Appendix M

Appropriate Assessment

Appendix M
Contents

M1 Introduction

M1.1 Appropriate Assessment

The need for an 'Appropriate Assessment' arises under the requirements of the EC Habitats Directive (92/43/EEC) and its implementation in the UK under the Conservation of Habitats and Species Regulations 2010. Under Regulation 21, Appropriate Assessment is required for a plan or project that, either alone or in combination with other plans or projects, is likely to have a significant effect on a European site and is not directly connected with or necessary for the management of the site. A European site is defined as being either a Special Area of Conservation (SAC) or a Special Protection Area (SPA). Government policy as outlined in the addendum to Planning Policy Statement 9 (PPS 9) (DCLG, 2005) is that wetlands of international importance designated under the Ramsar convention (Ramsar sites) should also be subject to the provisions of the Habitats regulations. Ramsar sites, SPAs and SACs are collectively referred to from now on as 'international sites'.

Appropriate Assessment is the process to support a decision by the 'competent authority', in this case the Environment Agency (EA), as to whether the proposed plan or project would have an adverse effect on the integrity of any international site. The phrase "the integrity of the site" is not defined in the Habitats Directive or the Habitats regulations. However, it is usually taken to mean the coherence of the site's ecological structure and function across its whole area that allows it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified. An adverse effect on integrity is likely to be one that prevents the site from maintaining the same contribution to favourable conservation status of the qualifying feature(s) for which it was designated.

Where it is not possible to determine that a plan or project under consideration will not have an adverse effect on the integrity of a European or Ramsar site, alternative solutions that avoid harming site integrity must be sought. If alternatives are not possible, the plan or project can only proceed on the basis of imperative reasons of over-riding public interest (IROPI). If IROPI is agreed by the Secretary of State, compensatory measures must be secured to offset damage done by the plan or project in advance of loss, so that the overall coherence of the SAC/SPA network is maintained.

The conservation status and integrity of the site is defined through the site's conservation objectives. It is against these objectives that the effects of the plan or project must be assessed. Conservation objectives set out the physical, chemical and biological thresholds and limits of human activities and disturbance that should be met to achieve the integrity of the site. Conservation objectives serve both as criteria against which site condition can be assessed and reported against and also as a basis for assessing plans or projects that may affect the site. Conservation objectives for European Marine Sites are set out in the relevant Regulation 35 documents (so-called as their production is a requirement of Regulation 35 of the

Habitats regulations) for each site. English European Marine Sites are the responsibility of Natural England.

M1.2 Shoreline Management Plans (SMPs)

M1.2.1 SMP aims and objectives

A Shoreline Management Plan (SMP) is a large-scale assessment of the risks associated with coastal processes and aims to reduce the risks to the social, economic, natural and historic environment. A SMP aims to manage risk by using a range of methods that reflect both national and local priorities, to (Defra, 2006):

- reduce the threat of flooding and erosion to people and their property
- benefit the environment, society and the economy as far as possible, in line with the Government's 'sustainable development principles'.

The first generation of SMPs were produced for the coastline of England and Wales in the late 1990s. They were based on sediment cell boundaries that related to the movement of sand and shingle along the coast. The boundaries of these cells were originally set at locations where the net 'along shore' movement of sand and shingle changed direction. In some instances, the area covered by a SMP differed from these sediment cell boundaries for other reasons, such as the area covered by a coastal authority. However, for the SMP reviews (the current programme of SMPs around the coast is a review of the first generation of reports produced in the 1990s, reflecting the availability of new coastal processes information, new considerations (site designations, etc.) and less uncertainty about climate change) a behavioural systems approach was recommended, leading to slightly different boundaries compared to the first generation (Defra, 2006).

The objectives of a SMP must be in line with the Government's strategy for managing risks from flooding and coastal erosion and should (Defra, 2006):

- set out the risks from flooding and erosion to people and the developed, historic and natural environment within the SMP area
- identify opportunities to maintain and improve the environment by managing the risks from flooding and coastal erosion
- identify the preferred policies for managing risks from flooding and erosion over the next century
- identify the consequences of putting the preferred policies into practice
- set out procedures for monitoring how effective these policies are
- inform others so that future land use, planning and development of the shoreline takes account of the risks and the preferred policies
- discourage inappropriate development in areas where the flood and erosion risks are high
- meet international and national nature conservation legislation and aim to achieve the biodiversity objectives.

The most appropriate option for shoreline management will depend on the section of coastline in question and on technical, environmental, social and economic circumstances. The four options considered for shoreline management in the second generation SMPs are presented in **table 1.1**.

Table 1.1 Options used in SMP development

SMP option	Description of option
Hold the line (HtL)	Hold the existing defence line by maintaining or changing the standard of protection. This policy will cover those situations where work or operations are carried out in front of the existing defences (such as beach recharge, rebuilding the toe of a structure, building offshore breakwaters and so on. You should include in this policy other policies that involve operations to the back of existing defences (such as building secondary floodwalls) where they form an essential part of maintaining the current coastal defence system.
Advance the line (AtL)	Advance the existing defence line by building new defences on the seaward side of the original defences. Using this policy should be limited to those policy units where significant land reclamation is considered.
Managed realignment (MR)	Allowing the shoreline to move backwards or forwards, with management to control or limit movement (such as reducing erosion or building new defences on the landward side of the original defences).
No active intervention (NAI)	No investment in coastal defences or operations.

When developing a SMP, an epoch (time periods) based approach is used for planning purposes. The three epochs are 2009 to 2025, 2026 to 2055 and 2056 to 2105.

M1.2.2 Implications of SMP policies on the natural environment

Each of the SMP policies presented in **table 1.1** has the potential to affect the natural environment in one or more ways. **Table 1.2** presents the potential implications of each option.

Table 1.2 Potential generic implications of each SMP option

SMP option	Positive impacts	Negative impacts
Hold the line (HtL)	• Protects habitats inland of defences. • Provides stability to areas of coastline within a wider management context.	• Coastal squeeze (loss of habitat). • Interrupts coastal processes.
Advance the line (AtL)	• Protects habitats inland of defences.	• Reduces area of coastal habitat. • Changes how habitat functions. • Increases coastal squeeze. • Interrupts coastal processes. • Affects marine habitats. • May increase rate of coastal erosion either side of the advanced line.
Managed realignment (MR)	• Coastal habitats allowed to move towards land under rising sea levels. • Creates habitat for juvenile fish and other aquatic organisms (benefits to environment and fishing communities). • Promotes natural coastal processes. • Contributes towards more natural management of the coast. • Creates high tide roosts and feeding areas.	• Reduces area of habitat inland of defences. • Changes nature of habitat inland of defence.
No active intervention (NAI)	• Coastal habitats allowed to move towards land under rising sea levels. • Promotes natural coastal processes. • Contributes towards more natural management of the coast.	• Increased risk of flooding to inland habitats under rising sea levels.

M1.3 Guidance for the Appropriate Assessment of SMPs

The Office of the Department for Communities and Local Government (DCLG) has produced draft guidance on how to determine the need for an Appropriate Assessment for a given plan and for providing an assessment if one is needed. Also, Natural England has provided an internal draft document relating to the provision of Appropriate Assessments for Regional Spatial Strategies and sub-Regional strategies. More specific guidance (currently draft) on assessing Shoreline Management Plans in terms of the Habitats Regulations is available from the Environment Agency. These three documents: "Planning for the Protection of European Sites: Appropriate Assessment" (DCLG, 2006), "The Assessment of Regional Spatial Strategies under the Provisions of the Habitats Regulations – Draft Guidance" (English Nature, 2006) and "Appropriate Assessment of Flood Risk Management Plans Under the Habitats Regulations" (Environment Agency, 2007) currently provide the most cohesive source of guidance relating to providing Appropriate Assessments for Shoreline Management Plans. Although these documents relate specifically to land use plans, given that SMPs have the potential to influence the development of land, this guidance has been applied to SMP policies in this report. In this respect, there are clear parallels between Regional Spatial Strategies (RSS) and SMPs and the relevant elements of guidance relating to RSS have therefore been adapted here to use in the SMP.

In 2006, Royal Haskoning provided Defra with a guidance note relating to Appropriate Assessment provision for SMPs after completing an Appropriate Assessment for the River Tyne to Flamborough Head SMP2. This guidance was a fundamental consideration in establishing the scope of this particular Appropriate Assessment. These documents have therefore been used as a guide in establishing the scope of the Appropriate Assessment for the North Norfolk SMP2. However, the Environment Agency work instruction "Appropriate Assessment of Flood Risk Management Plans under the Habitats Regulations" provides specific advice on undertaking appropriate assessments of SMPs, so the approach and method adopted here comply with this guidance.

The assessment will also be structured with regard to the existing suite of guidance that is relevant to providing an Appropriate Assessment and producing a SMP. Key source documents are therefore:

- Managing Natura 2000 sites – the provisions of Article 6 of the Habitats Directive (EC, 2000)
- Environment Agency work instructions and guidance on SMPs, Catchment Flood Management Plans (CFMPs) and Appropriate Assessment
- Natural England's Habitats Regulations guidance note series
- Assessing Projects under the Habitats Directive – A Guide for Competent Authorities (Tyldesley & Hoskin, 2008).

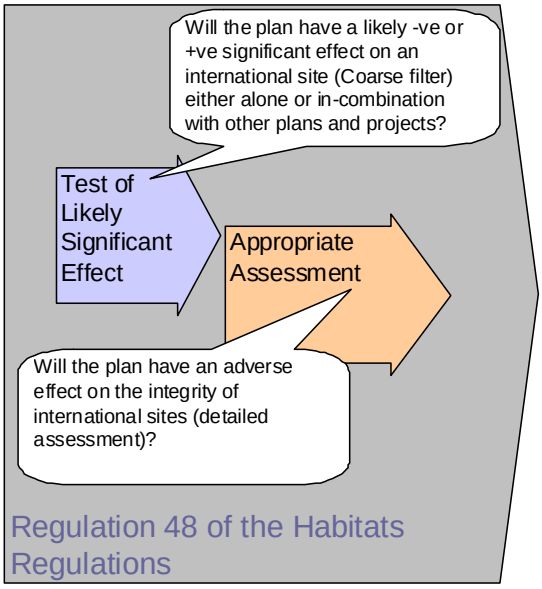
Appropriate Assessment is simply a way of establishing the actual scale and implications of effects and to decide whether a course of action is acceptable or unacceptable in terms of its effects on the integrity of international sites.

M1.4 Identifying the competent authority for the SMP

One of the first steps in addressing SMPs under the Habitats regulations is to identify the competent authority. In this SMP, Royal Haskoning is undertaking the technical analysis that forms the basis of the Appropriate Assessment. However, the ultimate responsibility for signing it off and ensuring complying with the Habitats regulations falls to the competent authority.

For the purposes of this assessment, the competent authority is the Environment Agency.

M1.5 Requirement for an Appropriate Assessment for SMP2



Due to the integrated nature of the SMP process, developing the North Norfolk SMP2 in accordance with the Habitats regulations at a policy level has allowed selection of policies based on likely significant effects on international sites. However, it should also be remembered that the requirement to take account of the effects on designated habitats is only one of the drivers that shapes the policies in the SMP. Other factors include the effects on agriculture, tourism and the local economy. The potential therefore exists for a preferred policy to emerge that could have an adverse effect on the integrity of an international site. The Habitats regulations require any plan or project that (either alone or in combination) is considered **likely to have a significant effect** on an international site to provide an appropriate assessment of the implications for international sites. This means that if the plan, either alone or in combination with other plans and projects, is considered likely to have a significant effect (either positive or negative), an Appropriate Assessment will be needed.

M1.5.1 Determination of whether the North Norfolk SMP would have a likely significant effect on the international sites on the north Norfolk coast.

Determining likely significant effect requires a coarse-filter approach to be taken to establish the likely effects of the SMP in relation to the sensitivity of the features on international sites and their conservation objectives (collectively, the integrity of the site). This can be addressed by a series of structured questions:

Q. Does the Norfolk coast or its coastal hinterland contain any sites designated under the Ramsar convention or Habitats or Birds directives (international sites)?

A. The north Norfolk coast contains a wide variety of coastal, freshwater and estuarine sites (as outlined in **section 3** of this report).

Q. What are the sensitivities of the international sites?

A. The sites are sensitive to changes in their morphology because of coastal processes and sea level fluctuations. For example:

There are many **freshwater** sites along the north Norfolk coast behind existing natural or man-made defences. Changes in the shape of the coast may lead to flooding of these sites and the loss of features due to increased saltiness or wave action.

Coastal sites, such as shingle habitat (ground-nesting areas for little tern and designated habitat for drift-line and perennial vegetation), depend on coastal processes. Many of these sites have been 'managed' in the past to maintain their structure. Changes to coastal processes through continued defence or removing a defence has the potential to change the function and form of such habitat.

Q. Does the SMP have the potential to affect (either positively or negatively) the integrity of international sites?

A. The SMP has four policy options that could lead to changes in the movement of sediment along the coast, changes in the form and function of intertidal habitat, levels of flooding and management regimes. Collectively, the SMP has the potential to alter the structure and function of the north Norfolk coast, with previously freshwater sites becoming saline through policies of managed realignment or stopping management. Also, the SMP may alter the structure of features that are critically linked to sediment supply, such as shingle ridges. It is important to remember that the question here relates to both positive and negative effects and to the plan as a whole and not as individual policies.

Q. Is the SMP likely to have a significant effect on the international sites on the north Norfolk coast?

A. Given that there are features in the international sites of north Norfolk that may be affected by matters that the SMP addresses, it cannot be ruled out that there will be a likely significant effect. This effect may be positive or negative as SMP policy responds to Habitats regulations or other drivers. **It therefore follows that an Appropriate Assessment is needed for the North Norfolk SMP.**

M2 Method

M2.1 Development of assessment areas

The assessment is being provided at an assessment unit level, in the same way as that used in the Strategic Environmental Assessment (SEA). These units have been derived from the three "super-frontages" defined in the baseline scenarios report (section F3 of appendix F). A super-frontage is defined as an area of coastline that is physically discrete from other super-frontages (that is, any geomorphological process occurring within that frontage does not affect, or occur across, other super-frontages). Each super-frontage may consist of an unspecified number of policy development zones (PDZs).

This assessment is provided on the final SMP following the consultation period for the draft plan during 2009.

The three super-frontages in the North Norfolk SMP area have been defined as (from west to east along the north Norfolk coast and presented in **figure 2.1**):

- Super-frontage 1 – start of dunes at Old Hunstanton to western limit of Brancaster bay
- Super-frontage 2 – western limit of Brancaster bay to western limit of Blakeney Spit
- Super-frontage 3 – western limit of Blakeney Spit to Kelling Hard.

The development of policies in this SMP has responded to a consideration of the environmental, social and economic features on the coast and of the coastal processes and systems that shape the coast. Each super-frontage has been defined to offer the most appropriate spatial breakdown of the coast, where processes can be managed (as appropriate) at a scale that is driven by wider management objectives. The super-frontage is the level at which the SMP 'makes sense' of the intent of management. The constituent PDZs are the means to deliver the management intent of SMP policies in each super-frontage.

On further consideration however, a decision was reached to break down each super-frontage again based on the intent of management. In super-frontages 2 and 3, this was either to allow natural coastal processes to continue or to hold the line (HtL) in some areas, while providing managed realignment (MR) in others to provide wider benefits. The assessment has therefore been provided at the following scales:

- Super-frontage 1
- Super-frontage 2a (for areas where the coast is being allowed to evolve naturally or the line is being held)
- Super-frontage 2b (for areas where MR is being pursued)
- Super-frontage 3a (for areas where the coast is being allowed to evolve naturally or the line is being held)

- Super-frontage 3b (for areas where MR is being pursued).

This breakdown allows the assessment to consider policy as an intent of management for areas of coast intended to address the objectives of the SMP.

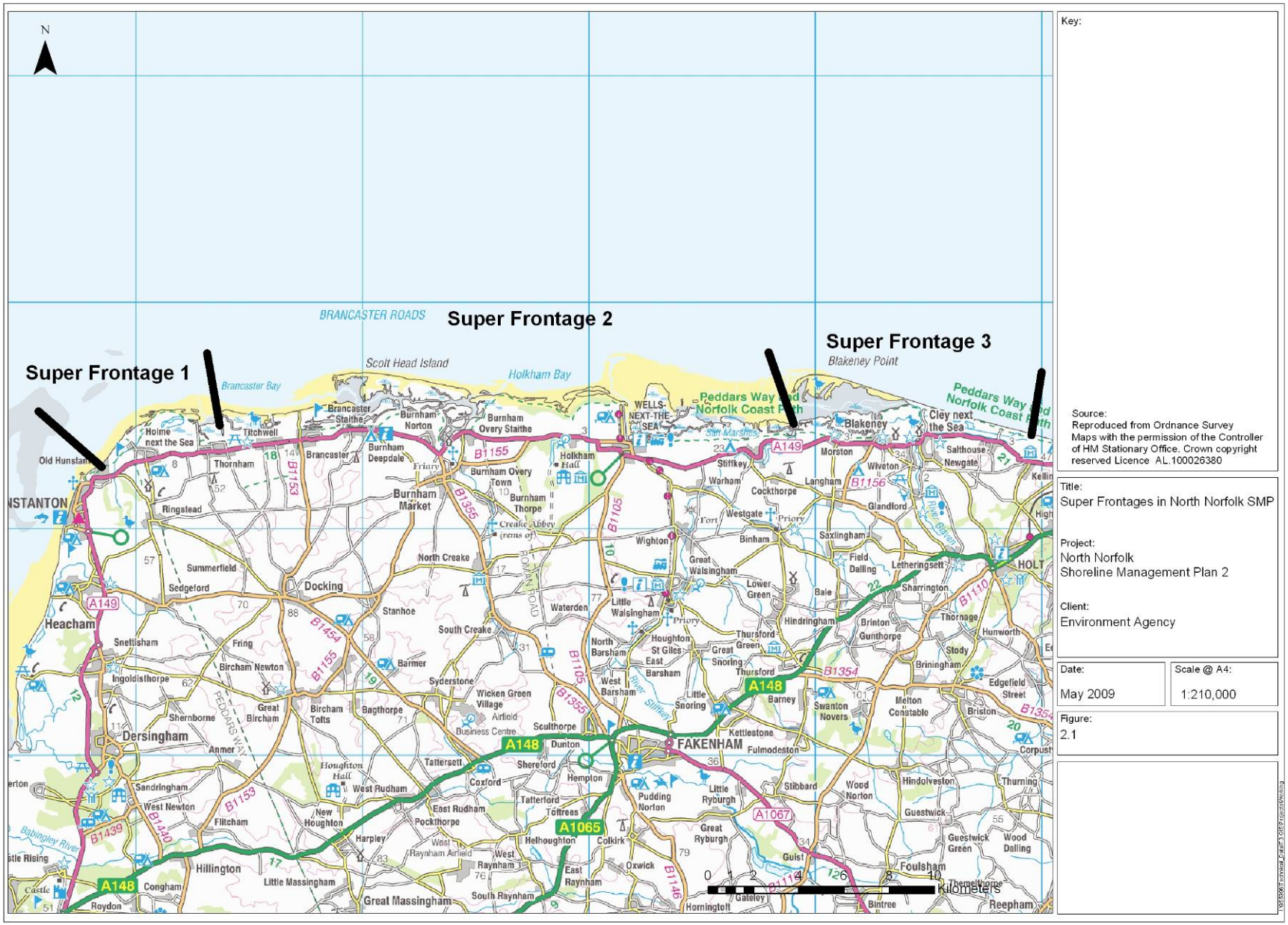
Within each assessment unit, policy has been considered at a policy development zone (PDZ) level to provide a real understanding of the functionality of each intent of management of the constituent internationally designated habitats and species. The effects of SMP policies within each PDZ have then been used to build an overview of how SMP policies affect those habitats and species over each assessment unit.

M2.2 Assessment method

As has been stated previously, the method for this exercise has been developed in accordance with the guidance from Defra, DCLG and Natural England. Also, Appropriate Assessment methods devised for large-scale developments have been evaluated to ensure that the approach provided is based on actual practical implementation of the Habitats regulations. Equally, the method has been devised to make sure that the approach taken meets the requirements of the Habitats regulations and is specific to the particulars of a SMP, with the intent of offering a level of assessment appropriate for policies of this type.

The need to ensure that the assessment is appropriate for evaluating policy has also been recognised. It should be clearly understood that the actual development needed to implement coastal defence options, which may occur as policy is implemented, would itself be likely to need an Appropriate Assessment. It is therefore not the intent of the policy level assessment here to provide a level of detail that would duplicate a site-specific proposal-based Appropriate Assessment.

The process has been broken down into a series of clearly-defined steps that will provide a transparent and accountable assessment of the SMP polices. These steps are outlined below and, where necessary, references are provided to the specific guidance or the contents of Circular 06/2005 Biodiversity and Geological Conservation. A summary of the suggested method is illustrated in **figure 2.2.** This shows how the overall assessment will progress and how key tasks relate to one another.


N
BRANCASTER ROADS
Super Frontage 1
Super Frontage 2
Super Frontage 3
Blakeney Point
Scolt Head Island
Brancaster Bay
Holkham Bay
Peddars Way and Norfolk Coast Path
Key:
Source:
Reproduced from Ordnance Survey Maps with the permission of the Controller of HM Stationary Office. Crown copyright reserved Licence AL.100026380
Title:
Super Frontages in North Norfolk SMP
Project:
North Norfolk
Shoreline Management Plan 2
Client:
Environment Agency
Date:
May 2009
Scale @ A4:
1:210,000
Figure:
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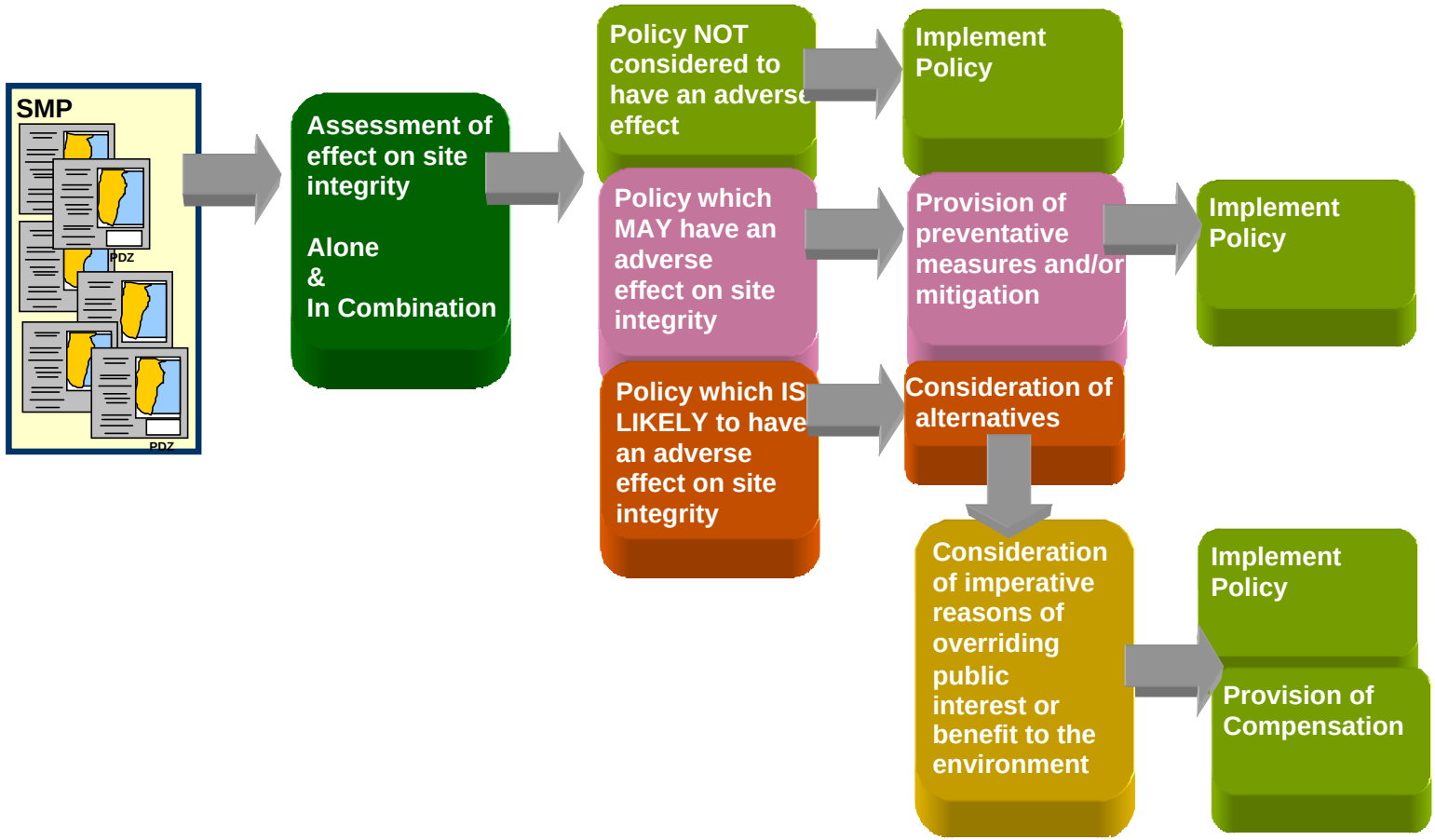
Kilometers
0 1 2 4 6 8 10

Figure 2.2 Appropriate Assessment method



M2.3 Assessment of the SMP policies

The assessment of the SMP policies has been supported by a tabulated account based on an adaptation of the favourable condition tables for the Sites of Special Scientific Interest (SSSI) that underpin the European sites. These tables are presented as **the annex to this appendix.** The annex shows the key features of each site, the attributes relevant to such features, the identified management targets for the site and known sensitivities or management issues. Each policy in the assessment has then been evaluated and tabulated against each feature with regard to the potential effects of the policy, preventative measures that could be taken, mitigation and a commentary on the effects of the policy on the site features and targets. On the basis of this exercise, an assessment has been provided about the overall effects of each policy on the overall integrity of the European site. This exercise has been recorded at the management area level, so that the policies for each zone have been assessed with regard to the possible effects on the European features within that zone. Management areas have been devised to provide discreet, spatial areas for applying policy. However, if a policy could affect a neighbouring management area, this has been included in the assessment. The favourable condition tables have been refined so they relate only to the features relevant to the European sites and not to features that are not covered by the Habitats or Birds directives (79/409/EEC).

Although Ramsar features and sites do not have favourable condition tables, the conservation objectives set out in the Regulation 35 package have been produced broadly to protect the underlying habitat and environmental conditions required by annex 1 and 2 habitats and species. Given the close correlation between Ramsar and European features, the conservation objectives within the Regulation 35 package are generally adequate to protect Ramsar features. However, where Ramsar features need considering over and above those of European features, the high-level generic conservation objectives for international sites have been applied to Ramsar sites and their features, subject to natural change to maintain the Ramsar features and their supporting habitats in favourable condition.

The tables to record and summarise the appropriate assessment have been underpinned by an ecological assessment, survey or analysis that supports the assessment process. For management areas, a commentary and determination has been provided that will clearly express the likely effects of the policies on each international site (over three epochs) and illustrate the measures that could be taken to avoid any adverse effects identified. The level of assessment has been provided at an ‘appropriate’ level for a policy-based assessment and in recognition of the fact that further assessment would be provided when the actual scheme is considered. This acknowledges the need to provide a level of assessment that is ‘appropriate’. It refers to the European Court of Justice ruling where the Advocate General’s opinion was that the assessment for policy should be as rigorous an assessment as can reasonably be undertaken. We have provided the

assessment to consider policy and not to second-guess the content and detail of schemes and strategies.

M2.4 Assessment of effects over different SMP epochs

The complications of applying the Habitats regulations at the policy level are further increased by the different time-scales (or epochs) over which they apply (20 years, 50 years and 100 years). The possibility exists that SMPs or their policies will result in short-term adverse effects, but that in the longer-term the SMP will allow site integrity to be maintained. On the basis of the assessment provided here however, no issues have been identified relating to adverse effects over time for longer term benefit.

M2.5 Provision of an 'in-combination' assessment

The 'in-combination' assessment will build on the assessment of policies and the summary tables provided in the 'alone assessment' stage. It will then consider the effects of SMP policies in combination with all other SMP policies, the other plans identified as being relevant to this assessment or approved projects yet to be implemented. The specific focus of this stage will be about considering those plans and projects that are likely to have the same effect as the SMP policies. In the context of the SMP, this is likely to relate to other plans or projects that may have effects on coastal habitats or processes that support habitats or species. The plans and projects considered relevant to this study are discussed in **section 5** of this document. An assessment has been provided for each SMP management area. This accounts for the 'in combination' effects of other plans or projects (from the list provided in **section 5**) that have similar effects to that of the specific policy within the management unit. An accompanying reasoning has been provided to support this.

The 'in-combination' assessment has been summarised with regard to the overall conclusions that can be drawn to provide a clear summary for each SMP management unit. The effects of the policies in the unit alone, and 'in combination' with other plans and projects, are therefore clearly expressed.

M2.6 Consideration of preventative measures and mitigation

The assessment provided will offer a simple breakdown of policies (at the management area level) as follows:

- Management areas that are not considered to have an adverse effect on international sites.
- Management areas that are considered to have an adverse effect on the integrity of sites.

This classification has been provided for effects that are due either to the policies in the management area only or in combination with other policies, plans or projects.

For some policy areas where an adverse effect cannot be ruled out, a series of preventative measures have been provided that will ensure that actual effects are avoided at the implementation stage. Effectively, these measures provide supplementary aspects of SMP policy that will focus the implementation of policies to make sure that the integrity of international sites is protected as the SMP is implemented.

M2.7 Draft SMP policies

The draft policies for the North Norfolk SMP2 are presented in **tables 2.1** – **2.5**.

Table 2.1 Assessment unit SF1

Policy unit	Name	Policy plan						
		National SMP policy			Local management policy			
		2025	2055	2105	2025	2055	2105	Comment
PDZ 1A	Old Hunstanton dunes	HtL	MR	MR	Continue to hold the dunes where they are now and maintain their flood defence function.	If confirmed, the dunes will be allowed to develop naturally. If their flood defence function is reduced, work will be undertaken to restore it.	If confirmed, the dunes will be allowed to develop naturally. If their flood defence function is reduced, work will be undertaken to restore it.	The change of policy from epoch 2 needs confirmation based on better knowledge to be gained during epoch 1. If confirmed, some form of intervention is likely to be needed in later epochs to maintain the flood defence function of the dunes.
PDZ 1B	Holme dunes	MR	MR	MR	Allow the dunes to develop naturally. If their flood defence function reduces, work will be undertaken to maintain it	Allow the dunes to develop naturally. If their flood defence function reduces, work will be undertaken to maintain it	Allow the dunes to develop naturally. If their flood defence function reduces, work will be undertaken to maintain it	The flood defence function will be maintained through the minimum amount of intervention allowing the dune system to develop as naturally as possible.

Policy unit	Name	Policy plan						
		National SMP policy			Local management policy			
		2025	2055	2105	2025	2055	2105	Comment
PDZ 1C	Thornham sea bank	HtL	HtL	HtL or MR	Maintain defences where they are now. Carry out monitoring and assessments to investigate potential realignment in the future	Maintain defences where they are now. Carry out monitoring and assessments to investigate potential realignment in the future	Maintain defences where they are now, unless increased knowledge leads to preference for moving them further inland	The policy for epoch 3 is conditional. It depends on the results of monitoring and research during epochs 1 and 2 into the effects of realignment. In both scenarios there will be defences to sustain the communities of Thornham, Holme-next-the-Sea and Old Hunstanton.
PDZ 1D	Thornham	NAI	NAI	NAI	Stop maintaining existing sea bank but sustain footpath	Continue to allow natural development but sustain footpath	Continue to allow natural development but sustain footpath. Possible need for local adaptation or defence if any properties become at risk	The effects on the footpath need to be managed. In epoch 3, adaptation or local defence may be needed for a small number of properties.

Table 2.2 Assessment unit SF2a

Policy unit	Name	Policy plan						
		National SMP policy			Local management policy			
		2025	2055	2105	2025	2055	2105	Comment
PDZ 2A	Thornham to Titchwell	NAI	NAI	NAI	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	No change from curre policy of allowing the c to develop naturally.
PDZ 2B	Titchwell RSPB reserve	HtL	HtL	HtL	Allow private owner to maintain the defences at their new realigned position.	Allow private owner to maintain the defences at their new realigned position.	Allow private owner to maintain the defences at their new realigned position.	The SMP allows the landowner to hold the l after completing the current realignment scheme.
PDZ 2C	Titchwell village	NAI	NAI	NAI	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	No change from curre policy of allowing the c to develop naturally.
PDZ 2E	Royal West Norfolk golf club	HtL	HtL	HtL	Allow private owner to maintain the defences where they are now. The currently undefended dunes remain undefended.	Allow private owner to maintain the defences where they are now. The currently undefended dunes remain undefended.	Allow private owner to maintain the defences where they are now. The currently undefended dunes remain undefended.	The SMP allows the private landowner to maintain the defences where they are now.
PDZ 2F	Brancaster and Brancaster Staithe	HtL	HtL	HtL	Allow private owners to maintain the defences where they are now.	Allow private owners to maintain the defences where they are now.	Allow private owners to maintain the defences where they are now.	The SMP allows the private landowners to maintain the defences where they are now.

PDZ 2Gii	River Burn outfall	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the tidal flood defence function of the River Burn outfall in all epochs.
PDZ 2H	Burnham Overy Staithe	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now to sustain Burnham Overy Staithe
PDZ 2J	Wells flood embankment	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain all defences where they are now to sustain current land us
PDZ 2K	Wells quay	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain all defences where they are now to sustain current land us
PDZ 2L	Wells east bank	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now to sustain the community Wells-next-the-Sea and current land use in Warham Marshes
PDZ 2M	Stiffkey bay	NAI	NAI	NAI	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	No change from curren policy of allowing the c to develop naturally.

Table 2.3 Assessment unit SF2b

Policy unit	Name	Policy plan						
		National SMP policy			Local management policy			
		2025	2055	2105	2025	2055	2105	Comment
PDZ 2D	Brancaster west marsh	HtL	MR or HtL	MR or HtL	Maintain defences where they are now, allowing time for monitoring and assessments to investigate realignment in the future.	If confirmed, partly remove existing defences. If not confirmed, maintain defences where they are now.	Depends on what happens in epoch 2. Maintain defences where they are now or in realigned position.	The policy for epoch 2 conditional. It depends the results of monitorin and research in to the effects of realignment, during epoch 1.
PDZ 2Gi	Deepdale and Norton marshes	HtL	HtL	HtL or MR	Maintain defences where they are now. Carry out monitoring and assessments to investigate potential realignment in the future.	Maintain defences where they are now. Carry out monitoring and assessments to investigate potential realignment in the future.	Maintain defences where they are now, unless increased knowledge leads to preference to move them further inland.	Epoch 3 policy is conditional. It depends the results of monitorin and research during ep 1 and 2 into the effects realignment., In both scenarios there will be defences to sustain the communities of Burnha Deepdale and Burnhar Norton

Policy unit	Name	Policy plan						
		National SMP policy			Local management policy			
		2025	2055	2105	2025	2055	2105	Comment
PDZ 2Giii	Overy marshes	HtL	HtL	MR or HtL	Maintain defences where they are now. Carry out monitoring and study to investigate potential realignment in the future.	Maintain defences where they are now, carrying out monitoring and study to investigate potential realignment in the future	Maintain defences where they are now, unless increased knowledge leads to preference for realignment further inland	The policy for epoch 3 conditional. It depends the results of monitorin and research during epochs 1 and 2 into the effects of realignment during epoch 2. In both scenarios there will be defences to sustain the communities of Burnha Overy; Staithe, Holkha and Wells-next-the-Sea
PDZ 2I	Holkham dunes	MR	MR	MR	Allow the dunes to develop naturally. If their flood defence function reduces, work will be undertaken to maintain it.	Allow the dunes to develop naturally. If their flood defence function reduces, work will be undertaken to maintain it.	Allow the dunes to develop naturally. If their flood defence function reduces, work will be undertaken to maintain it.	Limited intervention ma be needed to maintain flood defence function dunes. The existing gro field and revetment protecting significant so economic assets will be maintained..

Table 2.4 Assessment units SF3a

Policy unit	Name	Policy plan						
		National SMP policy			Local management policy			
		2025	2055	2105	2025	2055	2105	Comment
PDZ3Ai	River Stiffkey outfall	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now to sustain the communitie the River Stiffkey valley
PDZ 3Aii	Morston (west and east)	HtL	HtL	HtL	Maintain the east and west banks where they are now.	Maintain the east and west banks where they are now.	Maintain the east and west banks where they are now.	Maintain the defences where they are now to sustain the community Morston and current la use in the reclaimed ar
PDZ3Aiv	River Glaven outfall	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now to sustain the communitie the River Glaven valley
PDZ3B	Stiffkey to Morston	NAI	NAI	NAI	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	Continue to allow the frontage to develop naturally.	No change from curren policy of allowing the c to develop naturally.
PDZ3C	Blakeney	HtL	HtL	HtL	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now.	Maintain the defences where they are now to protect current use of quayside and other features in Blakeney.

PDZ3D	Cley to Salthouse	MR	MR	MR	Allow the shingle ridge to develop naturally.	Allow the shingle ridge to develop naturally.	Allow the shingle ridge to develop naturally.	Monitoring and managi the natural developmer the shingle ridge, if needed, to manage immediate risk to life, residential and comme buildings or the A149.

Table 2.5 Assessment units SF3b

Policy unit	Name	Policy plan						
		National SMP policy			Local management policy			
		2025	2055	2105	2025	2055	2105	Comment
PDZ 3aii	Blakeney Freshes marshes	HtL	MR	HtL	Maintain defences where they are now. Carry out the work needed to implement to investigate realignment in the medium term	Build new defences to protect properties and infrastructure. Then partly remove existing defences.	Hold the new line of defence	Sustain flood defence t houses and infrastructu Increase tidal exchang Blakeney harbour char by moving the sea ban Blakeney Freshes furth inland.
PDZ 3av	Cley marshes	HtL	HtL	MR or HtL	Maintain defences where they are now.	Maintain defences where they are now.	If confirmed, build new defences to protect properties and infrastructure. Then partly remove existing defences to increase tidal exchange. If not confirmed, continue to maintain defences where they are now.	The policy for epoch 3 conditional. It depends the results of monitorin and research into the effects of realignment

M3 Sites and features for consideration in the Appropriate Assessment

M3.1 Sites within or adjacent to SMP2 management units

The north Norfolk coast contains some of the largest areas of undeveloped coastline in the UK. It is characterised by low marshes and reedbeds interspersed with sand and shingle beaches, large areas of enclosed tidal land, heathland, forest and farmland. Each of these habitats supports a range of species of high conservation value including birds, plants and invertebrates. The high conservation value is reflected in the fact that most of the coastline is subject to statutory nature conservation and landscape designations that have important implications for any prospective developments, management or policies relating to the north Norfolk coast. Given the anticipated scope of SMP effects, the assessment has been provided for sites within the 1 in 100 year tidal flood zone.

Despite the dispersed nature of the designated sites throughout the SMP area, there is potential for policies associated with one area to have a knock-on effect on other designated sites. Shoreline management policies may also affect international sites further inland through cumulative effects. These sites will therefore be fully considered in the Appropriate Assessment.

Sites concentrated around the north Norfolk coast and those likely to be affected by SMP policies are:

Sites designated under the Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds):

The North Norfolk Coast SPA
The Wash SPA

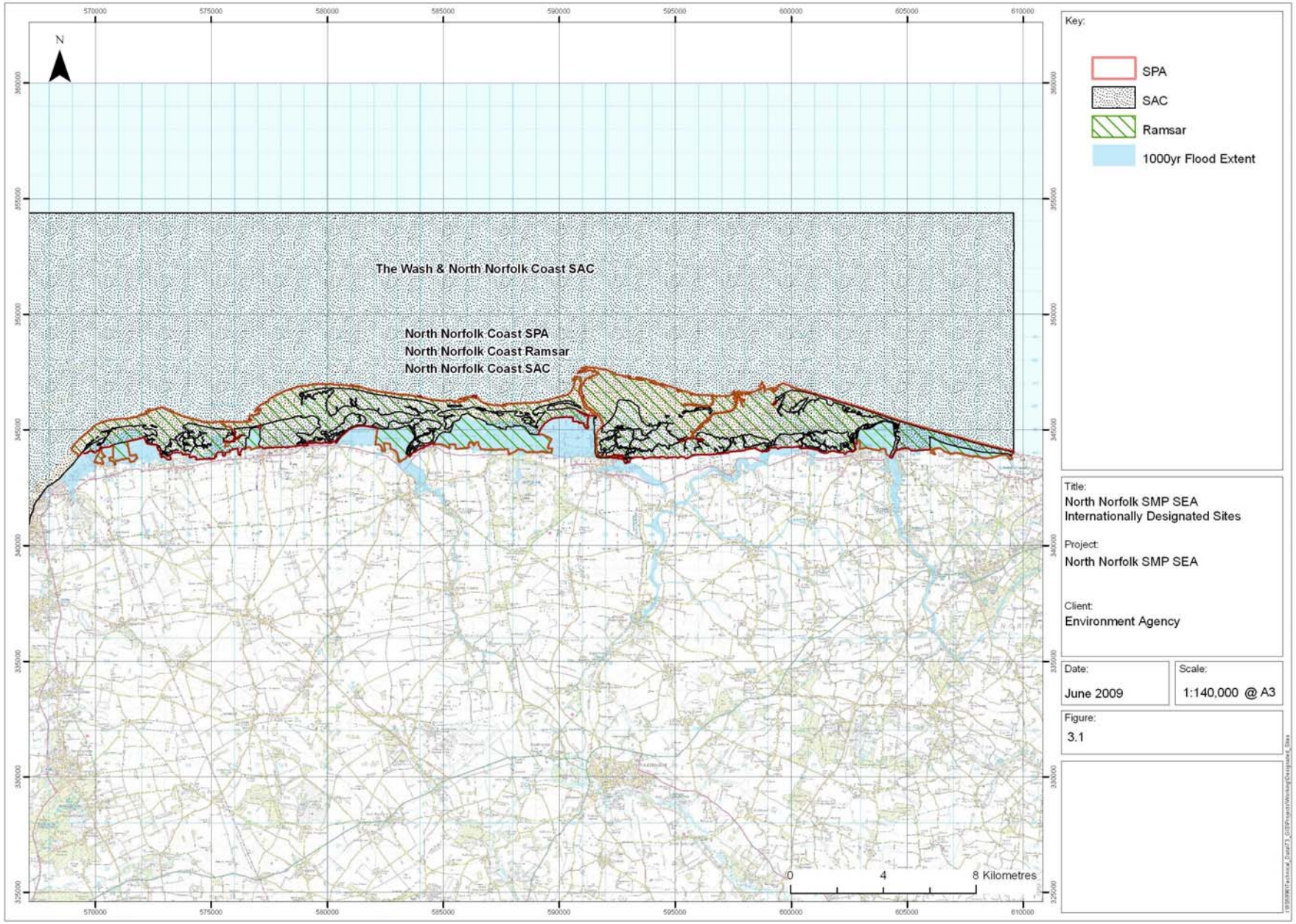
Sites designated under the Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora):

North Norfolk Coast SAC
The Wash and North Norfolk Coast SAC

Sites designated under the Ramsar convention (The Convention on Wetlands of International Importance especially as Waterfowl Habitat):

North Norfolk Coast Ramsar site
The Wash Ramsar site

These sites are shown in **figure 3.1**.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The Wash & North Norfolk Coast SAC
North Norfolk Coast SPA
North Norfolk Coast Ramsar
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1000yr Flood Extent
Title:
North Norfolk SMP SEA
Internationally Designated Sites
Project:
North Norfolk SMP SEA
Client:
Environment Agency
Date:
June 2009
Scale:
1:140,000 @ A3
Figure:
3.1

Table 3.1 Special Protection Areas (SPA) within or adjacent to SMP2 management units

SPA name	Site features
North Norfolk Coast SPA	**Article 4.1 qualification (79/409/EEC)** **During the breeding season the area regularly supports:** o Bittern, *Botaurus stellaris*, Europe – breeding (at least five per cent of the GB breeding population) o Marsh harrier, *Circus aeruginosus* (6.4 per cent of the GB breeding population) o Avocet, *Recurvirostra avosetta*, western Europe/ western Mediterranean – breeding (30 per cent of the GB breeding population) o Little tern, *Sterna albifrons*, eastern Atlantic – breeding (at least 13.8 per cent of the GB breeding population) o Common tern, *Sterna hirundo*, northern/eastern Europe – breeding (at least 3.7 per cent of the GB breeding population) o Sandwich tern, *Sterna sandvicensis*, western Europe/western Africa (26.4 per cent of the GB breeding population) **Over winter the area regularly supports** o Avocet, *Recurvirostra avosetta*, western Europe/ western Mediterranean – breeding (9.9 per cent of the GB population) **Article 4.2 Qualification (79/409/EEC)** o Wigeon, *Anas penelope*, western Siberia/north western/north eastern Europe (1.1 per cent of the population) o Pink-footed goose, *Anser brachyrhynchus*, eastern Greenland/ Iceland/UK (10.6 per cent of the population) o Dark-bellied Brent goose, *Branta bernicla bernicla*, western Siberia/western Europe (3.8 per cent of the population) o Knot, *Calidris canutus*, north eastern Canada/ Greenland/Iceland (3.1 per cent of the population) **Article 4.2 qualification (79/409/EEC): An internationally important assemblage of birds.** Over winter the area regularly supports 91,536 waterfowl (five-year peak mean 1/4/1998)
The Wash SPA	**Article 4.1 qualification (79/409/EEC)** o Little tern, *Sterna albifrons*, eastern Atlantic – breeding (1.4 per cent of the GB breeding population) o Common tern, *Sterna hirundo*, northern/eastern Europe – breeding (1.2 per cent of the GB population) o Bewick's swan, *Cygnus columbianus,* western Siberia/north eastern and north western Europe (0.9 per cent of the GB population)

SPA name	Site features
	o Bar-tailed godwit, *Limosa lapponica* western Palearctic – wintering (21.4 per cent of the GB population) **Article 4.2 qualification (79/409/EEC)** **Over-winter, the area regularly supports** o Pintail, *Anas acuta*, north western Europe (1.5 per cent of the population) o Wigeon, *Anas penelope*, western Siberia/north western/north eastern Europe (1.2 per cent of the population in Great Britain) o Gadwall, *Anas strepera*, north western Europe (0.9 per cent of the population in Great Britain) o Pink-footed goose, *Anser brachyrhynchus*, eastern Greenland/Iceland/ UK (14.8 per cent of the population) o Turnstone, *Arenaria interpres*, western Palearctic – wintering (1.1 per cent of the population) o Dark-bellied Brent goose, *Branta bernicla bernicla*, western Siberia/western Europe (7.4 per cent of the population) o Goldeneye, *Bucephala clangula*, north western/ central Europe (0.7 per cent of the population in Great Britain) o Sanderling, *Calidris alba*, eastern Atlantic/western and South Africa (0.3 per cent of the population) o Black-tailed godwit, *Limosa limosa islandica*, Icelandic – breeding (11.6 per cent of the population in Great Britain) o Common scoter, *Melanitta nigra*, western Siberia/ western and northern Europe/north western Africa (0.2 per cent of the population in Great Britain) o Curlew, *Numenius arquata*, Europe – breeding (1.1 per cent of the population) o Grey plover, *Pluvialis squatarola*, eastern Atlantic – wintering (5.8 per cent of the population) o Common shelduck, *Tadorna tadorna*, north western Europe (5.3 per cent of the population) o Common redshank, *Tringa totanus*, eastern Atlantic – wintering (1.7 per cent of the population) **Article 4.2 qualification (79/409/EEC): An internationally important assemblage of birds.** o 400,367 waterfowl (five-year peak mean 01/04/1998)

Table 3.2 Special Areas of Conservation (SAC) within or adjacent to SMP2 management units

SAC name	Site features
North Norfolk Coast SAC	**Annex I habitats (as a primary reason for selection):** Coastal lagoons *priority feature This site encompasses a number of small percolation **lagoons** on the east coast of England. Together with Orfordness - Shingle Street and Benacre to Easton Bavents, it forms a significant part of the percolation lagoon resource concentrated in this part of the UK. The most notable of the lagoons at this site are Blakeney Spit Pools, a lagoon system of six small pools between a shingle ridge and saltmarsh. The bottom of each pool is shingle overlain by soft mud. The fauna of the lagoons includes a nationally rare species, the lagoonal mysid shrimp *Paramysis nouveli*. **Annex I habitats (as a primary reason for selection):** Perennial vegetation of stony banks **Perennial vegetation of stony banks** occurs at Blakeney Point, a shingle spit on the east coast of England with a series of recurves partly covered by sand dunes. This extensive site has a typical sequence of shingle vegetation, which includes open communities of pioneer species on the exposed ridge and more continuous grassland communities on the more sheltered shingle recurves. It also includes some of the best examples of transitions between shingle and saltmarsh, with characteristic but rare species more typical of the Mediterranean. These include one of the best examples of the transition from sand and shingle to vegetation dominated by shrubby sea-blite *Suaeda vera* (**1,420 Mediterranean and thermo-Atlantic halophilous scrubs**). Blakeney Point is part of a multiple-interest site. The shingle structure forms a highly significant component of the geomorphological structure of the north Norfolk coast and helps to maintain a series of interrelated habitats. **Annex I habitats (as a primary reason for selection):** Mediterranean and thermo-Atlantic halophilous scrubs The north Norfolk coast, together with the Wash and North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise **Mediterranean and thermo-Atlantic halophilous scrubs** occur together. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes and extensive examples

SAC name	Site features
	occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea purslane community. **Annex I habitats (as a primary reason for selection):** Embryonic shifting dunes North Norfolk coast in East Anglia is one of two sites representing **embryonic shifting dunes** in the east of England (the other being Winterton – Horsey dunes). It is a long, thin dune system, displaying both progradation and erosion. The exceptional length and variety of the dune/beach interface is reflected in the high total area of embryonic dune (over 40 hectares or at least 14 per cent of the national total). The process of continued progradation is central to the conservation of this habitat type at this site. Sand couch *Elytrigia juncea* is the most prominent sand-binding grass. **Annex I habitats (as a primary reason for selection):** shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) Shifting dunes form a major component of the complex of often linear dune systems that make up the north Norfolk coast, which is representative of **shifting dunes along the shoreline with *Ammophila arenaria*** in East Anglia. The site supports over 100 hectares of shifting dune vegetation, eight per cent of the estimated total area of this habitat type in Britain. The shifting dune vegetation is also varied, containing examples of all the main variants found in the southern part of the geographical range. **Annex I habitats (as a primary reason for selection):** fixed dunes with herbaceous vegetation (grey dunes) North Norfolk coast on the east coast of England contains a large, active series of dunes on shingle barrier islands and spits and is little affected by development. The **fixed dunes with herbaceous vegetation** represents one of the principal variants of this vegetation type in the UK, as many of the swards are rich in lichens and drought-avoiding winter annuals such as common whitlowgrass *Erophila verna*, early forget-me-not *Myosotis ramosissima* and common corn salad *Valerianella locusta*. The main communities represented are marram *Ammophila arenaria* with red fescue *Festuca rubra* and sand sedge *Carex arenaria*, with lichens such as *Cornicularia aculeata*.

SAC name	Site features
	Annex I habitats (as a primary reason for selection): Humid dune slacks The slacks within this site are comparatively small and the Yorkshire-fog *Holcus lanatus* community predominates. The site represents **humid dune slacks** on the dry east coast of England and presents an extreme of the geographical range and ecological variation of the habitat within the UK. They are calcareous and complement the acidic dune slacks at Winterton – Horsey dunes, also in eastern England. The dune slack communities occur in association with swamp communities. **Annex II species (present as a qualifying feature, but not a primary reason for selection of this site):** Otter *Lutra lutra*, petalwort *Petalophyllum ralfsii*
The Wash and North Norfolk Coast SAC	**Annex I habitats (as a primary reason for selection):** Large shallow inlets and bays The Wash is the largest embayment in the UK and represents **large shallow inlets and bays** on the east coast of England. It is connected by sediment transfer systems to the north Norfolk coast. Together, the Wash and North Norfolk Coast form one of the most important marine areas in the UK and European North Sea coast and include extensive areas of varying, but mainly sandy, sediments subject to a range of conditions. Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Sub-littoral communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittle-star beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and common seal. **Annex I habitats (as a primary reason for selection):** Sandbanks that are slightly covered by sea water all the time. On this site sandy sediments occupy most of the sub-tidal area, resulting in one of the largest expanses of sub-littoral **sandbanks** in the UK. It provides a representative example of this habitat type on the more sheltered east coast of England. The sub-tidal sandbanks vary in composition and include coarse sand through to mixed sediment at the mouth of the embayment. Sub-littoral communities present include large dense beds of brittle-stars *Ophiothrix fragilis*. Species include the sand-mason worm *Lanice conchilega* and the tellin *Angulus tenuis*. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. The sub-tidal sandbanks provide important nursery grounds

SAC name	Site features
	for young commercial fish species, including plaice *Pleuronectes platessa*, cod *Gadus morhua* and sole *Solea solea*. **Annex I habitats (as a primary reason for selection):** Mudflats and sandflats not covered by sea water at low tide. The Wash, on the east coast of England, is the second-largest area of intertidal flats in the UK. The sandflats in the embayment of the Wash include extensive fine sands and drying banks of coarse sand and this diversity of substrates, coupled with variety in degree of exposure, means that there is a high diversity relative to other east coast sites. Sandy intertidal flats predominate, with some soft mudflats in the areas sheltered by barrier beaches and islands along the north Norfolk coast. The biota include large numbers of polychaetes, bivalves and crustaceans. Salinity ranges from that of the open coast in most of the area (supporting rich invertebrate communities) to estuarine close to the rivers. Smaller, sheltered and diverse areas of intertidal sediment, with a rich variety of communities, including some eelgrass *Zostera* spp. beds and large shallow pools, are protected by the north Norfolk barrier islands and sand spits. **Annex I habitats (as a primary reason for selection):** Samphire (glasswort) *Salicornia* species and other annuals colonising mud and sand. The largest single area of this vegetation in the UK occurs at this site on the east coast of England, which is one of the few areas in the UK where saltmarshes are generally accreting. The proportion of the total saltmarsh vegetation represented **by *Salicornia* and other annuals colonising mud and sand** is high because of the extensive enclosure of marsh in this site. The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, saltmeadow and halophytic scrub communities. **Annex I habitats (as a primary reason for selection):** Atlantic salt meadows. This site on the east coast of England is selected both for the extensive ungrazed saltmarshes of the north Norfolk coast and for the contrasting, traditionally-grazed saltmarshes around the Wash. The Wash saltmarshes represent the largest single area of the habitat type in the UK. The Atlantic salt meadows form part of a sequence of vegetation types that are unparalleled among coastal sites in the UK for their diversity and are among the most important

SAC name	Site features
	in Europe. Saltmarsh swards dominated by sea-lavenders *Limonium* species are particularly well-represented on this site. As well as typical lower and middle saltmarsh communities, in north Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats. **Annex I habitats (as a primary reason for selection):** Mediterranean and thermo-Atlantic halophilous scrubs. The Wash and North Norfolk Coast, together with the North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea purslane community. **Annex I habitats (as a primary reason for selection):** Biogenic reefs. The Wash is the largest embayment in the UK with extensive areas of subtidal mixed sediment. In the tide-swept approaches to the Wash, with a high loading of suspended sand, the relatively common tube-dwelling polychaete worm *Sabellaria spinulosa* forms areas of biogenic reef. These structures are varied in nature and include reefs that stand up to 30 centimetres above the seabed and extend for hundreds of metres. The reefs are thought to extend into the Wash where super-abundant *S. spinulosa* occurs and where reef-like structures such as concretions and crusts have been recorded. The site and its surrounding waters are considered particularly important as it is the only currently-known location of well-developed stable *Sabellaria* reef in the UK. The reefs are particularly important components of the sub-littoral as they are diverse and productive habitats that support many associated species (including epibenthos and crevice fauna) that would not otherwise be found in mainly sedimentary areas. This means the fauna is quite distinct from other biotopes found in the site. Associated motile species include large numbers of polychaetes, mysid shrimps, the pink shrimp *Pandalus montagui*, and crabs. *S. spinulosa* is considered to be an

SAC name	Site features
	important food source for the commercially important pink shrimp *P. montagui*. **Annex I habitats (present as a qualifying feature, but not a primary reason for selection of this site):** Coastal lagoons. **Annex II species (as a primary reason for selection):** Common seal *Phoca vitulina.* The Wash, on the east coast of England, is the largest embayment in the UK. The extensive intertidal flats here and on the north Norfolk coast provide ideal conditions for common seal *Phoca vitulina* breeding and hauling-out. This site is the largest colony of common seals in the UK, with some seven per cent of the total UK population. **Annex II species (present as a qualifying feature, but not a primary reason for selection of this site):** Otter *Lutra lutra*

Table 3.3 Ramsar sites within or adjacent to SMP2 management units

Ramsar site name	Site features
North Norfolk Coast Ramsar site	**Ramsar criterion 1** – The site is one of the largest expanses of undeveloped coastal habitat of its type in Europe. It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reedbeds. **Ramsar criterion 2** – Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates. **Ramsar criterion 5** – Species with peak counts in winter: 98,462 waterfowl (five-year peak mean 1998/99 to 2002/2003). **Ramsar criterion 6** – Species/populations occurring at levels of international importance. Species regularly supported during the breeding season: o Sandwich tern o common tern o little tern Species with peak counts in spring/autumn: o red knot Species with peak counts in winter: o pink-footed goose o dark-bellied Brent goose o wigeon o pintail
The Wash Ramsar site	**Ramsar criterion 1** – The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels. **Ramsar criterion 3** – Qualifies because of the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary source of organic material which, together with other organic matter, forms the basis of the high productivity of the estuary.

Ramsar site name	Site features
	Ramsar criterion 6 – Species/populations occurring at levels of international importance (as identified at designation): Species with peak counts in spring/autumn: o oystercatcher o grey plover o red knot o sanderling o curlew o redshank o turnstone Species with peak counts in winter: o common redshank o pink-footed goose o dark-bellied Brent goose o shelduck o pintail o dunlin o bar-tailed godwit

M3.2 Conservation objectives

Conservation objectives are Natural England's statutory advice to operators and competent authorities. They are intended to provide the basis against which to evaluate the effects of activities on the integrity of international sites. Conservation objectives therefore serve as the basis for evaluating plans and projects under the Habitats Regulations. Conservation objectives for the international sites along the north Norfolk coast provide a detailed and comprehensive account of the conditions that comprise favourable conservation status/site integrity and the acceptable limits of impacts compatible with site integrity.

A detailed account of conservation objectives is provided in the assessment tables in **the annex to this appendix**. For qualifying **species**, the conservation objectives can be generalised as follows:

- to avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, so ensuring that the integrity of the site is maintained and

- to ensure for the qualifying species that the following are maintained in the long term:

    - populations of the species as a viable component of the site
    - distribution of the species within site
    - distribution and area of habitats supporting the species

- structure, function and supporting processes of habitats supporting the species, and
- no significant disturbance of the species.

For qualifying **habitats** the conservation objectives can be generalised as follows**:**

- to ensure for the qualifying habitats that the following are maintained in the long term:

    - area of habitat on the site
    - distribution of habitat within site
    - structure and function of habitat
    - processes supporting the habitat
    - distribution of typical species of the habitat
    - viability of typical species as components of the habitat
    - no significant disturbance of typical species of habitat.

An account of conservation objectives for each site is provided in the assessment tables in **appendix I**.

M4 Current condition assessment

Most of the SPA, SAC and Ramsar sites are 'underpinned' by Sites of Special Scientific Interest (SSSI) designation. On such SPA/SAC sites, condition monitoring is undertaken by Natural England at the SSSI level according to JNCC common standards.

The relevance of SSSI condition status to those of SPA and Ramsar features depends on the correspondence of SSSI features with SPA/Ramsar features. SSSI features are based on BAP broad habitat classifications. These are comprehensive categories and can be considered to encompass all qualifying features.

This is the case on the north Norfolk coast where there is a close correspondence between SSSI features and Ramsar and SPA features. This means that condition assessments, and more importantly reasons for unfavourable status, can be considered reliable indicators of the conservation status and effects on site integrity with respect to Ramsar and SPA features.

SSSIs are typically divided into a series of units for the purposes of management and monitoring. Analysis of condition data for SSSI units along the north Norfolk coast indicates that a few units are currently unfavourable due to inappropriate coastal management issues in the Wash and North Norfolk Coast SSSIs. The most common cause for unfavourable condition throughout all the identified SSSIs is erosion with other possible factors including overgrazing, lack of appropriate management and drainage issues.

Natural England's Site information System (ENSIS) contains information on the "remedies" required to allow SSSIs to meet favourable condition by 2010. This will identify any units where the Environment Agency, through its flood risk management role, is responsible for delivering favourable condition. This would, however, be expected to correspond closely to SSSI condition assessment data.

M5 Other plans and projects

A range of future or ongoing plans or projects must be considered in combination with SMP policies. The following plans have therefore been identified as being of a type and scope that need to be considered in the in-combination assessment of the SMP. The plans or projects identified are therefore those which in this case relate to the development of land in the coastal zone or strategies that may affect the physical or biological conditions critical to meeting conservation objectives for the international sites.

It should be repeated that in-combination effects relating to SMP policies are only those where an effect of SMP policy, when combined with the effect of another plan or project, will have an adverse effect on the integrity of a site. It is not the intent of the assessment to use SMP policy to alleviate the effects of plans where the selected policy has no effect, but an alternative policy could help to address adverse effects of other plans. This is an important distinction to remember within the assessment. Although it is the intent to provide SMP policies that give positive benefits, the Appropriate Assessment is devised to address only possible adverse effect, not opportunities for remediation.

M5.1 Land use plans

Land use plans are produced by local authorities and set out the broad framework for planning and development in the local authority area. The area potentially affected by the North Norfolk SMP2 policies is covered by two local authorities, each of which has a land use plan. The two local authorities are:

- Borough Council of King's Lynn and West Norfolk
- North Norfolk District Council.

The main issue for land use plans in the context of shoreline management plans and their compatibility with the Habitats Regulations is where land is allocated for housing, employment or other uses, development of which may prejudice SMP policies. For example, housing allocations in areas currently protected from flooding by flood defence structures or practices would make it more difficult to undertake managed realignment or abandon existing defences. Managed realignment or no active intervention options may be preferred or necessary in response to coastal squeeze, which may be adversely affecting international sites.

Planning Policy Statement (PPS) 25 sets out government policy on development in relation to flood risk. Broadly speaking, this seeks to avoid development in flood-prone areas or undertaking development that will increase flood risk. PPS 25 requires local authorities to undertake Strategic Flood Risk Assessments to assist in developing local plans so they achieve these objectives.

Following PPS 25 guidance will make sure that the likelihood of development occurring that will prejudice SMP policies is minimised. It does not, however, completely preclude these possibilities. The housing development provided in these plans does not specify locations that would need additional defences. It follows, therefore, that the actual in-combination effects would be confined to:

- effects of increased visitation (through population growth) on sites sensitive to disturbance (typically SPA sites with ground-nesting species or those species that may be disturbed at high tide roosts or while feeding in intertidal areas)
- effects on seal and/or otter communities from disturbance through increased population
- effects on the water quality of north Norfolk through increased population
- effects on water resources in north Norfolk through increased demand on supply as population increases

It is considered that the effects of the SMP, which on the North Norfolk coast are shifts in coastal habitat type and the potential loss of habitat, have no clear synergistic effect with the possible effects of development plans. For example, while there may be a link between effects on SPA species due to changes in habitat and the effects of dog walkers in coastal areas leading to disturbance, it is considered that such in-combination effects are unknown and abstract in their nature. Additional studies into each particular effect would be needed and this would fall outside of the scope of what would be appropriate for this level of assessment.

In summary therefore, it is considered that there are no in-combination effects of the SMP and development plans and that there are mechanisms in place to consider the effects of each particular plan.

M5.2 Fisheries and aquaculture

Traditionally, north Norfolk was home to a thriving fishing industry. However, the size and associated catch has steadily declined over recent years. There is still a viable and relatively stable shellfish industry in Greater Wash waters, which are incorporated into the study area. Shellfish such as crabs, lobsters, mussels and shrimp (among others) can be found off the coast of Norfolk.

The Eastern Sea Fisheries Joint Committee (ESFJC) is responsible for consenting and regulating fisheries activities around the north Norfolk coast. **However, based on an assessment of the effect of this industry, it is considered that no in-combination effects exist.** These industries relate to the extraction of species from the system, while the effects of the SMP are largely confined to coastal areas.

M5.3 Activities regulated and consented by the Environment Agency

The Environment Agency regulates and consents a range of activities that have the potential to affect site integrity. Relevant consents include those under the Environmental Permitting (Environmental Permitting (England and Wales) Regulations 2007, SI 2007 No. 3538) regime for prescribed industrial activities and waste management permitting Discharge consents and groundwater authorisations (and radioactive substances regulation) are also being brought under EP in the 'second phase' of the system from April 2010 (Environmental Permitting (England and Wales) Regulations 2010, SI 2010 No. 675). Most new applications received by the Environment Agency for these permits are reviewed under Regulation 21 of the Habitats Regulations.

To ensure that such activities are compatible with the requirements of the Habitats Regulations, specifically to ensure that these can be determined as having no adverse effect on integrity, the Environment Agency has reviewed all consents during the Regulation 63 Review of Consents (RoC) project.

No in-combination effects were established through the course of this assessment between the RoC process and the North Norfolk SMP.

M6 The 'alone' assessment of SMP policies

The assessment is based on a consideration of the designated international features within or around the area, the sensitivity of the features, the effects of policies and the need for preventative measures. This transparent approach to the assessment makes sure that the actual level of assessment remains appropriate. Also, that the assessment is critically focussed on the effects of policies on the integrity of the sites (and not on wider ecological considerations unrelated to designated features).

The level of assessment is intended to provide a level of detail that is relevant to the nature of SMP policies. SMP policies are relatively abstract (relating to a simple statement of intent for areas) and the actual level of impact and effects will be largely determined by the particulars of subsequent strategies and schemes. It is at those stages that more detailed levels of assessment are possible and needed. At the SMP stage, the assessment should consider the anticipated effects of a policy action, not the specific details of measures to implement the policy.

The assessment has been provided in detailed assessment sheets in the **annex to this appendix.** The first stage of the assessment provided an initial appraisal of SMP policies in each assessment unit, with a view to establishing those where shoreline policy would not have a significant effect on international sites. The assessment of effects on international sites follows the 'reverse burden of proof' paradigm - if any doubt exists as to the effect of a policy, then "no adverse effect on integrity" (NAEOI) cannot be concluded. So only those sites where NAEOI can definitely be proved, or where the basis of established expert opinion discounts any adverse effect, can be assessed as "passing" the appropriate assessment test.

M6.1 Assessment units considered to have no adverse effect on the integrity of international sites

The nature of the north Norfolk coast means that SMP policies in all PDZs have the potential to affect international sites, as the entire length of the coastline is designated SAC, SPA and Ramsar. An appraisal was therefore undertaken of all assessment units within the North Norfolk SMP area. All assessment units were deemed as having the potential to have an adverse effect on the integrity of international sites, although mitigation measures delivered as part of the North Norfolk SMP have ensured that the following assessment units can be concluded as not having an adverse effect on the integrity of international sites:

Assessment units deemed to have <u>no adverse effect on integrity</u> (NAEOI):

SF1 and SF3a

The determination of no adverse effect for these units depends on wider actions that provide the degree of confidence that effects will be avoided or will not occur. With regard to the specific units, these actions are as follows:

SF1 – The uncertainty (regarding potential adverse effects) here relates to the degree to which policies will allow the natural development of the dune systems at Holme dunes and Old Hunstanton dunes. The policies are supported by a management intent (included in the SMP action plan) to monitor the dune systems and ensure that management (through subsequent SMPs) responds to the need to allow the dunes to develop naturally. It is considered that this approach of monitoring and response provides enough certainty to conclude no adverse effect on the integrity of these features.

SF3a – The potential adverse effect in this unit relates to the loss of intertidal habitat (saltmarsh and mudflat) due to HtL policies across all epochs. The super-frontage in this area (SF3) has been divided for the assessment into two assessment units: SF3a (HtL and NAI policy units) and SF3b (policies with an element of MR). The anticipated levels (and locations) of intertidal habitat in response to squeeze through sea level rise are not fully understood in this part of coast. Nevertheless, it is considered that the managed realignment for Blakeney (PDZ3aiii in the following assessment unit of SF3b) would provide sufficient intertidal habitat (within the boundary of the North Norfolk Coast SPA and Ramsar site and the Wash and North Norfolk Coast SAC) to offset the loss and the adverse effect on the sites within this assessment unit.

For further information about the assessment of these assessment units, please refer to **appendix I**.

M6.2 Assessment units where no adverse effect on the integrity of international sites cannot be concluded

Of the assessment units appraised in this Appropriate Assessment, it has been deemed not possible to conclude NAEOI of international sites in three assessment units, even when mitigation or compensatory measures are implemented:

Assessment units where no adverse effect on the integrity of international sites cannot be concluded (AEOI):

SF2a, SF2b and SF3b

The specific issues relating to the nature of the adverse effects that cannot be discounted are provided below.

M6.3 Key issues in the assessment

In providing the Appropriate Assessment of the North Norfolk SMP, it has been necessary to identify the key issues that are central to the effects of shoreline management on the features of international sites. This consideration has helped to clarify the assessment process and avoid repetition in the subsequent assessment. The issues have been derived from: an assessment of the reporting of Natural England in the area (at SSSI and international site level), the conservation objectives for the international sites and a determination of the anticipated effects of SMP policies.

The key issues within the plan area relating to SMP policies have therefore been considered in the following section.

M6.3.1 Loss of coastal freshwater and terrestrial habitat

The north Norfolk coast contains a wide range of freshwater and terrestrial habitat lying inland of existing defences that supports cited SPA species. Over the lifetime of this SMP, several realignments have been proposed that will provide intertidal habitat through the inundation of terrestrial or freshwater habitats. Such managed realignments will clearly reduce the extent of this freshwater and terrestrial habitat, leading to an associated and detrimental effect on a minority of these SPA species. **These realignments are included in assessment units SF2b and SF3b.**

The North Norfolk SMP2 has put forward management measures that would be likely to compromise or lead to the loss of freshwater and terrestrial habitats protected by defences, as often local topography has dictated that migration of this habitat further inland is not possible. This issue is further complicated by the conservation objectives of many sites which suggest that management is 'subject to natural change'. Within the context of this assessment this is considered to be where the coast is resorting to a more natural state.

From a habitat perspective (under the Habitats Directive) this loss of terrestrial or freshwater habitat is not a feature of designated SACs and is not considered to represent an adverse effect on the integrity of such sites. The issue relating to the loss of this habitat is, however, critically important for several SPA bird species (see below).

M6.3.2 The maintenance of habitat for bird species

The north Norfolk coast is designated SPA for a wide range of bird species, many of which have different habitat requirements. Of all the cited species, only bittern truly depend on freshwater habitats as, although they will nest in brackish areas of reedbed (Royal Haskoning, 2009), their main sources of prey are all limited to freshwater (eels and roach). Other species that partly depend on freshwater or terrestrial habitats include (with habitat requirements in brackets):

- marsh harrier (freshwater or brackish reedbeds as breeding habitat)

- pink-footed goose (grazing marsh as roosting habitat)
- dark-bellied Brent goose (grazing marsh as roosting habitat).

However, most of the cited SPA and Ramsar bird species depend largely on coastal habitats for feeding, roosting and breeding. The requirements of these species have therefore played a key role in developing policies for the North Norfolk SMP2. It remains however, that where managed realignment will lead to the loss of reedbed or grazing marsh, an adverse effect on the species mentioned above cannot be ruled out. **Accordingly, assessment units SF2b and SF3b have concluded an adverse effect for this reason.**

In super-frontage 2 of the SMP (assessment units SF2a and 2b of this assessment), it is not considered that the habitat provided through managed realignment will be sufficient to determine (with certainty) that an adverse effect will be avoided on species that depend on intertidal habitat in that area. **Assessment unit SF2a therefore concludes adverse effect on the integrity of the North Norfolk Coast SPA and Ramsar site due to the loss of intertidal habitat and its effect on cited species that use such areas.**

M6.3.3 Loss of intertidal habitat through coastal squeeze

The north Norfolk coast is characterised by extensive areas of saltmarsh and mudflat – the habitat types typically affected by coastal squeeze. The baseline scenarios report produced as part of the North Norfolk SMP2 states that the back-barrier areas of the north Norfolk coast (especially behind Scolt Head Island and Blakeney Spit) are generally thought to be growing (horizontally and vertically). Squeeze will therefore also be occurring in a seaward direction on mudflats, a key feeding habitat for most SPA and Ramsar-cited bird species. Realignment can therefore be a useful tool in maintaining the balance of habitats along the north Norfolk coast and providing the correct functional habitat requirements for a range of key bird species.

Overall, the realignments proposed by the North Norfolk SMP will help to prevent adverse effects on the integrity of SAC sites by coastal squeeze and this, coupled with socio-economic reasons (such as the defence of coastal settlements), has been a key driver in developing SMP policies. Additionally, most of the SPA and Ramsar-cited species depend on the intertidal areas and shingle areas for feeding, roosting and breeding so management to ensure that such features are not lost is critical in developing SMP policies that comply with the spirit of the Habitats Regulations. It clearly follows that most of the species that depend on the intertidal areas will not be negatively affected by realignment and will benefit from the long-term provision of key functional habitat. Of all the cited species, potentially only bittern, marsh harrier, pink-footed goose and dark-bellied Brent goose depend on terrestrial areas. These species are therefore likely to be affected by realignments that result in the loss of freshwater and terrestrial habitats.

Further to this, only 11.9 per cent of the North Norfolk SAC and none of the Wash and North Norfolk Coast SAC (the European Marine Site) is designated as freshwater or terrestrial habitat. This means that, should these realignments not take place, the resulting coastal squeeze and associated loss of intertidal and coastal habitats would prove more harmful to the overall integrity and temporal continuity of these sites.

Within super-frontage 2 however (assessment units in this assessment of SF2a and SF2b), it cannot be established that the managed realignments would provide enough habitat for a conclusion of no adverse effect to be reached on the Wash and North Norfolk SAC in this area. **Accordingly, a determination of adverse effect due to loss of intertidal habitat through coastal squeeze has been determined for assessment unit SF2a.**

M6.3.4 Habitat creation as a mitigation measure

A detailed assessment is provided in the **annex to this appendix**. In the SMP, several locations have been identified as potential managed realignment areas. This could provide mitigation for adverse effects elsewhere in the plan area. The actual specification of such mitigation (managed realignments) will need to be agreed by the competent authorities to make sure that such measures are sufficient in terms of their location, extent and function. This means that the potential exists for mitigation to be specified in the plan. However, at this stage of the SMP, this has not been agreed by the competent authority.

M6.4 Conclusion

The consideration of the effects of SMP policies on the features and conservation objectives of the international sites in this area has been central to producing policies in this process. However, due to the conflicting and mutually exclusive requirements of the SMP (in both a socio-economic and environmental context), it has not been possible for the appropriate assessment of the North Norfolk SMP to conclude no adverse effect on the integrity of the international sites.

It therefore follows that SMP policies in assessment units SF2a, SF2b and SF3b cannot be concluded not to have an adverse effect on the integrity of international sites.

M7 The in-combination assessment of SMP policies

As discussed previously, two aspects of in-combination effects need considering. These are the cumulative effects of SMP policies in neighbouring assessment units and the effects of SMP policies in each assessment unit in combination with other plans and projects. This in-combination assessment also needs to consider the issues discussed in **section 6.3** and the other plans and projects outlined in **section 5**.

The intent is to establish if the effects of SMP policies, in combination with the effects of other plans and projects, would have an adverse effect on the integrity of international sites.

M7.1 The in-combination assessment with other plans and projects

The assessment of SMP policies in the **annex to this appendix** provides a clear account of the expected effects of SMP policies in each AA assessment unit. In simple terms (as outlined above), the only real effect of policies are changes in habitat area or habitat morphology. So the outstanding issue here is whether the habitat change or loss as a result of the SMP would have an in-combination effect with other plans and projects.

Of the other plans and projects identified in **section 5**, only one is considered relevant to this assessment, following the detailed assessment in the **annex to this appendix** – land use plans.

The central effects of land use plans are loss of habitat if development is suggested by policies in areas covered by international designations, or disturbance from increased numbers of visitors due to increased population (a function of housing policy) or tourism initiatives. None of the land use plans that cover the north Norfolk coast provide for development on any international site and the remaining effect is therefore one of disturbance. Disturbance relates to the physical disturbance through visitation, mainly on bird species. Ground-nesting species in particular are susceptible to disturbance. The designation of SPA habitat for ground-nesting tern species is one of the major designations on the north Norfolk coast. Consideration therefore needs to be given as to whether this effect, coupled with the effects of the SMP, is considered to have any combined effect. The delivery of the SMP seeks to maintain the natural evolution of shingle ridges, while providing for management if needed to maintain a flood defence function. No adverse effects of SMP policies have been identified on this particular feature. It therefore follows that there is no combined adverse effect on this feature.

The outstanding issue would be whether the loss of freshwater habitat identified in this assessment as an adverse effect of SMP policies would have an in-combination effect with disturbance through visitation. The relevant local authority plans in this area relate to existing and emerging policies from:

- Borough Council of King's Lynn and West Norfolk and

- North Norfolk District Council.

It is considered that firstly, most visitors to the north Norfolk coast will be drawn to the foreshore rather than grazing marsh or reedbed areas. Secondly, the association between disturbance and loss of habitat would be difficult to establish without additional studies. Such studies could, in theory, be provided at the scheme level, but are not considered appropriate for this level of assessment, which should be based on available information. **The SMP is therefore not considered to have any in-combination effects with land use plans along the north Norfolk coast.**

M7.2 The collective assessment of SMP policies

The super-frontage concept was developed because each super-frontage is physically discrete and because management decisions taken in one super-frontage would have no (or very limited) effects on neighbouring super-frontages. Within this concept, assessment units were developed with direct relevance to the intent of management in each assessment unit. This has allowed each assessment unit to be considered as one unit and also collectively within each super-frontage.

The assessment in the **annex to this appendix** has provided for upstream and downstream effects, so the effect of a SMP policy in each assessment unit has been considered in neighbouring assessment units. During this assessment (at the 'alone' stage) the effects of policies outside each assessment unit were fully considered.

It therefore remains to be considered whether SMP policies in one PDZ or assessment unit have effects that are considered acceptable on their own, but which would affect site integrity in combination with the effect of another policy, or where a series of small-scale similar effects together contribute to an overall, adverse effect on the integrity of sites. The cumulative effects are addressed by an appropriate assessment. There is no '*de minimis*' in this process – if there is an adverse effect (no matter how small) on site integrity, the singular policy would not be acceptable.

No examples were found where SMP policies, either in an individual PDZ or assessment unit, have been assessed as having effects additional to any anticipated singular effects. The singular effect of the SMP relates mainly to changes in habitat area or habitat morphology. It should be considered, however, that the anticipated changes across the plan area need considering by the Environment Agency's Regional Habitat Creation Programme (RHCP) to ensure the most effective means of delivering compensatory habitat, its location and area.

M7.3 Conclusion

Based on the alone and in-combination assessments, it can be concluded that **the North Norfolk SMP2 will have an adverse effect on the integrity of international sites**. The extent of this effect depends on providing certain limited management provisions. However, SMP policies in SF2a, SF2b and

SF3b cannot be concluded not to have an adverse effect on the integrity of international sites.

The outcome of the assessment is that no adverse effect on the integrity of international sites cannot be concluded.

M8 References

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European Community (EC) (2000) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC.

English Nature (now Natural England) (2006). The Assessment of Regional Spatial Strategies under the Provisions of the Habitats Regulations – Draft Guidance.

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Tyldesley, D. and Hoskin, R. (2008) Assessing projects under the Habitats Directive: guidance for competent authorities. Report to the Countryside Council for Wales, Bangor.

SSSI citations are available online at:
http://www.sssi.naturalengland.org.uk/Special/sssi/index.cfm

Natura 2000 data forms are available at:
http://www.jncc.gov.uk/page-4

Annex to Appendix M

Appropriate assessment of SMP2 policies

Assessment unit SF1

North Norfolk Coast SAC

SAC site feature	**Multiple Annexe I and Annexe II habitats**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal lagoons.	This site encompasses a number of small percolation lagoons on the east coast of England. Together with Orfordness – Shingle Street and Benacre to Easton Bavents, it forms a significant part of the percolation lagoon resource concentrated in this part of the UK. The most notable of the lagoons at this site are Blakeney Spit Pools, a lagoon system of six small pools between a shingle ridge and saltmarsh. The bottom of each pool is shingle overlain by soft mud. The fauna of the lagoons includes a nationally rare species, the lagoonal mysid shrimp (*Paramysis nouveli*).	No decrease in area from an established baseline, subject to natural change. At least 60 per cent of the basin filled with water at all states of the tide and all year.
Perennial vegetation of stony banks.	Perennial vegetation of stony banks occurs at Blakeney Point, a shingle spit on the east coast of England with a series of recurves partly covered by sand dunes. This extensive site has a typical sequence of shingle vegetation, which includes open communities of pioneer species on the exposed ridge and more continuous grassland communities on the more sheltered shingle recurves. It also includes some of the best examples of transitions between shingle and saltmarsh, with characteristic but rare species more typical of the Mediterranean.	No change in extent.
Mediterranean and thermo-Atlantic halophilous scrubs.	The North Norfolk Coast, together with the Wash and North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes.	No change in extent.

Embryonic shifting dunes.	North Norfolk Coast in East Anglia is one of two sites representing embryonic shifting dunes in the east of England (the other being Winterton – Horsey dunes). It is a long, thin dune system, displaying both progradation and erosion. The exceptional length and variety of the dune/beach interface is reflected in the high total area of embryonic dune (over 40 hectares or at least 14 per cent of the national total). The process of continued progradation is central to the conservation of this habitat type at this site.	No change in extent.
Shifting dunes along the shoreline with *Ammophila arenaria.*	Shifting dunes form a major component of the complex of often linear dune systems that make up the north Norfolk coast, which is representative of shifting dunes along the shoreline with *Ammophila arenaria* in East Anglia. The site supports over 100 hectares of shifting dune vegetation, eight per cent of the estimated total area of this habitat type in Britain. The shifting dune vegetation is also varied, containing examples of all the main variants found in the southern part of the geographical range.	No change in extent.
Fixed dunes with herbaceous vegetation.	North Norfolk Coast on the east coast of England contains a large, active series of dunes on shingle barrier islands and spits and is little affected by development. The fixed dunes with herbaceous vegetation represents one of the principal variants of this vegetation type in the UK, as many of the swards are rich in lichens and drought-avoiding winter annuals such as common whitlowgrass *Erophila verna*, early forget-me-not *Myosotis ramosissima* and common corn salad *Valerianella locusta*.	No change in extent.
Humid dune slacks.	The slacks within this site are comparatively small and the Yorkshire-fog *Holcus lanatus* community predominates. The site represents humid dune slacks on the dry east coast of England and presents an extreme of the geographical range and ecological variation of the habitat in the UK. They are calcareous and complement the acidic dune slacks at Winterton – Horsey dunes, also in eastern England. The dune slack communities occur in association with swamp communities.	No change in extent.

Dunes with *Hippophae rhamnoides*. **Not a primary reason for site selection.** Petalwort. **Not a primary reason for site selection.** Otter. **Not a primary reason for site selection.**	Grows in open, damp, calcareous dune slacks, often on low hummocks rather than on the very wet ground, on compacted sandy/muddy bryophyte-rich turf. Most localities are referable to Annex I type 2190 humid dune slacks. Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	No change in extent. Fish biomass stays within expected natural fluctuations. No reduction in overall availability of fresh water. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.
Potential effect of policy	The chosen policies in assessment units SF1 ensure that the dune systems and associated vegetation will be protected and maintained. SMP policies in PDZs 1A and 1D will promote the natural development of the site and will not lead to any loss in area or ecological function of features and would not have any adverse effect. Policy for PDZ1B provides for management of the dune system to ensure its stability and natural development (the policy cites MR, but management is aimed at ensuring natural development, not an actual realignment). It is considered that this policy would promote natural change that would benefit the grey dunes. It may, however, lead (through natural change) to the loss of saline lagoons but this is not considered to constitute an adverse effect on the integrity of the site. Policy in PDZ1C is HtL policy in epochs 1 and 2 followed by either HtL or MR in epoch 3 (based on the response of the system to management and monitoring). It is considered that realignment could lead to the loss of	

	saline lagoons, but the policy itself would offer conditions for creating these ephemeral features. This loss is therefore considered within the context of natural change and is not an adverse effect.

Preventative measures	**Mitigation**	**Implications for the integrity of the site**
	Monitoring of the dune systems to ensure that management responds to the requirement to provide a natural development of this system.	No adverse effect on site integrity.

North Norfolk Coast SPA

SPA site features	**Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 and 4.2**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Bittern	At least five per cent of the UK breeding population 1992 to 1997.	Maintain population within acceptable limits.
Marsh harrier	6.4 per cent of the Great Britain breeding population at 1992 to1997.	Maintain population within acceptable limits.
Avocet	30 per cent of the Great Britain breeding population count - late 1980s.	Maintain population within acceptable limits.
Little tern	At least 13.8 per cent of the Great Britain breeding population 1992 to1996.	Maintain population within acceptable limits.
Mediterranean gull	Two pairs representing at least 20.0 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Roseate tern	Two pairs representing at least 3.3 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Common tern	At least 3.7 per cent of the Great Britain breeding population count 1996.	Maintain population within acceptable limits

Sandwich tern	26.4 per cent of the Great Britain breeding population 1992 to1996.	Maintain population within acceptable limits
Redshank	700 pairs representing at least 1.2 per cent of the breeding eastern Atlantic - wintering population.	Maintain population within acceptable limits.
Ringed plover	220 pairs representing at least 1.4 per cent of the breeding Europe/ northern Africa – wintering population.	Maintain population within acceptable limits.
Wigeon	1.1 per cent of the population 1991/92 to1995/96.	Maintain population within acceptable limits.
Pink-footed goose	10.6 per cent of the population 1991/92 to1995/96.	Maintain population within acceptable limits.
Brent goose	3.8 per cent of the population 1991/92 to1995/96.	Maintain population within acceptable limits.
Knot	3.1 per cent of the population 1991/92 to1995/96.	Maintain population within acceptable limits.
Pintail	1,139 individuals representing at least 1.9 per cent of the wintering north western Europe population.	Maintain population within acceptable limits.
Bar-tailed godwit	1,236 individuals representing at least 2.3 per cent of the GB wintering population.	Maintain population within acceptable limits.
Golden plover	2,667 individuals representing at least 1.1 per cent of the GB wintering population.	Maintain population within acceptable limits.
Hen harrier	16 individuals representing at least 2.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Ruff	54 individuals representing at least 7.7 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Potential effect of policies	Policies in PDZs 1A and 1B are allowing for the natural development of the dune system. Bittern and marsh harrier may be affected by the loss of reedbed at Holme marshes if a managed realignment policy is confirmed in epoch 3. The freshwater marshes at Holme are also regularly used by significant numbers of wintering wildfowl including pink-footed geese, dark-bellied Brent geese and wigeon. This potential loss therefore also represents a possible adverse effect on	

	the site's integrity. Such effects can, however, be addressed through the RHCP if required, as monitoring of the site will inform subsequent SMPs.	
Preventative measures	**Mitigation** Monitoring the site to establish the response of the system to management and sea level rise. If a managed realignment option is selected for PDZ1C in epoch 3, replacement habitat would be needed.	**Implications for the integrity of the site** Based on the provision of a monitoring programme for the site, and the allocation of replacement habitat through the RHCP if needed, we can conclude no adverse effect on the integrity of the site.

North Norfolk Ramsar site

Ramsar site features	**Ramsar criterion**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal habitat	It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.	Activities affecting sediment budget and human causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. No decrease in extent.
Red Data Book species	Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.	Maintain populations within acceptable limits.
Assemblages of international importance	98,462 waterfowl in winter.	Maintain assemblage size within acceptable limits.

Sandwich tern	275 apparently occupied nests, representing an average of 7.7 per cent of the breeding population.	Maintain population within acceptable limits.
Common tern	408 apparently occupied nests, representing an average of four per cent of the GB population.	Maintain population within acceptable limits.
Little tern	291 apparently occupied nests, representing an average of 2.5 per cent of the breeding population.	Maintain population within acceptable limits.
Knot	30,781 individuals, representing an average of 6.8 per cent of the population.	Maintain population within acceptable limits.
Pink-footed goose	16,787 individuals, representing an average of 6.9 per cent of the population.	Maintain population within acceptable limits.
Dark-bellied Brent goose	8,690 individuals, representing an average of four per cent of the population.	Maintain population within acceptable limits.
Wigeon	17,940 individuals, representing an average of 1.1 per cent of the population.	Maintain population within acceptable limits.
Pintail	1,148 individuals, representing an average of 1.9 per cent of the population.	Maintain population within acceptable limits.
Potential effect of policies	Policies in PDZs 1A and 1B are allowing for the natural development of the dune system. The freshwater marshes at Holme are regularly used by significant numbers of wintering wildfowl including pink-footed geese, dark-bellied Brent geese and wigeon. This potential loss therefore also represents a possible adverse effect on the site's integrity. Such effects can, however, be addressed through the RHCP if required, as monitoring of the site will inform future SMPs.	
Preventative measures	**Mitigation** Monitoring the site to establish the response of the system to management and sea level rise. If a managed realignment option is selected for PDZ1C in epoch 3, replacement habitat would be needed.	**Implications for the integrity of the site** Based on the provision of a monitoring programme for the site, and the allocation of replacement habitat through the RHCP if needed, we can conclude no adverse effect on the integrity of the site.

The Wash SPA

SPA site features	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 and 4.2	
Sub feature(s)	**Sensitivity**	**Conservation target**
Little tern	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. One per cent of the UK breeding population. Five-year mean 1992 to 1996.	There is no site-specific target for little tern for the Wash SSSI/SPA as it is clear that the species does not regularly breed within the site and was wrongly included in the Wash SPA citation.
Common tern	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 1.2 per cent of the UK breeding population – count taken 1993.	Based on the known natural fluctuations of the Snettisham population within the site, maintain the population above 59 pairs, the minimum recorded at this site.
Marsh harrier	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 9.4 per cent of the breeding population in Great Britain.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Bar-tailed godwit	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 21.4 per cent of the UK breeding population, 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Avocet	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 8.7 per cent of the wintering population in Great Britain (five- year peak mean 1991/92 to 1995/96).	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Whooper swan	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 1.2 per cent of the UK breeding population, 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.

Golden plover	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 11,037 individuals representing at least 4.4 per cent of the wintering population in Great Britain (five-year peak mean 1991/92 to 1995/96).	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Ringed plover	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 1,185 individuals representing at least 2.4 per cent of the Europe/northern Africa wintering population (five-year peak mean 1991/92 to 1995/96).	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Pintail	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 1.5 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Pink-footed goose	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 14.8 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Ruddy turnstone	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 1.1 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Brent goose	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 7.4 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.

Sanderling	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 0.3 per cent of the population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Dunlin	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 2.6 per cent of the population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Red knot	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 54.2 per cent of the population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Oystercatcher	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 2.9 per cent of the population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Black-tailed godwit	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 11.6 per cent of the population in Great Britain. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Curlew	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 1.1 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Grey plover	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 5.8 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.

Common shelduck	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 5.3 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Common redshank	Intertidal zone is vulnerable to coastal squeeze as a result of land claim, coastal defence works, sea level rise, gas exploration and storm surges. 1.7 per cent of the UK population. Five-year peak mean 1991/92 to 1995/96.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Intertidal banks of sand and mud flats support high concentrations of marine worms, shellfish, algae and marine invertebrates that provide a food source.	The Wash is the most important staging post and over-wintering site for migrant wildfowl and wading birds in eastern England. Loss of area would reduce food source for internationally important numbers of birds, commercial fish stocks and a seal colony. Intertidal areas are potentially affected by changes in sediment budget caused by dredging and coastal protection, building of river training walls and flood defence works. Also potentially vulnerable to gas exploration.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Policies in place to ensure sustainable management of shellfish stocks. No decrease in extent of littoral sediment.
Potential effect of policies	Policies in PDZs 1A and 1B are allowing for the natural development of the dune system. Marsh harrier may be affected by the loss of reedbed at Holme marshes in the event of a managed realignment policy in epoch 3. The freshwater marshes at Holme are also regularly used by significant numbers of wintering wildfowl including pink-footed geese, Brent geese, whooper swan and common shelduck. This potential loss therefore also represents a possible adverse effect on the site's integrity. Such effects can, however, be addressed through the RHCP if needed, as monitoring of the site informs future SMPs.	

Preventative measures	**Mitigation** Monitoring of the site to establish the response of the system to management and sea level rise. If managed realignment is selected for PDZ1C in epoch 3, replacement habitat would be needed.	**Implications for the integrity of the site** Based on the provision of a monitoring programme for the site, and the allocation of replacement habitat through the RHCP if required, we can conclude no adverse effect on the integrity of the site.

The Wash Ramsar site

Ramsar site features	**Ramsar criterion**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Sand dunes.	Due to development and increased human activities behind the dunes, coastal squeeze is becoming an issue.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Shallow waters - provide a primary source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary.	Flooding from sea level rise or overtopping during storm surges. Intertidal areas are potentially affected by changes in sediment budget caused by dredging and coastal protection, building of river training walls and flood defence works. Also potentially vulnerable to gas exploration.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Policies in place to ensure sustainable management of shellfish stocks.
Inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters.	The saltmarshes and the plankton in the estuarine waters provide a primary source of organic material. This, together with other organic matter, forms the basis for the high productivity of the estuary.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. No changes in extents of habitats.

Assemblage of international importance	292,541 waterfowl.	The site should be judged unfavourable if the baseline population of waterfowl declines by 50 per cent or more.
Oystercatcher	Peak counts in spring/autumn. 15,616 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Grey plover	Peak counts in spring/autumn. 13,129 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Red knot	Peak counts in spring/autumn. 68,987 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Sanderling	Peak counts in spring/autumn. 3,505 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Curlew	Peak counts in spring/autumn. 9,438 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Common redshank	Peak counts in spring/autumn. 6,373 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Ruddy turnstone	Peak counts in spring/autumn. 888 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Pink-footed goose	Peak counts in winter. 29,099 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.

Dark-bellied Brent goose	Peak counts in winter. 20,861 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Common shelduck	Peak counts in winter. 9,746 intervals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Northern pintail	Peak counts in winter. 431 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Dunlin	Peak counts in winter. 36,600 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Bar-tailed godwit	Peak counts in winter. 16,546 individuals.	The site should be judged unfavourable if population declines of 50 per cent or more from the baseline level are recorded.
Potential effect of policies	Policies in PDZs1A and 1B are allowing for the natural development of the dune system. The freshwater marshes at Holme are regularly used by significant numbers of wintering wildfowl including pink-footed geese, dark-bellied Brent geese and common shelduck. This potential loss therefore also represents a possible adverse effect on the site's integrity. Such effects can, however, be addressed through the RHCP if needed, as monitoring of the site will inform future SMPs.	
Preventative measures	**Mitigation** Monitoring of the site to establish the response of the system to management and sea level rise. If managed realignment is selected for PDZ1C in epoch 3, replacement habitat would be needed.	**Implications for the integrity of the site** Based on the provision of a monitoring programme for the site, and the allocation of replacement habitat through the RHCP if needed, we can conclude no adverse effect on the integrity of the site.

The Wash and North Norfolk Coast SAC

SAC site features	Multiple Annexe I and Annexe II habitats	
Sub feature(s)	**Sensitivity**	**Conservation target**
All habitats.	Threat from coastal squeeze as a result of land claim and coastal defence works as well as sea-level rise and storm surges. Changes in sediment budget also threaten these habitats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Sandbanks that are slightly covered by sea water all the time - sandy sediments occupy most of the subtidal area.	Sandbanks support sub-littoral communities such as large dense beds of brittle-stars. Species include the sand-mason worm and the tellin. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. Sub-tidal sandbanks provide important nursery grounds for young commercial fish species including plaice, cod and sole.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mudflats and sandflats not covered by sea water at low tide - sandy intertidal flats predominate with some soft mudflats in the areas sheltered by barrier beaches and islands.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Large shallow inlets and bays - the Wash is the largest embayment in the UK.	Communities in the intertidal include those characterised by large numbers of polychaetes, bivalves and crustaceans. Sub-littoral communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittle-star beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Reefs - *Sabellaria spinulosa* forms areas of biogenic reef in the Wash. This is the only current known location of well-developed stable *Sabellaria spinulosa* in the UK. *Salicornia* and other annuals colonising mud and sand. The largest single area of this vegetation in the UK is at this site. Atlantic sea meadows (*Glauco-Puccinellietalia maritimae*). The Wash saltmarshes represent the largest single area of this habitat type in the UK. Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). The Wash and North Norfolk Coast, with the North Norfolk Coast, comprises the only area in UK where all the more typically Mediterranean species that characterise this habitat occur together.	common seal *Phoca vitulina*. These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits. The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, saltmeadow and halophytic scrub communities. Saltmarsh swards dominated by sea lavenders *Limonium* speices are particularly well-represented on this site. As well as typical lower and middle saltmarsh communities, in north Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast, perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Byelaws developed to close areas of identified reef to protect it from trawling and dredging activities. Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Coastal lagoons. **Not a primary reason for site selection.**	purslane community.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Common seal *Phoca vitulina.* This site is the largest colony of common seals in the UK, with about seven per cent of the total UK population.	The extensive intertidal flats here and on the north Norfolk coast provide ideal conditions for common seal *Phoca vitulina* breeding and hauling-out.	To continue to improve water quality, minimise human disturbance and maintain present diversity. On this site favourable condition requires the maintenance of the population of each designated species or assemblage. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population or assemblage.
Otter *Lutra lutra.* **Not a primary reason for site selection.**	Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	Fish biomass stays within expected natural fluctuations. No reduction in overall availability of freshwater. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.

Potential effect of policies	Policies in assessment unit SF1 ensure that the intertidal systems and associated vegetation will be protected and allowed to migrate towards land. As all the features of this site are coastal or marine in nature, the MR and NAI options will prevent squeeze of those habitats seaward of defences and provide for a more natural response of such systems to coastal processes. Based on monitoring of this site, the need for managed realignment may arise in PDZ1C in epoch 3 to prevent the actual loss of intertidal habitat (as a feature of this site). Such a realignment, if required, would avoid any adverse effect through coastal squeeze.	
Preventative measures	**Mitigation** Monitoring of the site to establish the response of the system to management and sea level rise. If the monitoring points towards a loss of intertidal habitat, a managed realignment option for PDZ1C in epoch 3 would be provided.	**Implications for the integrity of the site** No adverse effect on the integrity of the site.

Assessment unit SF2a

North Norfolk Coast SAC

SAC site feature	**Multiple Annexe I and Annexe II habitats**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal lagoons.	This site encompasses a number of small percolation lagoons on the east coast of England. Together with Orfordness - Shingle Street and Benacre to Easton Bavents, it forms a significant part of the percolation lagoon resource concentrated in this part of the UK. The most notable of the lagoons at this site is Blakeney Spit Pools, a lagoon system of six small pools between a shingle ridge and saltmarsh. The bottom of each pool is shingle overlain by soft mud. The fauna of the lagoons includes a nationally rare species, the lagoonal mysid shrimp (*Paramysis nouveli*).	No decrease in area from an established baseline, subject to natural change At least 60 per cent of the basin filled with water at all states of the tide and all year.
Perennial vegetation of stony banks.	Perennial vegetation of stony banks occurs at Blakeney Point, a shingle spit on the east coast of England with a series of recurves partly covered by sand dunes. This extensive site has a typical sequence of shingle vegetation, which includes open communities of pioneer species on the exposed ridge and more continuous grassland communities on the more sheltered shingle recurves. It also includes some of the best examples of transitions between shingle and saltmarsh, with characteristic but rare species more typical of the Mediterranean.	No change in extent.
Mediterranean and thermo-Atlantic halophilous scrubs.	The North Norfolk Coast, together with the Wash and North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes.	No change in extent.

Embryonic shifting dunes.	North Norfolk Coast in East Anglia is one of two sites representing embryonic shifting dunes in the east of England (the other being Winterton – Horsey dunes). It is a long, thin dune system, displaying both progradation and erosion. The exceptional length and variety of the dune/beach interface is reflected in the high total area of embryonic dune (over 40 hectares or at least 14 per cent of the national total). The process of continued progradation is central to the conservation of this habitat type at this site.	No change in extent.
Shifting dunes along the shoreline with *Ammophila arenaria.*	Shifting dunes form a major component of the complex of often linear dune systems that make up the North Norfolk Coast, which is representative of shifting dunes along the shoreline with *Ammophila arenaria* in East Anglia. The site supports over 100 hectares of shifting dune vegetation, eight per cent of the estimated total area of this habitat type in Britain. The shifting dune vegetation is also varied, containing examples of all the main variants found in the southern part of the geographical range.	No change in extent.
Fixed dunes with herbaceous vegetation.	North Norfolk Coast on the east coast of England contains a large, active series of dunes on shingle barrier islands and spits and is little affected by development. The fixed dunes with herbaceous vegetation represents one of the principal variants of this vegetation type in the UK, as many of the swards are rich in lichens and drought-avoiding winter annuals such as common whitlowgrass *Erophila verna*, early forget-me-not *Myosotis ramosissima* and common corn salad *Valerianella locusta*.	No change in extent.
Humid dune slacks.	The slacks within this site are comparatively small and the Yorkshire-fog *Holcus lanatus* community predominates. The site represents humid dune slacks on the dry east coast of England and presents an extreme of the geographical range and ecological variation of the habitat within the UK. They are calcareous and complement the acidic dune slacks at Winterton – Horsey dunes, also in eastern England. The dune slack communities occur in association with swamp communities.	No change in extent.

Dunes with *Hippophae rhamnoides*. **Not a primary reason for site selection.** Petalwort. **Not a primary reason for site selection.** Otter. **Not a primary reason for site selection.**	Grows in open, damp, calcareous dune slacks, often on low hummocks rather than on the very wet ground, on compacted sandy/muddy bryophyte-rich turf. Most localities are referable to Annex I type 2190 humid dune slacks. Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	No change in extent Fish biomass stays within expected natural fluctuations. No reduction in overall availability of freshwater. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly impacted by human-induced kills.
Potential effect of policies	Policies in PDZs 2A and 2C provide for the coast to evolve in response to natural change. There is therefore no anticipated effect as a result of these policies. Policy in PDZ2B allows for the RSPB as landowner to develop management through a realignment scheme that is being accompanied by a detailed AA. No adverse effect is therefore considered likely as a result of SMP policy. Policy in PDZ2E allows the Royal West Norfolk golf club to manage the dunes so that their condition is similar to the time of designation. The actual policy is intended to continue management that has not had an adverse effect on the dune features in the past. It is not therefore considered that this policy will have an adverse effect.	

	Policies in PDZ2F, 2Gii, 2J, 2K, 2L, 2M and 2H provide for HtL close to established settlements which is a socio-economic driver of the SMP. Any effects due to coastal squeeze as a result of SMP policies will be on intertidal habitat, which is not a feature of this site.

Preventative measures	**Mitigation**	**Implications for the integrity of the site** No adverse effect on the integrity of the site.

North Norfolk Coast SPA

SPA site features	**Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 and 4.2**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Bittern	At least five per cent of the UK breeding population 1992 to 1997.	Maintain population within acceptable limits.
Marsh harrier	6.4 per cent of the Great Britain breeding population 1992 to 1997.	Maintain population within acceptable limits.
Avocet	30 per cent of the Great Britain breeding population count - late 1980s.	Maintain population within acceptable limits.
Little tern	At least 13.8 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits.
Mediterranean gull	Two pairs representing at least 20.0 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Roseate tern	Two pairs representing at least 3.3 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Common tern	At least 3.7 per cent of the Great Britain breeding population count 1996.	Maintain population within acceptable limits.
Sandwich tern	26.4 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits.
Redshank	700 pairs representing at least 1.2 per cent of the breeding eastern Atlantic	Maintain population within acceptable limits.

	– wintering population.	
Ringed plover	220 pairs representing at least 1.4 per cent of the breeding Europe/northern Africa – wintering population.	Maintain population within acceptable limits.
Wigeon	1.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pink-footed goose	10.6 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Brent goose	3.8 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Knot	3.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pintail	1,139 individuals representing at least 1.9 per cent of the wintering north western Europe population.	Maintain population within acceptable limits.
Bar-tailed godwit	1,236 individuals representing at least 2.3 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Golden plover	2,667 individuals representing at least 1.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Hen harrier	16 individuals representing at least 2.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Ruff	54 individuals representing at least 7.7 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Potential effect of policies	The loss of intertidal habitat through coastal squeeze has the potential to affect populations of cited bird species including tern species, gull species, marsh harrier, knot and avocet throughout the three epochs of this SMP. This therefore constitutes an adverse effect on integrity.	
Preventative measures	**Mitigation**	**Implications for the integrity of the site** HtL policies in SF2a will cause adverse effects on SPA-cited species. This therefore

		constitutes an adverse effect on site integrity.

North Norfolk Ramsar site

Ramsar site features	Ramsar criterion 6. Species/populations occurring at levels of international importance	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal habitat	It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reedbeds.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Red Data Book species	Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.	Maintain populations within acceptable limits.
Assemblages of international importance	98,462 waterfowl in winter.	Maintain assemblage size within acceptable limits.
Sandwich tern	275 apparently occupied nests, representing an average of 7.7 per cent of the breeding population.	Maintain population within acceptable limits.
Common tern	408 apparently occupied nests, representing an average of four per cent of the GB population.	Maintain population within acceptable limits.
Little tern	291 apparently occupied nests, representing an average of 2.5 per cent of the breeding population.	Maintain population within acceptable limits.
Knot	30,781 individuals, representing an average of 6.8 per cent of the population.	Maintain population within acceptable limits.
Pink-footed goose	16,787 individuals, representing an average of 6.9 per cent of the population.	Maintain population within acceptable limits.
Dark-bellied Brent goose	8,690 individuals, representing an average of four per cent of the population.	Maintain population within acceptable limits.
Wigeon	17,940 individuals, representing an average of 1.1 per cent of the population.	Maintain population within acceptable limits.

Pintail	1,148 individuals, representing an average of 1.9 per cent of the population.	Maintain population within acceptable limits.
Potential effect of policies	The loss of intertidal habitats through coastal squeeze has the potential to affect populations of cited bird species including tern species and waterfowl throughout the three epochs of this SMP. This therefore constitutes an adverse effect on integrity.	
Preventative measures	**Mitigation**	**Implications for the integrity of the site** HtL policies in SF2a will cause adverse effects on Ramsar-cited species. This therefore constitutes an adverse effect on site integrity.

The Wash and North Norfolk Coast SAC

SAC site features	Multiple Annexe I and Annexe II habitats	
Sub feature(s)	**Sensitivity**	**Conservation target**
All habitats	Threat from coastal squeeze as a result of land claim and coastal defence works as well as sea level rise and storm surges. Changes in sediment budget also threaten these habitats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Sandbanks that are slightly covered by sea water all the time - sandy sediments occupy most of the sub-tidal area.	Sandbanks support sub-littoral communities such as large dense beds of brittle-stars. Species include the sand-mason worm and the tellin. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. Sub-tidal sandbanks provide important nursery grounds for young commercial fish species including plaice, cod and sole.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mudflats and sandflats not covered by sea water at low tide - sandy intertidal flats predominate with some soft mudflats in the areas sheltered by barrier beaches and islands.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Large shallow inlets and bays - the Wash is the largest embayment in the UK.	Communities in the intertidal include those characterised by large numbers of polychaetes, bivalves and crustaceans. Sub-littoral communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittle-star beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and common seal *Phoca vitulina*.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Reefs - *Sabellaria spinulosa* forms areas of biogenic reef in the Wash. This is the only currently-known location of well-developed stable *Sabellaria spinulosa* in the UK.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Byelaws developed to close areas of identified reef to protect it from trawling and dredging activities.
Salicornia and other annuals colonising mud and sand. The largest single area of this vegetation in the UK occurs at this site.	The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, salt meadow and halophytic scrub communities.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Atlantic sea meadows (*Glauco-Puccinellietalia maritimae*). The Wash saltmarshes represent the largest single area of the habitat type in the UK.	Saltmarsh swards dominated by sea lavenders *Limonium* species are particularly well-represented on this site. As well as typical lower and middle saltmarsh communities, in north Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). The Wash and North Norfolk Coast, with the North Norfolk Coast, comprises the only area in UK where all the more typically Mediterranean species that characterise this habitat occur together.	The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast, perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea purslane community.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Coastal lagoons. **Not a primary reason for site selection.**		Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Common seal *Phoca vitulina.* This site is the largest colony of common seals in the UK, with some seven per cent of the total UK population.	The extensive intertidal flats here and on the north Norfolk coast provide ideal conditions for common seal *Phoca vitulina* breeding and hauling-out.	To continue to improve water quality, minimise human disturbance and maintain present diversity. On this site favourable condition requires the maintenance of the population of each designated species or assemblage. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population or assemblage.
Otter *Lutra lutra.* **Not a primary reason for site selection.**	Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	Fish biomass stays within expected natural fluctuations. No reduction in overall availability of freshwater. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.
Potential effect of policies	SMP policies in PDZs 2A and 2C provide for the coast to evolve in response to natural change. There is therefore no anticipated effect as a result of these policies. Policy in PDZ2B allows for the RSPB as landowner to develop management through their realignment scheme which is being accompanied by a detailed AA. No adverse effect is therefore considered likely as a result of this SMP policy.	

		SMP policies in PDZs 2F, 2Gii and 2H provide for HtL close to established settlements. Both policies have the potential to lead to loss of intertidal habitats such as *Salicornia* and other annuals colonising mud and sand and Atlantic sea meadows through squeeze so this would constitute an adverse effect. SMP policies in PDZs 2J, 2K, 2L and 2M also provide HtL but will not lead to the loss of any designated features.
Preventative measures	**Mitigation**	**Implications for the integrity of the site** SMP policies in PDZ2F, PDZ2Gii and PDZ2H have the potential to cause squeeze of intertidal habitats such as *Salicornia* and other annuals colonising mud and sand and Atlantic sea meadows. This is therefore determined to be an adverse effect on site integrity.

Assessment unit SF2b

North Norfolk Coast SAC

SAC site feature	**Multiple Annexe I and Annexe II habitats**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal lagoons.	This site encompasses a number of small percolation lagoons on the east coast of England. Together with Orfordness – Shingle Street and Benacre to Easton Bavents, it forms a significant part of the percolation lagoon resource concentrated in this part of the UK. The most notable of the lagoons at this site is Blakeney Spit Pools, a lagoon system of six small pools between a shingle ridge and saltmarsh. The bottom of each pool is shingle overlain by soft mud. The fauna of the lagoons includes a nationally rare species, the lagoonal mysid shrimp (*Paramysis nouveli*).	No decrease in area from an established baseline, subject to natural change. At least 60 per cent of the basin filled with water at all states of the tide and all year.
Perennial vegetation of stony banks.	Perennial vegetation of stony banks occurs at Blakeney Point, a shingle spit on the east coast of England with a series of recurves partly covered by sand dunes. This extensive site has a typical sequence of shingle vegetation, which includes open communities of pioneer species on the exposed ridge and more continuous grassland communities on the more sheltered shingle recurves. It also includes some of the best examples of transitions between shingle and saltmarsh, with characteristic but rare species more typical of the Mediterranean.	No change in extent.
Mediterranean and thermo-Atlantic halophilous scrubs.	The North Norfolk Coast, together with the Wash and North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes.	No change in extent.

Embryonic shifting dunes.	North Norfolk Coast in East Anglia is one of two sites representing embryonic shifting dunes in the east of England (the other being Winterton – Horsey dunes). It is a long, thin dune system, displaying both progradation and erosion. The exceptional length and variety of the dune/beach interface is reflected in the high total area of embryonic dune (over 40 hectares or at least 14 per cent of the national total). The process of continued progradation is central to the conservation of this habitat type at this site.	No change in extent.
Shifting dunes along the shoreline with *Ammophila arenaria.*	Shifting dunes form a major component of the complex of often linear dune systems that make up the north Norfolk coast, which is representative of shifting dunes along the shoreline with *Ammophila arenaria* in East Anglia. The site supports over 100 hectares of shifting dune vegetation, eight per cent of the estimated total area of this habitat type in Britain. The shifting dune vegetation is also varied, containing examples of all the main variants found in the southern part of the geographical range.	No change in extent.
Fixed dunes with herbaceous vegetation.	North Norfolk Coast on the east coast of England contains a large, active series of dunes on shingle barrier islands and spits and is little affected by development. The fixed dunes with herbaceous vegetation represents one of the principal variants of this vegetation type in the UK, as many of the swards are rich in lichens and drought-avoiding winter annuals such as common whitlowgrass *Erophila verna*, early forget-me-not *Myosotis ramosissima* and common corn salad *Valerianella locusta*.	No change in extent.
Humid dune slacks.	The slacks within this site are comparatively small and the Yorkshire-fog *Holcus lanatus* community predominates. The site represents humid dune slacks on the dry east coast of England and presents an extreme of the geographical range and ecological variation of the habitat within the UK. They are calcareous and complement the acidic dune slacks at Winterton – Horsey dunes, also in eastern England. The dune slack communities occur in association with swamp communities.	No change in extent.

Dunes with *Hippophae rhamnoides*. **Not a primary reason for site selection.** Petalwort. **Not a primary reason for site selection.** Otter. **Not a primary reason for site selection.**	Grows in open, damp, calcareous dune slacks, often on low hummocks rather than on very wet ground, on compacted sandy/muddy bryophyte-rich turf. Most localities refer to Annex I type 2190 humid dune slacks. Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	No change in extent. Fish biomass stays within expected natural fluctuations. No reduction in overall availability of fresh water. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly impacted by human-induced kills.
Potential effect of policies	SMP policies in PDZs 2D and 2Gi and 2Giii will not lead to a loss of dune habitat through squeeze, as the dune system here is around 250 metres in front of the now-retired flood defence line. SMP policy in PDZ2I is for management (which is listed as MR) of the dunes at Holkham to allow natural change.	
Preventative measures	**Mitigation**	**Implications for the integrity of the site** No adverse effect on site integrity.

North Norfolk Coast SPA

SPA site features	**Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 and 4.2**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Bittern	At least five per cent of the UK breeding population 1992 to 1997.	Maintain population within acceptable limits.
Marsh harrier	6.4 per cent of the Great Britain breeding population at 1992 to 1997.	Maintain population within acceptable limits.
Avocet	30 per cent of the Great Britain breeding population count - late 1980s.	Maintain population within acceptable limits.
Little tern	At least 13.8 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits.
Mediterranean gull	Two pairs representing at least 20.0 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Roseate tern	Two pairs representing at least 3.3 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Common tern	At least 3.7 per cent of the Great Britain breeding population count 1996.	Maintain population within acceptable limits.
Sandwich tern	26.4 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits.
Redshank	700 pairs representing at least 1.2 per cent of the breeding eastern Atlantic – wintering population.	Maintain population within acceptable limits.
Ringed plover	220 pairs representing at least 1.4 per cent of the breeding Europe/ northern Africa – wintering population.	Maintain population within acceptable limits.
Wigeon	1.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pink-footed goose	10.6 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Brent goose	3.8 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Knot	3.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pintail	1,139 individuals representing at least 1.9 per cent of the wintering north western Europe population.	Maintain population within acceptable limits.
Bar-tailed godwit	1,236 individuals representing at least 2.3 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.

Golden plover	2,667 individuals representing at least 1.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Hen harrier	16 individuals representing at least 2.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Ruff	54 individuals representing at least 7.7 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Potential effect of policies	HtL in epochs 1 and 2 will lead to the loss of intertidal habitat. This has the potential to affect avocet, wigeon and geese species. Also wigeon, pink-footed geese and dark-bellied Brent geese use the surrounding farmland for forage, so any loss of this habitat (through MR) will also constitute an adverse effect on integrity. There is marsh harrier in the freshwater areas of SF2b, while bittern also use reedbed areas in PDZ2D. The loss of reedbed and freshwater habitat will therefore constitute an adverse effect on the integrity of the site.	
Preventative measures	**Mitigation** Subject to agreement by the competent authorities, any loss of intertidal habitat will be offset by creating habitat through MR in PDZ3Aiii (Blakeney Freshes)	**Implications for the integrity of the site** The loss of freshwater and terrestrial habitats is considered likely to have an adverse effect on geese species, marsh harrier and bittern. The effect on these features will therefore constitute an adverse effect on the integrity of this site.

North Norfolk Ramsar site

Ramsar site features	Ramsar criterion 6. Species/populations occurring at levels of international importance	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal habitat	It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Red Data Book species	Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.	Maintain populations within acceptable limits.
Assemblages of international importance	98,462 waterfowl in winter.	Maintain assemblage size within acceptable limits.
Sandwich tern	275 apparently occupied nests, representing an average of 7.7 per cent of the breeding population.	Maintain population within acceptable limits.
Common tern	408 apparently occupied nests, representing an average of four per cent of the GB population.	Maintain population within acceptable limits.
Little tern	291 apparently occupied nests, representing an average of 2.5 per cent of the breeding population.	Maintain population within acceptable limits.
Knot	30,781 individuals, representing an average of 6.8 per cent of the population.	Maintain population within acceptable limits.
Pink-footed goose	16,787 individuals, representing an average of 6.9 per cent of the population.	Maintain population within acceptable limits.
Dark-bellied Brent goose	8,690 individuals, representing an average of four per cent of the population.	Maintain population within acceptable limits.
Wigeon	17,940 individuals, representing an average of 1.1 per cent of the population.	Maintain population within acceptable limits.

Pintail	1,148 individuals, representing an average of 1.9 per cent of the population.	Maintain population within acceptable limits.
Potential effect of policies	HtL in epochs 1 and 2 will lead to the loss of intertidal habitat. This has the potential to affect wigeon and geese species. Also, wigeon, pink-footed geese and dark-bellied Brent geese use the surrounding farmland for forage so any loss of this habitat (through MR) will also constitute an adverse effect on integrity.	
Preventative measures	**Mitigation** Subject to agreement by the competent authorities, any loss of intertidal habitat will be offset by creating habitat through MR in PDZ3Aiii (Blakeney Freshes)	**Implications for the integrity of the site** Adverse affect on site integrity due to the loss of grazing marsh habitat and its effect on wigeon and geese species.

The Wash and North Norfolk Coast SAC

SAC site features	Multiple Annexe I and Annexe II habitats	
Sub feature(s)	**Sensitivity**	**Conservation target**
All habitats.	Threat from coastal squeeze as a result of land claim and coastal defence works as well as sea level rise and storm surges. Changes in sediment budget also threaten these habitats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Sandbanks that are slightly covered by sea water all the time - sandy sediments occupy most of the sub-tidal area.	Sandbanks support sub-littoral communities such as large dense beds of brittle-stars. Species include the sand-mason worm and the tellin. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. Sub-tidal sandbanks provide important nursery grounds for young commercial fish species including plaice, cod and sole.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mudflats and sandflats not covered by sea water at low tide - sandy intertidal flats predominate with some soft mudflats in the areas sheltered by barrier beaches and islands.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Large shallow inlets and bays - the Wash is the largest embayment in the UK.	Communities in the intertidal include those characterised by large numbers of polychaetes, bivalves and crustaceans. Sub-littoral communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittle-star beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and common seal *Phoca vitulina*.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Reefs - *Sabellaria spinulosa* forms areas of biogenic reef in the Wash. This is the only currently-known location of well-developed stable *Sabellaria spinulosa* in the UK.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Byelaws developed to close areas of identified reef to protect it from trawling and dredging activities.
Salicornia and other annuals colonising mud and sand. The largest single area of this vegetation in the UK occurs at this site.	The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, saltmeadow and halophytic scrub communities.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Atlantic sea meadows (*Glauco-Puccinellietalia maritimae*). The Wash saltmarshes represent the largest single area of the habitat type in the UK.	Saltmarsh swards dominated by sea lavenders *Limonium* species are particularly well-represented on this site. As well as typical lower and middle saltmarsh communities, in north Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). The Wash and North Norfolk Coast, with the North Norfolk Coast, comprises the only area in UK where all the more typically Mediterranean species that characterise this habitat occur together.	The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes, and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of places on this coast perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea purslane community.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Coastal lagoons. **Not a primary reason for site selection.** Common seal *Phoca vitulina.* This site is the largest colony of common seals in the UK, with some seven per cent of the total UK population. Otter *Lutra lutra.* **Not a primary reason for site selection.**	The extensive intertidal flats here and on the North Norfolk Coast provide ideal conditions for common seal *Phoca vitulina* breeding and hauling-out. Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. To continue to improve water quality, minimise human disturbance and maintain present diversity. On this site favourable condition requires the maintenance of the population of each designated species or assemblage. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population or assemblage. Fish biomass stays within expected natural fluctuations. No reduction in overall availability of fresh water. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.
Potential effect of policies	The HtL policies have the effect of leading to loss of habitat through coastal squeeze. SMP policies in PDZ2D, 2Gi and 2Giii are all expected to lead to a loss of intertidal habitat (saltmarsh and mudflat). Such loss through squeeze is considered likely to be a potential adverse effect on the integrity of the site.	

Preventative measures	**Mitigation** Subject to agreement by the competent authorities, any loss of intertidal habitat will be offset by creating habitat through MR in PDZ3Aiii (Blakeney Freshes).	**Implications for the integrity of the site** No adverse effect on site integrity.

Assessment units SF3a

North Norfolk Coast SAC

SAC site feature	**Multiple Annexe I and Annexe II habitats**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal lagoons.	This site encompasses a number of small percolation lagoons on the east coast of England. Together with Orfordness - Shingle Street and Benacre to Easton Bavents, it forms a significant part of the percolation lagoon resource concentrated in this part of the UK. The most notable of the lagoons at this site is Blakeney Spit Pools, a lagoon system of six small pools between a shingle ridge and saltmarsh. The bottom of each pool is shingle overlain by soft mud. The fauna of the lagoons includes a nationally rare species, the lagoonal mysid shrimp (*Paramysis nouveli*).	No decrease in area from an established baseline, subject to natural change. At least 60 per cent of the basin filled with water at all states of the tide and all year.
Perennial vegetation of stony banks.	Perennial vegetation of stony banks occurs at Blakeney Point, a shingle spit on the east coast of England with a series of recurves partly covered by sand dunes. This extensive site has a typical sequence of shingle vegetation, which includes open communities of pioneer species on the exposed ridge and more continuous grassland communities on the more sheltered shingle recurves. It also includes some of the best examples of transitions between shingle and saltmarsh, with characteristic but rare species more typical of the Mediterranean.	No change in extent.
Mediterranean and thermo-Atlantic halophilous scrubs.	The North Norfolk Coast, together with the Wash and North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes.	No change in extent.

Embryonic shifting dunes.	North Norfolk Coast in East Anglia is one of two sites representing embryonic shifting dunes in the east of England (the other being Winterton – Horsey Dunes). It is a long, thin dune system, displaying both progradation and erosion. The exceptional length and variety of the dune/beach interface is reflected in the high total area of embryonic dune (over 40 hectares or at least 14 per cent of the national total). The process of continued progradation is central to the conservation of this habitat type at this site.	No change in extent.
Shifting dunes along the shoreline with *Ammophila arenaria.*	Shifting dunes form a major component of the complex of often linear dune systems that make up the north Norfolk coast, which is representative of shifting dunes along the shoreline with *Ammophila arenaria* in East Anglia. The site supports over 100 hectares of shifting dune vegetation, eight of the estimated total area of this habitat type in Britain. The shifting dune vegetation is also varied, containing examples of all the main variants found in the southern part of the geographical range.	No change in extent.
Fixed dunes with herbaceous vegetation.	North Norfolk Coast on the east coast of England contains a large, active series of dunes on shingle barrier islands and spits and is little affected by development. The fixed dunes with herbaceous vegetation represents one of the principal variants of this vegetation type in the UK, as many of the swards are rich in lichens and drought-avoiding winter annuals such as common whitlowgrass *Erophila verna*, early forget-me-not *Myosotis ramosissima* and common corn salad *Valerianella locusta*.	No change in extent.
Humid dune slacks.	The slacks within this site are comparatively small and the Yorkshire-fog *Holcus lanatus* community predominates. The site represents humid dune slacks on the dry east coast of England and presents an extreme of the geographical range and ecological variation of the habitat within the UK. They are calcareous and complement the acidic dune slacks at Winterton – Horsey dunes, also in eastern England. The dune slack communities occur in association with swamp communities.	No change in extent

Dunes with *Hippophae rhamnoides*. **Not a primary reason for site selection.** Petalwort. **Not a primary reason for site selection.** Otter. **Not a primary reason for site selection.**	Grows in open, damp, calcareous dune slacks, often on low hummocks rather than on the very wet ground, on compacted sandy/muddy bryophyte-rich turf. Most localities are referable to Annex I type 2190 humid dune slacks. Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	No change in extent. Fish biomass stays within expected natural fluctuations. No reduction in overall availability of fresh water. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.
Potential effect of policies	SMP policies in PDZs 3Ai, 3Aii and 3Aiv will not lead to the 'squeeze' (loss) of any designated feature, nor will the HtL policy at Blakeney (PDZ3C). SMP policies will not therefore have an adverse effect on designated Annex I habitats.	
Preventative measures	**Mitigation**	**Implications for the integrity of the site** No adverse effect on site integrity.

North Norfolk Coast SPA

SPA site features	**Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 and 4.2**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Bittern	At least five per cent of the UK breeding population 1992 to 1997.	Maintain population within acceptable limits.
Marsh harrier	6.4 per cent of the Great Britain breeding population at 1992 to 1997.	Maintain population within acceptable limits.
Avocet	30 per cent of the Great Britain breeding population count, as at late 1980s.	Maintain population within acceptable limits.
Little tern	At least 13.8 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits.
Mediterranean gull	Two pairs representing at least 20.0 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Roseate tern	Two pairs representing at least 3.3 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Common tern	At least 3.7 per cent of the Great Britain breeding population count 1996.	Maintain population within acceptable limits.
Sandwich tern	26.4 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits
Redshank	700 pairs representing at least 1.2 per cent of the breeding eastern Atlantic – wintering population.	Maintain population within acceptable limits.
Ringed plover	220 pairs representing at least 1.4 per cent of the breeding Europe/ northern Africa – wintering population.	Maintain population within acceptable limits.
Wigeon	1.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pink-footed goose	10.6 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Brent goose	3.8 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Knot	3.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pintail	1,139 individuals representing at least 1.9 per cent of the wintering north-western Europe population.	Maintain population within acceptable limits.

Bar-tailed godwit	1,236 individuals representing at least 2.3 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Golden plover	2,667 individuals representing at least 1.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Hen harrier	16 individuals representing at least 2.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Ruff	54 individuals representing at least 7.7 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Potential effect of policies	The HtL policies (PDZs 3Ai, 3Aii, 3Aiv and 3C) are likely to lead to the loss of intertidal habitat. As this squeeze occurs against higher ground, this is not considered to represent an adverse effect.	
Preventative measures	**Mitigation** The effects of loss of intertidal habitat are considered to be offset through realignments elsewhere in the SMP area (mainly the realignment in PDZ3Aiii at Blakeney Freshes in SF 3b).	**Implications for the integrity of the site** Policies in PDZ3Ai,3Aii, 3Aiv and 3C have the potential to have adverse effects on SPA features. However, due to managed realignments elsewhere in the SMP area, this is not considered an adverse effect on site integrity.

North Norfolk Ramsar site

Ramsar site features	**Ramsar criterion 6. Species/populations occurring at levels of international importance**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal habitat	It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Red Data Book species	Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.	Maintain populations within acceptable limits.
Assemblages of international importance	98,462 waterfowl in winter.	Maintain assemblage size within acceptable limits.
Sandwich tern	275 apparently occupied nests, representing an average of 7.7 per cent of the breeding population.	Maintain population within acceptable limits.
Common tern	408 apparently occupied nests, representing an average of four per cent of the GB population.	Maintain population within acceptable limits.
Little tern	291 apparently occupied nests, representing an average of 2.5 per cent of the breeding population.	Maintain population within acceptable limits.
Knot	30,781 individuals, representing an average of 6.8 per cent of the population.	Maintain population within acceptable limits.
Pink-footed goose	16,787 individuals, representing an average of 6.9 per cent of the population.	Maintain population within acceptable limits.
Dark-bellied Brent goose	8,690 individuals, representing an average of four per cent of the population.	Maintain population within acceptable limits.
Wigeon	17,940 individuals, representing an average of 1.1 per cent of the population.	Maintain population within acceptable limits.

Pintail	1,148 individuals, representing an average of 1.9 per cent of the population.	Maintain population within acceptable limits.
Potential effect of policies	The HtL policies in PDZs 3Ai, 3Aii, 3Aiv and 3C are likely to lead to the loss of intertidal habitat through squeeze. This is considered natural change as it occurs against higher ground.	
Preventative measures	**Mitigation** The effects of loss of intertidal habitat are considered to be offset through realignments elsewhere in the SMP area (mainly the realignment in PDZ3Aiii at Blakeney Freshes in SF 3b).	**Implications for the integrity of the site** Policies in PDZs 3Ai, 3Aiv and 3C have the potential to have adverse effects on Ramsar features. However, the effect (loss of saltmarsh) is offset through mitigation by creating intertidal habitat elsewhere in the SMP area.

The Wash and North Norfolk Coast SAC

SAC site features	Multiple Annexe I and Annexe II habitats	
Sub feature(s)	**Sensitivity**	**Conservation target**
All habitats.	Threat from coastal squeeze as a result of land claim and coastal defence works as well as sea level rise and storm surges. Changes in sediment budget also threaten these habitats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Sandbanks that are slightly covered by seawater all the time - sandy sediments occupy most of the subtidal area.	Sandbanks support sub-littoral communities such as large dense beds of brittle-stars. Species include the sand-mason worm and the tellin. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. Sub-tidal sandbanks provide important nursery grounds for young commercial fish species including plaice, cod and sole.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mudflats and sandflats not covered by sea water at low tide - sandy intertidal flats predominate with some soft mudflats in the areas sheltered by barrier beaches and islands.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Large shallow inlets and bays - the Wash is the largest embayment in the UK.	Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Sub-littoral communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittle-star beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

	common seal *Phoca vitulina*.	
Reefs - *Sabellaria spinulosa* forms areas of biogenic reef in the Wash. This is the only currently-known location of well-developed stable *Sabellaria spinulosa* in the UK.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Byelaws developed to close areas of identified reef to protect it from trawling and dredging activities.
Salicornia and other annuals colonising mud and sand. The largest single area of this vegetation in the UK occurs at this site.	The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, salt meadow and halophytic scrub communities.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Atlantic sea meadows (*Glauco-Puccinellietalia maritimae*). The Wash saltmarshes represent the largest single area of the habitat type in the UK.	Saltmarsh swards dominated by sea-lavenders *Limonium* spp. are particularly well-represented on this site. As well as typical lower and middle saltmarsh communities, in north Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). The Wash and North Norfolk Coast, with the North Norfolk Coast, comprises the only area in UK where all the more typically Mediterranean species that	The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes, and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast perennial glasswort *Sarcocornia perennis* forms an	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

characterise this habitat occur together.	open mosaic with other species at the lower limit of the sea purslane community.	
Coastal lagoons. **Not a primary reason for site selection.**		Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Common seal *Phoca vitulina.* This site is the largest colony of common seals in the UK, with some seven per cent of the total UK population.	The extensive intertidal flats here and on the North Norfolk Coast provide ideal conditions for common seal *Phoca vitulina* breeding and hauling-out.	To continue to improve water quality, minimise human disturbance and maintain present diversity. On this site favourable condition requires the maintenance of the population of each designated species or assemblage. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population or assemblage.
Otter *Lutra lutra.* **Not a primary reason for site selection.**	Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	Fish biomass stays within expected natural fluctuations. No reduction in overall availability of fresh water. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.

Potential effect of policies	The HtL policies (PDZs 3Ai, 3Aii, 3Aiv and 3C) have the potential to lead to the loss of intertidal habitat. However, the effect (loss of saltmarsh) is offset through mitigation by creating intertidal habitat elsewhere in the SMP area. It is therefore considered that this loss would not have an adverse effect on the integrity of the site. The NAI policy in PDZ3B does not remove management with the potential for impacts on the site and is not therefore considered an adverse effect.	
Preventative measures	**Mitigation** Re-creation of saltmarsh and mudflat habitat through MR policies at PDZ 3Aiii (Blakeney Freshes) (assessed in SF3b) will offset loss through squeeze elsewhere.	**Implications for the integrity of the site** Only policies in PDZs 3Ai, 3Aii, 3Aiv and 3C have the potential to have an adverse effect on SAC features. However, the effect (loss of saltmarsh) is offset through mitigation by creating intertidal habitat elsewhere in the SMP area.

Assessment units SF3b

North Norfolk Coast SAC

SAC site feature	**Multiple Annexe I and Annexe II habitats**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal lagoons.	This site encompasses a number of small percolation lagoons on the east coast of England. Together with Orfordness - Shingle Street and Benacre to Easton Bavents, it forms a significant part of the percolation lagoon resource concentrated in this part of the UK. The most notable of the lagoons at this site is Blakeney Spit Pools, a lagoon system of six small pools between a shingle ridge and saltmarsh. The bottom of each pool is shingle overlain by soft mud. The fauna of the lagoons includes a nationally rare species, the lagoonal mysid shrimp (*Paramysis nouveli*).	No decrease in area from an established baseline, subject to natural change At least 60 per cent of the basin filled with water at all states of the tide and all year.
Perennial vegetation of stony banks.	Perennial vegetation of stony banks occurs at Blakeney Point, a shingle spit on the east coast of England with a series of recurves partly covered by sand dunes. This extensive site has a typical sequence of shingle vegetation, which includes open communities of pioneer species on the exposed ridge and more continuous grassland communities on the more sheltered shingle recurves. It also includes some of the best examples of transitions between shingle and saltmarsh, with characteristic but rare species more typical of the Mediterranean.	No change in extent.
Mediterranean and thermo-Atlantic halophilous scrubs.	The North Norfolk Coast, together with the Wash and North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes.	No change in extent.

Embryonic shifting dunes.	North Norfolk Coast in East Anglia is one of two sites representing embryonic shifting dunes in the east of England (the other being Winterton – Horsey dunes). It is a long, thin dune system, displaying both progradation and erosion. The exceptional length and variety of the dune/beach interface is reflected in the high total area of embryonic dune (over 40 hectares or at least 14 per cent of the national total). The process of continued progradation is central to the conservation of this habitat type at this site.	No change in extent.
Shifting dunes along the shoreline with *Ammophila arenaria.*	Shifting dunes form a major component of the complex of often linear dune systems that make up the north Norfolk coast. It is representative of shifting dunes along the shoreline with *Ammophila arenaria* in East Anglia. The site supports over 100 hectares of shifting dune vegetation, eight per cent of the estimated total area of this habitat type in Britain. The shifting dune vegetation is also varied, containing examples of all the main variants found in the southern part of the geographical range.	No change in extent.
Fixed dunes with herbaceous vegetation.	North Norfolk Coast on the east coast of England contains a large, active series of dunes on shingle barrier islands and spits and is little affected by development. The fixed dunes with herbaceous vegetation represents one of the principal variants of this vegetation type in the UK, as many of the swards are rich in lichens and drought-avoiding winter annuals such as common whitlowgrass *Erophila verna*, early forget-me-not *Myosotis ramosissima* and common corn salad *Valerianella locusta*.	No change in extent.
Humid dune slacks.	The slacks within this site are comparatively small and the Yorkshire fog *Holcus lanatus* community predominates. The site represents humid dune slacks on the dry east coast of England and presents an extreme of the geographical range and ecological variation of the habitat within the UK. They are calcareous and complement the acidic dune slacks at Winterton – Horsey dunes, also in eastern England. The dune slack communities occur in association with swamp communities.	No change in extent.

Dunes with *Hippophae rhamnoides*. **Not a primary reason for site selection.** Petalwort. **Not a primary reason for site selection.** Otter. **Not a primary reason for site selection.**	Grows in open, damp, calcareous dune slacks, often on low hummocks rather than on the very wet ground, on compacted sandy/muddy bryophyte-rich turf. Most localities are referable to Annex I type 2190 humid dune slacks. Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	No change in extent. Fish biomass stays within expected natural fluctuations. No reduction in overall availability of fresh water. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.
Potential effect of policies	The key issues here relate to the effect of managed realignment at Cley marshes. No loss of SAC features is expected and the realignment would allow a more natural evolution of the shingle ridge and may lead to the creation of saline lagoons (a designated habitat). The policy promotes the natural development of the system and no adverse effect is anticipated.	
Preventative measures	**Mitigation**	**Implications for the integrity of the site** No adverse effect on site integrity.

North Norfolk Coast SPA

SPA site features	**Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 and 4.2**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Bittern	At least five per cent of the UK breeding population 1992 to 1997.	Maintain population within acceptable limits.
Marsh harrier	6.4 per cent of the Great Britain breeding population 1992 to 1997.	Maintain population within acceptable limits
Avocet	30 per cent of the Great Britain breeding population count - late 1980s.	Maintain population within acceptable limits.
Little tern	At least 13.8 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits.
Mediterranean gull	Two pairs representing at least 20.0 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Roseate tern	Two pairs representing at least 3.3 per cent of the breeding population in Great Britain.	Maintain population within acceptable limits.
Common tern	At least 3.7 per cent of the Great Britain breeding population count 1996.	Maintain population within acceptable limits
Sandwich tern	26.4 per cent of the Great Britain breeding population 1992 to 1996.	Maintain population within acceptable limits.
Redshank	700 pairs representing at least 1.2 per cent of the breeding eastern Atlantic – wintering population.	Maintain population within acceptable limits.
Ringed plover	220 pairs representing at least 1.4 per cent of the breeding Europe/ northern Africa – wintering population.	Maintain population within acceptable limits.
Wigeon	1.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pink-footed goose	10.6 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Brent goose	3.8 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Knot	3.1 per cent of the population 1991/92 to 1995/96.	Maintain population within acceptable limits.
Pintail	1,139 individuals representing at least 1.9 per cent of the wintering north western Europe population.	Maintain population within acceptable limits.
Bar-tailed godwit	1,236 individuals representing at least 2.3 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.

Golden plover	2,667 individuals representing at least 1.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Hen harrier	16 individuals representing at least 2.1 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Ruff	54 individuals representing at least 7.7 per cent of the wintering population in Great Britain.	Maintain population within acceptable limits.
Potential effect of policies	The key issue here is the loss of freshwater grazing marsh, reedbed and open water habitats by MR policies in PDZs 3Aiii and 3Av (Blakeney Freshes and Cley marshes). This has the potential to affect various SPA species. Bittern are highly dependent on freshwater habitat to support prey species, while they need reedbed as breeding habitat. Marsh harrier use coastal and freshwater / terrestrial habitat as feeding areas, while they also need reedbed as breeding habitat. Wigeon, pink-footed geese and dark-bellied Brent geese may also be adversely affected by the loss of grazing marsh and terrestrial habitat.	
Preventative measures	**Mitigation**	**Implications for the integrity of the site**
		The loss of habitat for prey species will have an adverse effect on the bittern population of the North Norfolk Coast SPA. A determination of no adverse effect on site integrity cannot therefore be concluded for SMP policies in this assessment unit. Compensation to provide reedbed habitat for bittern is being provided under the Appropriate Assessment for a previous scheme at Cley. It is anticipated that the process allied to that scheme will offer the compensatory measures for the SMP (which is a commitment to the management outlined in the previous scheme). A process to reconcile the compensation for the SMP and the compensation for the scheme will need to be provided to avoid duplication and to ensure that appropriate compensation is actually delivered.

North Norfolk Ramsar site

Ramsar site features	**Ramsar criterion 6. Species/populations occurring at levels of international importance**	
Sub feature(s)	**Sensitivity**	**Conservation target**
Coastal habitat	It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Red Data Book species	Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.	Maintain populations within acceptable limits.
Assemblages of international importance	98,462 waterfowl in winter.	Maintain assemblage size within acceptable limits.
Sandwich tern	275 apparently occupied nests, representing an average of 7.7 per cent of the breeding population.	Maintain population within acceptable limits.
Common tern	408 apparently occupied nests, representing an average of four per cent of the GB population.	Maintain population within acceptable limits.
Little tern	291 apparently occupied nests, representing an average of 2.5 per cent of the breeding population.	Maintain population within acceptable limits.
Knot	30,781 individuals, representing an average of 6.8 per cent of the population.	Maintain population within acceptable limits.
Pink-footed goose	16,787 individuals, representing an average of 6.9 per cent of the population.	Maintain population within acceptable limits.
Dark-bellied Brent goose	8,690 individuals, representing an average of four per cent of the population.	Maintain population within acceptable limits.
Wigeon	17,940 individuals, representing an average of 1.1 per cent of the population.	Maintain population within acceptable limits.

Pintail	1,148 individuals, representing an average of 1.9 per cent of the population.	Maintain population within acceptable limits.
Potential effect of policies	Coastal habitat is likely to be affected by squeeze in PDZs 3Aiii and 3Av, due to the realignments not occurring until epochs 2 and 3 respectively. Ramsar-cited bird species are also likely to be affected by proposed SMP policies, especially the geese species. Wigeon, pink-footed geese and dark-bellied Brent geese use the surrounding terrestrial habitats for foraging and are therefore likely to be adversely affected by the proposed realignments. Red Data Book species are also likely to be affected.	
Preventative measures	**Mitigation**	**Implications for the integrity of the site**
		A determination of no adverse effect cannot be concluded with certainty, due to potential effects on coastal habitats, Red Data Book species and geese species. The adverse effects relate to the loss of grazing marsh through squeeze. Compensation will therefore need to be provided based on an evaluation of the measures required for the SMP and the previous scheme on this site. The intent will be to ensure that the compensation required (or agreed) for the scheme adequately provides for the compensation required for the SMP.

The Wash and North Norfolk Coast SAC

SAC site features	Multiple Annexe I & Annexe II habitats	
Sub feature(s)	**Sensitivity**	**Conservation target**
All habitats.	Threat from coastal squeeze as a result of land claim and coastal defence works as well as sea level rise and storm surges. Changes in sediment budget also threaten these habitats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Sandbanks that are slightly covered by sea water all the time - sandy sediments occupy most of the sub-tidal area.	Sandbanks support sub-littoral communities such as large dense beds of brittle-stars. Species include the sand-mason worm and the tellin. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. Sub-tidal sandbanks provide important nursery grounds for young commercial fish species including plaice, cod and sole.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mudflats and sandflats not covered by sea water at low tide - sandy intertidal flats predominate with some soft mudflats in the areas sheltered by barrier beaches and islands.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Large shallow inlets and bays. The Wash is the largest embayment in the UK.	Communities in the intertidal include those characterised by large numbers of polychaetes, bivalves and crustaceans. Sub-littoral communities cover a diverse range from the shallow to the deeper parts of the embayment and include dense brittle-star beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and common seal *Phoca vitulina*.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Reefs - *Sabellaria spinulosa* forms areas of biogenic reef in the Wash. This is the only currently-known location of well-developed stable *Sabellaria spinulosa* in the UK.	These mudflats provide habitats for large numbers of polychaetes, bivalves and crustaceans. Smaller, sheltered and diverse areas of intertidal sediment with a rich variety of communities including some eelgrass beds and large shallow pools are protected by the north Norfolk barrier islands and sand spits.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC. Byelaws developed to close areas of identified reef to protect it from trawling and dredging activities.
Salicornia and other annuals colonising mud and sand. The largest single area of this vegetation in the UK occurs at this site.	The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, saltmeadow and halophytic scrub communities.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Atlantic sea meadows (*Glauco-Puccinellietalia maritimae*). The Wash saltmarshes represent the largest single area of the habitat type in the UK.	Saltmarsh swards dominated by sea lavenders *Limonium* species are particularly well-represented on this site. As well as typical lower and middle saltmarsh communities, in north Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). The Wash and north Norfolk coast, with the north Norfolk coast, comprises the only area in UK where all the more typically Mediterranean species that characterise this habitat occur together.	The vegetation is dominated by a shrubby cover up to 40 centimetres high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes, and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea purslane community.	Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.

Coastal lagoons. **Not a primary reason for site selection**		Activities affecting sediment budget and man-made causes of coastal squeeze will be addressed through the management scheme being developed jointly for the SPA and SAC.
Common seal *Phoca vitulina.* This site is the largest colony of common seals in the UK, with some seven per cent of the total UK population.	The extensive intertidal flats here and on the north Norfolk coast provide ideal conditions for common seal *Phoca vitulina* breeding and hauling-out.	To continue to improve water quality, minimise human disturbance and maintain present diversity. On this site favourable condition requires the maintenance of the population of each designated species or assemblage. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population or assemblage.
Otter *Lutra lutra.* **Not a primary reason for site selection.**	Sensitive to reductions in water quality. Otters are sensitive to disturbance, although less so when the habitat is good. Removal of habitat such as reedbeds, woodland close to rivers, carr and individual riverside trees deprive otters of 'lying up' sites and foraging ground, as does reduction in tree and shrub regeneration by overgrazing of riverside pasture. Industrial contaminants and agricultural chemicals that lead to reductions in water quality also pose a threat.	Fish biomass stays within expected natural fluctuations. No reduction in overall availability of fresh water. No increase in pollutants potentially toxic to otters. No decline in otter distribution or abundance. Otter populations not significantly affected by human-induced kills.
Potential effect of policies	The issue here is that the HtL policies in epoch 1 may result in the squeeze of intertidal habitat such as *Salicornia* and other annuals colonising mud and sand and Atlantic sea meadows in PDZs 3Aiii and 3Av in epochs 1 and 2. The proposed realignments in PDZ3Aii will lead to a conversion to intertidal habitat, mainly saltmarsh and mudflat, potentially mitigating that lost from the HtL policies described above.	

Preventative measures	**Mitigation** Any loss of intertidal habitat through HtL policies will be offset by creating intertidal habitat through MR in this assessment unit and across the SMP as a whole.	**Implications for the integrity of the site** No adverse effect on integrity of the site.