19/5/2006  
Ref: nz95040593  
© English Nature 2006



English Nature  
North and East Yorkshire  
Genesis 1  
University Road  
Heslington  
YORK  
YO10 5ZQ



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Drawn by: Robbie Fisher  
Date: 19/05/2006  
Ref: n095040593  
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**English Nature**  
North and East Yorkshire  
Genesis 1  
University Road  
Heslington  
YORK  
YO10 5ZQ

## Appendix D – List of Consultees

The following organisations were consulted for information and invited to a SEA scoping workshop as part of the development of the SEA.

Local Councillors

Scarborough Borough Council

Natural England

National Trust

The National Park

English Heritage

Environment Agency

Cleveland Way Project

NE Yorkshire Geology Trust

Yorkshire Wildlife Trust

Royal Society for the Protection of Birds

Woodland Trust – Yorkshire

Scarborough Tourism Bureau

Scarborough & District Chamber of Commerce

Government Office for Yorkshire and the Humber

North Yorkshire Farming and Wildlife Advisory Group

Robin Hoods Bay Tourism Association

Coast and Moors Voluntary Action

North Yorkshire Coast Community Partnership

## Appendix E – SEA Objective Audit Trail

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2	
Population	Local business	Conditions for business success, economic growth and investment	To provide conditions which enable business success, economic growth and investment in both urban and rural locations		To provide conditions for business success, economic growth and investment.	Should include specific reference to fishing and framing	To provide conditions for business success, economic growth and investment with specific reference to the fishing and farming industries.	
	Tourism		To support the tourism industry through the provision of accessible tourist facilities, building on the natural and historic features of Scarborough Borough		To support the tourism industry through the provision of access to facilities and attractions.	No comments	To support the tourism industry through the provision of access to facilities and attractions.	
	Community inclusion	Vibrant inclusive communities which encourages a sustainable population profile and ensures that excluded and disconnected groups also participate in decision making			Maintain and enhance the viability and vitality of local communities.	Maintain and enhance vibrant local communities.	Remove enhance from the community inclusion objective	Maintain vibrant local communities
		Social inclusion and equity across all sectors				Promote social inclusion and equity.	Remove this objective.	-
	Safety	Safety and security for people and property				Where practicable ensure the safety and security of people and property.	No comments	Where practicable ensure the safety and security of people and property.

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2
	<b>Transport &amp; access</b>		To provide a transport network which encourages the use of public transport, cycling and walking and minimises traffic congestion		<b>To maintain the transport network, encouraging the use of cycling, walking and minimising traffic.</b>	Needs to be reworded to include access to the countryside	<b>To maintain the transport network, encouraging the use of cycling, walking, minimising traffic and promoting access to the countryside.</b>
		A transport network which maximises access whilst minimising detrimental impacts	To provide good access for all local residents to key services and facilities.	Protect and enhance access to key community facilities and services, leisure and recreation opportunities and access to the countryside, by means which minimise environmental impacts on the park and its communities.	<b>Maintain access to local facilities and services whilst minimising environmental impacts.</b>	No comment	<b>Maintain access to local facilities and services whilst minimising environmental impacts.</b>
	<b>Local needs</b>		local needs can be met locally	Ensure that local needs are met locally wherever possible.	<b>Ensure local needs are met locally.</b>	No comment	<b>Ensure local needs are met locally.</b>
		Geographic adoption to the needs of rural and urban communities			<b>To retain geographic adaptation of the local communities.</b>	Remove as outside of the SEA scope	-
	<b>Innovation</b>	Creativity, innovation and the appropriate use of technology			<b>Creativity, innovation and the appropriate use of technology.</b>	No comment	<b>Creativity, innovation and the appropriate use of technology.</b>
<b>Human Health</b>	<b>Provision of health services</b>	Condition and services to engender good health	To promote good physical and mental health through the provision of access to adequate leisure facilities, recreational activities and health services in urban and rural locations.		<b>To promote good health through the provision of access to leisure facilities.</b>	Relate to access to footpaths and focus 'quality of life' as an indicator	<b>To promote good health through the provision of access to leisure facilities including access to the network of footpaths.</b>

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2
	<b>Protection and enhancement of human health</b>			Protect and enhance human health.	<b>Protect and enhance human health.</b>	Remove objective as is covered in other sections	-
	<b>Prevention of damage to human health</b>			Minimise pollution releases to levels that do not damage natural systems, human health and quality of life.	<b>Minimise pollution to levels which do not damage human health.</b>	Include stress in here due to potential stress of losing a home. Minimise negative impact to human health and safeguard positive impacts.	<b>Minimise negative impacts to human health (including pollution and stress) and safeguard positive impacts.</b>
<b>Flora &amp; Fauna (&amp; geology)</b>	<b>Ecological environment and protected species.</b>	Bio-diverse and attractive natural environment	To conserve and enhance all aspects of the ecological environment, in particular designated sites and protected species, and provide opportunities for local residents to access and understand these.	Avoid damage to designated sites and protected species. Maintain, and enhance where appropriate, conditions for biodiversity and avoid irreversible losses.	<b>To conserve and enhance the terrestrial environment, particularly designated sites and protected species.</b>	Need to include geology in this section and its objectives. Indicators need to be split between geological and biological. Conserve and seek to enhance.	<b>To conserve and seek to enhance the terrestrial biological and geological environment, particularly designated sites and protected species.</b>
			To conserve and enhance all aspects of coastal and marine environment, particularly designated sites and fisheries.		<b>To conserve and enhance the coastal and marine environment, particularly designated sites, protected species and fisheries.</b>	Need to include geology in this section and its objectives. Indicators need to be split between geological and biological. Conserve and seek to enhance. Remove fisheries as there are non in the study area.	<b>To conserve and seek to enhance the coastal and marine biological and geological environment, particularly designated sites and protected species.</b>

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2
	<b>Access to ecological environment.</b>		Provide opportunities for local residents to access and understand the ecological environment.		<b>To provide opportunities for local residents to access and understand the ecological environment.</b>	Need to include geology in this section and its objectives. Indicators need to be split between geological and biological. Maybe 'maintain and safeguard opportunities...'	<b>Maintain and safeguard opportunities for all to access and understand the ecological and geological environment.</b>
	<b>Minimising pollution</b>			Minimise pollution releases to levels that do not damage natural systems, human health and quality of life.	<b>Minimise pollution to levels which do not damage the natural environment.</b>	Need to include geology in this section and its objectives. Indicators need to be split between geological and biological.	<b>Minimise pollution to levels which do not damage the biological or geological environment.</b>
<b>Soil</b>	<b>Minimising pollution</b>	Minimal pollution levels if environmental impacts are a significant result of the activity consider an environmental impact assessment	To protect and enhance water, soil and air quality through reducing pollution	Minimise pollution releases to levels that do not damage natural systems, human health and quality of life.	<b>Minimise pollution to levels which do not damage soil.</b>	Pollution to air, soil, water and the natural environment are potential issues if the quarries have been used as landfill or are contaminated in any way so these three items should be kept in until this has been investigated. Septic tanks/private waste disposal systems are also potential sources of pollutants.	<b>Minimise pollution to levels which do not damage soil.</b>

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2
Water	<b>Minimising pollution</b>	Minimal pollution levels if environmental impacts are a significant result of the activity consider an environmental impact assessment	To protect and enhance water, soil and air quality through reducing pollution	Minimise pollution releases to levels that do not damage natural systems, human health and quality of life.	<b>Minimise pollution to levels which do not damage the water environment including surface water and ground water.</b>	Pollution to air, soil, water and the natural environment are potential issues if the quarries have been used as landfill or are contaminated in any way so these three items should be kept in until this has been investigated. Septic tanks/private waste disposal systems are also potential sources of pollutants.	<b>Minimise pollution to levels which do not damage the water environment including surface water and ground water.</b>
	<b>Minimising flood risk</b>		To minimise flood risk as a result of a new development	Reduce the risk of flooding, ensuring development and land use changes are not vulnerable to flooding, or increase the risk of flooding elsewhere in a catchment / coastal zone.	<b>To reduce the risk of flooding and ensure land use changes are not vulnerable to flooding.</b>	There are flash flooding issues at certain properties 'ensure any potential works do not increase the risk of flooding'	<b>To ensure any potential works do not increase the risk of flooding.</b>
	<b>Water use</b>		To ensure prudent and efficient use of natural resources.		<b>To ensure prudent and efficient use of water.</b>	Outside of the scope of the CSS	-

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2
Air	Minimising pollution	Minimal pollution levels if environmental impacts are a significant result of the activity consider an environmental impact assessment	To protect and enhance water, soil and air quality through reducing pollution	Minimise pollution releases to levels that do not damage natural systems, human health and quality of life.	Minimise pollution to levels which are acceptable for local air quality.	Pollution to air, soil, water and the natural environment are potential issues if the quarries have been used as landfill or are contaminated in any way so these three items should be kept in until this has been investigated. Septic tanks/private waste disposal systems are also potential sources of pollutants.	Minimise pollution to levels which are acceptable for local air quality.
Climatic Factors	Minimise greenhouse gas emissions	Minimise greenhouse gas emissions and a managed response to the effects of climate change.	To reduce greenhouse gas emissions to mitigate the rate of climate change and to ensure future development prepares for climate change		To reduce greenhouse gas emissions.	Items concerning minimal production of waste, energy efficiency and greenhouse gases are not really required	-
Material Assets	Energy efficiency	Prudent and efficient use of energy and natural resources	To ensure prudent and efficient use of natural resources.	Promote concepts of design that improve energy efficiency and apply sustainability principles to resource use.	Ensure prudent and efficient use of natural resources.	Items concerning minimal production of waste, energy efficiency and greenhouse gases are not really required	-
	Production of waste	minimal production for waste	minimal production of waste	Encourage waste reduction, reuse, recovery and recycling.	Minimal production of waste.	Items concerning minimal production of waste, energy efficiency and greenhouse gases are not really required	-

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2
	<b>Managing natural resources</b>			Manage natural resources in a way which sustains their environmental qualities as well as their productive (or economic) potential.	<b>Manage natural resources in a way which sustains their environmental qualities as well as their productive (or economic) potential.</b>	Include agriculture, soils, farmland, fisheries, quarries in the indicators for these objectives	<b>Manage natural resources in a way which sustain their environmental qualities as well as their productive (or economic) potential.</b>
<b>Cultural Heritage (including architectural and archaeological)</b>	<b>Access to heritage</b>	Culture, heritage, leisure and recreation activities to all	To provide opportunities for all residents to access and understand local cultural heritage		<b>To provide opportunities for all residents to access and understand local cultural heritage.</b>	Perhaps – ‘Maintain and safeguard opportunities for all to access and understand local heritage’.	<b>To maintain and safeguard opportunities for all to access and understand local heritage</b>
	<b>Preservation of Heritage</b>		To preserve and enhance all aspects of the historic environment	Preserve and enhance the archaeological and historic environment.	<b>To preserve and enhance all aspects of the historic environment.</b>	Some prioritisation required. ‘where practicable preserve (and enhance) all aspects of the historic environment’	<b>Where practicable preserve and enhance all aspects of the historic environment.</b>
<b>Landscape</b>	<b>Built environment</b>	A quality built environment and efficient land use patterns, that make good use of derelict sites, minimise travel and promote balanced development	To provide a good quality built environment including green spaces and green infrastructure corridors, and ensure high standards of sustainable design and construction, including energy and water conservation, waste recycling facilities and use of sustainable materials.	Promote concepts of design that improve energy efficiency and apply sustainability principles to resource use.	<b>Promote concepts of design that improve energy efficiency and apply sustainability principles.</b>	Not required as National Park has control of planning permissions.	-
	<b>Local distinctiveness</b>	Bio-diverse and attractive natural environment	To conserve and enhance all aspects of the landscape, in particular designated sites, and local distinctiveness	Maintain and enhance the special landscape, local distinctiveness and settlement character.	<b>Maintain and enhance the special landscape, local distinctiveness and settlement character.</b>	Maintain and (where possible seek to) enhance the landscape.	<b>Maintain and, where possible. Enhance the special landscape, local distinctiveness and settlement character.</b>

SEA Topic	SEA Issue	Yorkshire & Humber RSS	Scarborough Core Strategy	North Yorkshire Moors Core Strategy	SEA objectives Version 1	Comments from the SEA Workshop	SEA objectives version 2
Consultation	Local consultation	A partnership and participative approach			A partnership and participative approach to consultation.	Not required in the objectives list as is a statutory requirement.	-

## Appendix F – Quality Assurance Checklist

Information Required for Inclusion in the SEA	Location in SEA Scoping Report
<b>Objectives and Context</b>	
The plan's or programme's purpose and objective are made clear.	Section 1.1
Environmental issues and constraints, including international and EC environmental protection objectives, are considered in developing objectives and targets.	Section 3
SEA objectives, where used, are clearly set out and linked to indicators and targets where appropriate.	Table 5.2 in Section 5
Links with other related plans, programmes and policies are identified and explained.	Table 2.1 in Section 2
Conflicts that exist between SEA objectives, between SEA and plan objectives and between SEA objectives and other plan objectives are identified and displayed.	Figure 5.1 in Section 5
<b>Scoping</b>	
Consultation Bodies are consulted in appropriate ways at appropriate times on the content and scope of the Environmental Report.	Section 4
The assessment focuses on significant issues.	Section 5.1

Information Required for Inclusion in the SEA	Location in SEA Scoping Report
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	Section 3
Reasons are given for eliminating issues from further consideration.	Section 3
<b>Alternatives</b>	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	TBC
Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.	TBC
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	TBC
Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	TBC
Reasons are given for selection or elimination of alternatives.	TBC
<b>Baseline Information</b>	
Relevant aspects of the current state of the environment and their likely evolution without the plan or programme are described.	Section 3

Information Required for Inclusion in the SEA	Location in SEA Scoping Report
Environmental characteristics of areas likely to be significantly affected are described, including areas wider than the physical boundary of the plan area where it is likely to be affected by the plan.	Section 3
Difficulties such as deficiencies in information or methods are explained.	Section 3
Prediction and evaluation of likely significant environmental effects.	
Effects identified include the types listed in the Directive (biodiversity, population, human health, fauna, flora, soil, water, air, climate factors, material assets, cultural heritage and landscape), as relevant; other likely environmental effects are also covered as appropriate.	Section 3
Both positive and negative effects are considered, and the duration of effects (short medium or long term) is addressed.	TBC
Likely secondary, cumulative and synergistic effects are identified where practicable.	TBC
Inter-relationships between effects are considered where practicable.	TBC
The prediction and evaluation of effects makes use of relevant accepted standards, regulation and thresholds.	TBC
Methods used to evaluate the effects are described.	TBC
Mitigation measures	

Information Required for Inclusion in the SEA	Location in SEA Scoping Report
Measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the plan or programme are indicated.	TBC
Issues to be taken into account in project consents are identified.	TBC
The Environmental Report	
Is clear and concise in its layout and presentation.	TBC
Uses simple, clear language and avoids or explains technical terms.	TBC
Uses maps and other illustrations where appropriate.	TBC
Explains the methodology used.	TBC
Explains who was consulted and what methods of consultation were used.	TBC
Identifies sources of information, including expert judgement and matters of opinion.	TBC
Contains a non-technical summary covering the overall approach to the SEA, the objectives of the plan, the main options considered, and any changes to the plan resulting from the SEA.	TBC
Consultation	
The SEA is consulted on as an integral part of the plan making process.	Start of consultation in Section 4

Information Required for Inclusion in the SEA	Location in SEA Scoping Report
Consultation bodies and the public likely to be affected by, or having an interest in, the plan or programme are consulted in ways and at times which give them an early and effective opportunity within appropriate time frames to express their opinions on the draft plan and Environmental Report.	Start of consultation in Section 4
Decision-making and information on the decision	
The environmental report and the opinions of those consulted are taken into account in finalising and adopting the plan or programme.	TBC
An explanation is given of how they have been taken into account.	TBC
Reasons are given for choosing the plan or programme as adopted, in the light of other reasonable alternatives considered.	TBC
<b>Monitoring Measures</b>	
Measures proposed for monitoring are clear, practicable and linked to the indicators and objectives used in the SEA.	TBC
Monitoring is used, where appropriate, during the implementation of the plan or programme to make good deficiencies in baseline information in the SEA.	TBC
Monitoring enables unforeseen adverse effects to be identified at an early stage (these effects may include predictions which prove to be incorrect)	TBC
Proposals are made for action in response to significant adverse effects.	TBC

## References

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- <sup>xix</sup> Lane, N. Guthrie, G. (2007) River Tyne to Flamborough Head SMP2: Non Technical Summary for Scarborough Area.
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- <sup>xxi</sup> Scarborough BAP, Accessed on 22<sup>nd</sup> June 2009, found at:  
<http://www.ukbap.org.uk/lbap.aspx?ID=534#6>
- <sup>xxii</sup> Met Office accessed on the 28<sup>th</sup> June 2009 at: <http://www.metoffice.gov.uk/climate/uk/ee/>
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