



**Appendix M**  
**Essex and South Suffolk Shoreline Management**  
**Plan (SMP) 2**  
Habitats Regulations Assessment Report

Essex and South Suffolk Shoreline Management  
Plan Client Steering Group (CSG)

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# 1 INTRODUCTION

## 1.1 Habitats Regulations Assessment

The requirement for a Habitats Regulations Assessment (HRA) arises under the provisions of the EC Habitats Directive (92/43/EEC) and its implementation in the UK under The Conservation of Habitats and Species Regulations 2010 (the 'Habitats Regulations'). Under Regulation 21 of the Habitats Regulations, an Appropriate Assessment (part of the HRA process) is required for a plan or project, which either alone or in combination with other plans or projects, is likely to have a significant effect on a European site (Special Areas of Conservation (SAC) or Special Protection Areas (SPA))<sup>1</sup> and is not directly connected with or necessary for the management of the site. UK Government policy (ODPM Circular 06/05) requires that 'Ramsar sites', designated under the Ramsar Convention (The Convention on Wetlands of International Importance especially as Waterfowl Habitat) are subject to the same provisions. Also, all sites in the process of being designated (candidate or possible sites) are to be considered in the same way as fully designated sites, as are Sites of Community Importance (SCIs) which are sites that have been adopted by the European Commission but not yet formally designated by the government of each country. The term 'international site' is used throughout this report to refer to all of these designated sites (SAC, SPA, pSPA, cSAC, SCI and Ramsar).

HRA, and specifically the 'Appropriate Assessment' stage, is the process to support a decision by the 'Competent Authority', as to whether a proposed plan or project would have an adverse effect on the integrity of an International site. The phrase "the integrity of the site" is not defined in the Habitats Directive or the Habitats Regulations; it is defined by ODPM (2005) which states that it is taken to mean "the coherence of the site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified". An adverse effect on integrity (AEOI) is likely to be one that prevents a site from maintaining the same contribution to favourable conservation status of the qualifying feature(s) for which it was designated.

The assessment of effects on International sites applies a reverse burden of proof - if any doubt exists as to the effect of policy, then 'no adverse effect on integrity' (NAEOI) cannot be concluded. As such, only those sites for which it can be ascertained there will be NAEOI (taking into account mitigation measures incorporated or delivered by the plan) can be assessed as 'passing' the Appropriate Assessment test. Where it is not possible to determine that a plan or project under consideration will not have an adverse effect on the integrity of an International site, then alternative solutions which avoid adverse effect to site integrity must be sought. If alternatives are not feasible then 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 then compensatory measures to offset damage/loss caused by a plan or project and to maintain the overall

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<sup>1</sup> Special Areas of Conservation (SAC, or candidate Special Area of Conservation (cSAC)), designated under the Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) and Special Protection Areas (SPA) designated under the Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds) form part of the EU-wide Natura 2000 network. These definitions encompass European sites below the high tide mark (whether SPA or SAC) which, following the Marine and Coastal Access Act 2009, are referred to as European Marine Sites.

coherence of the Natura 2000 network (and functioning of the Ramsar sites) must be secured and ecologically functional in advance of this damage/loss.

The favourable condition of a site's feature(s) and integrity of the site are monitored against the site's conservation objectives and it is against these objectives that the effects of the plan or project should be assessed. Conservation objectives set out the physical, chemical and biological thresholds, and limits of anthropogenic activity and disturbance, which must be met to maintain 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 which may affect the site. Conservation objectives for European Marine Sites are set out in the relevant 'Regulation 35' documents (required by Regulation 35 of the Habitats Regulations) for each site. For sites in England these are the responsibility of Natural England.

A requirement of the Shoreline Management Plan (SMP) 2 process as stipulated in "The Assessment of Regional Spatial Strategies under the Provisions of the Habitats Regulations – Draft Guidance" (English Nature, 2006) has been consultation with Natural England regarding the potential impacts of preferred SMP2 policies on International sites within or adjacent to the SMP2 Management Units (MU). Natural England has been involved throughout the development of the SMP.

## **1.2 Shoreline Management Plans (SMPs)**

### **1.2.1 SMP aims and objectives**

A 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 which reflect both national and local priorities (Defra, 2006):

- To reduce the threat of flooding and erosion to people and their property; and
- To 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 was produced for the coastline of England and Wales in the late 1990s, based on sediment cell boundaries which related to the movement of sand and shingle along the coast. In most cases, the boundaries of these cells are set at locations where the net 'along shore' movement of sand and shingle changes direction. The current program of SMPs reflects the availability of new coastal processes information, new considerations (including site designations) and reduced uncertainty about climate change.

The objectives of a SMP2 must be in line with the Government's strategy for managing risks from floods 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 SMP2 area;
- Identify opportunities to maintain and improve the environment by managing the risks from floods and coastal erosion;
- Identify the preferred policies for managing risks from floods 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; and
- Meet international and national nature conservation legislation and aim to achieve United Kingdom Biodiversity Action Plan (UKBAP) 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 SMP2 development**

SMP2 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), to improve or maintain the standard of protection provided by the existing defence line. This policy should include 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)	Managed realignment by 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 active intervention, where there is no investment in coastal defences or operations.

Within the development of a SMP2, an epoch (time period) based approach is adopted. The three epochs considered for SMP2 are from the present day, medium-term and long-term and these correspond broadly to time periods of 2010 – 2025, 2025 – 2055 and 2055 – 2105.

### 1.2.2 Implications of SMP2 policy on the natural environment

Each of the SMP2 policies presented in **Table 1.1** has the potential to impact the natural environment in one or more ways, as presented in **Table 1.2**.

**Table 1.2 Potential generic implications of each SMP2 option**

<b>SMP2 option</b>	<b>Positive impacts</b>	<b>Negative impacts</b>
Hold the line (HtL)	<ul style="list-style-type: none"> <li>• Protection of habitat landward of defences; and</li> <li>• Provides stability to areas of coastline, within a wider management context.</li> </ul>	<ul style="list-style-type: none"> <li>• Coastal squeeze (loss of habitat); and</li> <li>• Interruption of coastal processes.</li> </ul>
Advance the line (AtL)	<ul style="list-style-type: none"> <li>• Protection of habitat landward of defences.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in extent of coastal habitat;</li> <li>• Change in functionality of habitat;</li> <li>• Increased coastal squeeze;</li> <li>• Interruption of coastal processes;</li> <li>• Effect on marine habitat; and</li> <li>• May increase rate of coastal erosion either side of the advanced line.</li> </ul>
Managed realignment (MR)	<ul style="list-style-type: none"> <li>• Coastal habitats allowed to move landwards under rising sea levels;</li> <li>• Habitat created for juvenile fish and other aquatic organisms (benefits to environment and fishing communities);</li> <li>• Promotes natural coastal processes;</li> <li>• Contributes towards a more natural management of the coast; and</li> <li>• Creation of high tide roosts and feeding areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in extent of habitat landwards of defences; and</li> <li>• Change in nature of habitat landward of defence.</li> </ul>
No active intervention (NAI)	<ul style="list-style-type: none"> <li>• Coastal habitats allowed to move landwards under rising sea levels;</li> <li>• Promotes natural coastal processes; and</li> <li>• Contributes towards a more natural management of the coast.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased risk of inundation to landward habitats under rising sea levels.</li> </ul>

### 1.3 Guidance for the assessment of SMP2s

The Department for Communities and Local Government (DCLG) has produced guidance on how to determine the need for HRA and the provision of an assessment if one is considered to be required. Additionally, Natural England has provided an internal draft document relating to the assessment of Regional Spatial Strategies (RSS) and Sub-Regional Strategies. More specific guidance on assessing SMP2s in terms of the Habitats Regulations is available from the EA. 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 comprehensive source of guidance relating to the provision of HRA for SMP2s.

Although these documents mainly relate to land use plans, and despite recently announced plans to abolish the RSSs, there are clear parallels with their approach because SMPs have the potential to influence development. As such, their guidance has been applied in this report. In 2006, Royal Haskoning provided Defra with a guidance note relating to Appropriate Assessment provision for SMP2s, following the completion of an Appropriate Assessment for the River Tyne to Flamborough Head SMP2. This guidance was a fundamental consideration in establishing the scope of the Appropriate Assessment for the Essex and South Suffolk SMP2. The approach and methodology adopted here is compliant with these guidance documents.

The assessment is also structured in regard to the developing suite of guidance which is pertinent to the provision of HRA and to SMP2 production. Other key 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; and
- Assessing Projects under the Habitats Directive – A Guide for Competent Authorities (Tyldesley & Hoskin, 2008).

HRA (and in particular the Appropriate Assessment stage) is a mechanism to establish the actual scale and implications of impacts and to provide a determination on whether a course of action is acceptable or unacceptable, in terms of its impacts on the integrity of International sites.

#### **1.4 Identification of Competent Authority for the SMP2**

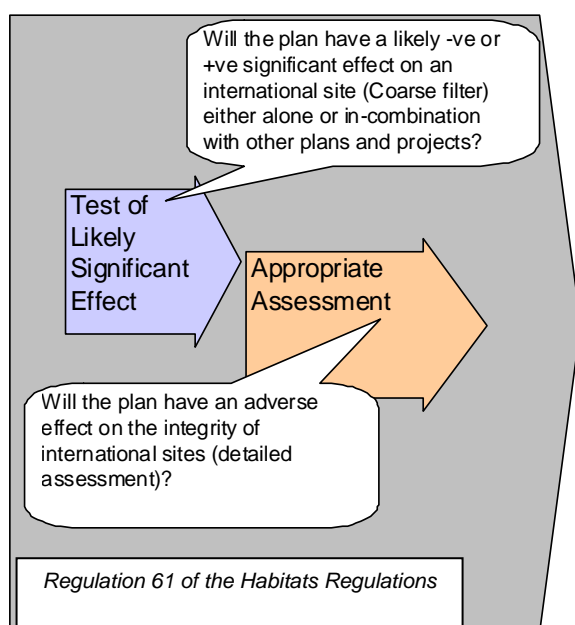
One of the first steps in addressing SMPs under the Habitats Regulations is identification of the Competent Authority. In this instance, Royal Haskoning has undertaken the technical analysis which forms the basis of the assessment, but the ultimate responsibility for sign off, and ensuring compliance with the Habitats Regulations, falls to the Competent Authority.

**For the purposes of this assessment, and following discussion early in the HRA process, the Environment Agency has assumed the role of (lead) Competent Authority.**

## 1.5 Requirement for an HRA for SMP2

Due to the integrated nature of the SMP2 process, the opportunity to develop the Essex and South Suffolk SMP2 in accordance with the Habitats Regulations at a policy level has allowed the selection of policy based on likely significant effects to International sites. However, the requirement to have regard to effects on designated habitat is only one of a number of drivers which shape the policy of the SMP2, with other factors including impacts on agriculture, tourism and the local economy.

The potential therefore exists for a preferred policy to emerge which may have an adverse effect on the integrity of an International site. The Habitats Regulations require that if any plan or project, either alone or in combination with other plans or policies, is considered to have a **likely or potential significant effect** (either positive or negative) on an International site the Appropriate Assessment stage must be completed.



### 1.5.1 The test of likely significant effect (LSE)

The determination of whether the Essex and South Suffolk SMP2 would have a likely significant effect (LSE) is a coarse filter approach, taken to establish likely effects of the SMP2 in relation to the sensitivity of the features on International sites and their conservation objectives (collectively, the integrity of the site). It is important to remember that the question here relates to either positive or negative effects, and relate to the plan as a whole and not to individual policies. This can be addressed through a series of structured questions:

**Q. Does the Essex and South Suffolk coast and coastal hinterland contain any sites designated under the Ramsar convention or Habitats or Birds Directives (International sites)?**

A. The Essex and South Suffolk coast contains a wide variety of coastal, freshwater and estuarine sites (as outlined in **Section 3** of this report, and illustrated on **Figure 3.1**).

**Q. What are the sensitivities of the International sites?**

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

**Freshwater sites** are found in numerous locations on the Essex and South Suffolk coast located to the rear of existing natural or man made defences. Shifts in coastal form may lead to inundation of these sites and the loss of features due to increased salinisation or wave action.

**Coastal sites** such as intertidal habitat (saltmarsh and mudflat) on the open coast are dependent on geomorphological and hydrological processes. Many such sites have been 'managed' in the past to maintain their physical structure. The effects of sea level rise and changes to coastal processes through defence or the removal of defence have the potential to alter the function and form of such habitat.

**Estuarine sites** have typically evolved in response to human habitation, with key habitats occurring in the middle and lower reaches of the tidal estuary adjacent to estuary mouths. These are often constrained by settlement, with changes to coastal defence or coastal processes, as well as sea level rise, having the potential to lead to changes in habitat composition or loss through coastal squeeze.

**Q. Does the SMP2 have the potential to affect (either positively or negatively) the integrity of International sites?**

A. The SMP2 has four policy options, which have the potential to lead to changes in the movement of sediment along the coast, levels of inundation and management regimes. Collectively, the SMP2 has the potential to alter the structure and function of the Essex and South Suffolk coast, with previously freshwater sites becoming saline through policies of managed realignment or the removal of management. Additionally, the SMP2 may continue to hold the line along extensive areas of coast which has the potential to lead to coastal squeeze in response to sea level rise.

**Q. Is the SMP2 likely to have a significant effect on features of the International sites on the Essex and South Suffolk Coast?**

A. Given that there are features of all of the International sites of Essex and South Suffolk which may be affected by matters which the SMP2 addresses, it cannot be ruled out that there will be a likely significant effect. This effect may be positive or negative as SMP2 policy responds to Habitats Regulations or other drivers. **It therefore follows that an appropriate assessment is required for the Essex and South Suffolk SMP2.** The scope of this assessment is described further below.

## 2 METHODOLOGY

### 2.1 Development of assessment areas

SMP2 policy has been developed with a consideration of the environmental, social and economic features on the coast and of the coastal processes and systems which shape the coast. Each Management Unit (MU) has been defined to offer the most appropriate spatial breakdown of the coast, where processes can be managed (as appropriate) at a scale which is driven by wider management objectives. MUs have been derived from the Policy Units (PUs) defined in the Baseline Scenarios report (Royal Haskoning, 2009). A PU is defined as an area of coastline, or an estuary, which is geomorphologically discrete from other units (i.e. any geomorphological process occurring within that unit does not impact or occur across other policy units). Each policy unit may consist of an unspecified number of Policy Development Zones (PDZs). Therefore MU is the level at which the SMP2 'makes sense' in regard to the intent of management. Constituent PDZs are the mechanism to deliver the management intent of SMP2 policy. Management Units within the Essex and South Suffolk SMP2 are presented in **Figure 2.1**.

The HRA is undertaken at the MU level, in a manner analogous to the Strategic Environmental Assessment (SEA). Within each MU, policy has been considered at PDZ level to provide an effective understanding of the potential impact of each management policy on the identified internationally designated habitats and species. The effect of SMP2 policy within each PDZ has then been used to build an overview of the manner in which SMP2 policy affects the habitats and species within each MU. This enables the assessment to consider policy as an intent of management for areas of coast.

### 2.2 Assessment methodology

As described above, the methodology for this exercise has been developed in accordance with the guidance of Defra, DCLG and Natural England. Additionally, HRA methodologies devised for large scale developments have been evaluated to ensure that the approach provided is based on practical implementation of the Habitats Regulations. Equally, it ensures the methodology has been devised to ensure that the approach taken meets the requirements of the Habitats Regulations, resulting in a robust assessment which is appropriate for strategic policy documents of this type. The actual projects required to implement the chosen coastal management policies, will themselves be likely to require a HRA. It is not our intent to provide a level of detail which would duplicate a site-specific project assessment.

The process has been broken down into a series of clearly defined steps that provide a transparent and accountable assessment of the SMP2 policies. These steps are outlined below. A summary of the general methodology is illustrated in **Figure 2.2**, which shows the manner in which the overall assessment progresses and how key tasks relate to one another.

Figure 2.1 Management Units used in the development of policy for the Essex and South Suffolk SMP2

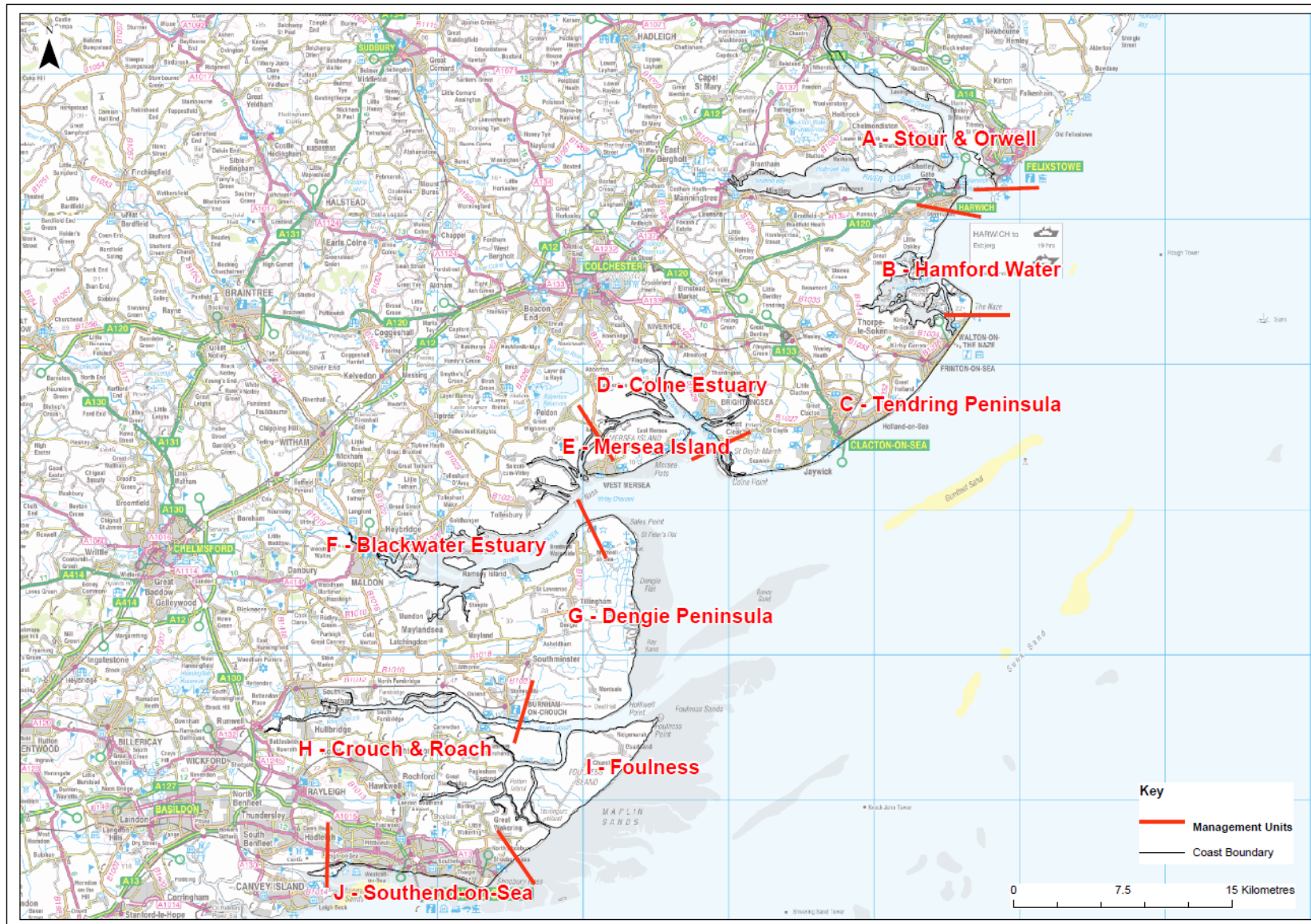
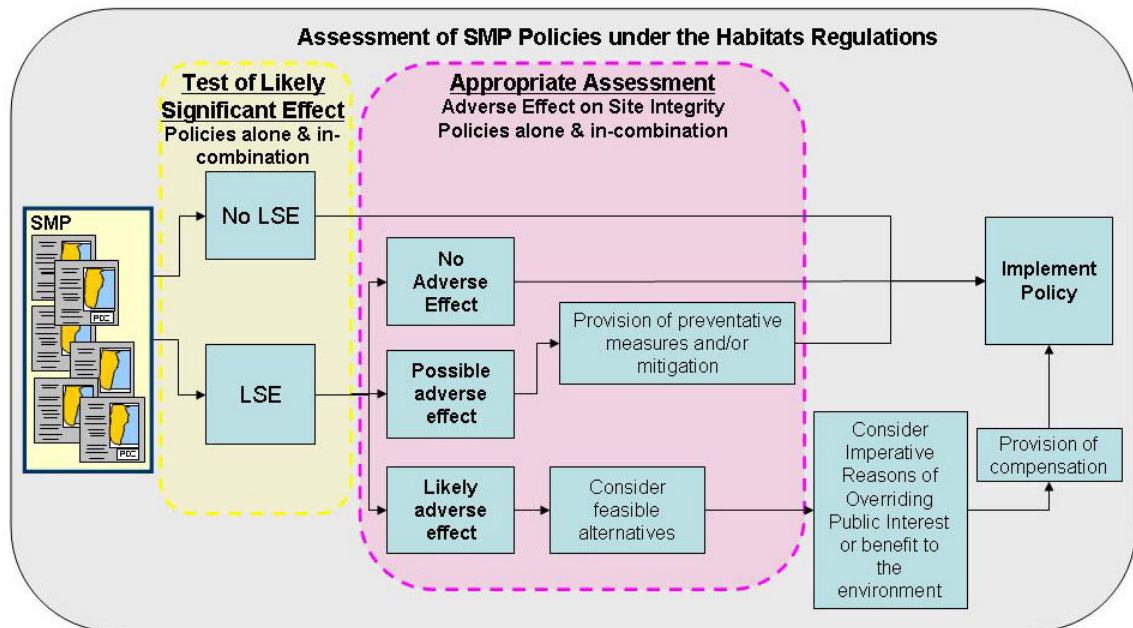




Figure 2.2 Habitats Regulations Assessment Methodology



### 2.3 Assessment of the SMP2 policies

The assessment of SMP2 policies has been supported by a tabulated account based on an adaptation of the favourable condition tables developed by Natural England for the Sites of Special Scientific Interest (SSSIs) which underpin the International sites' designations. These have been refined to relate solely to the features relevant to the International sites and not to features which are not covered by the Habitats or Birds Directives. These tables (**Annex I**) show the key features of the site, the attributes relevant to such features, the identified management targets for the site and known sensitivities or management issues. Each policy within the assessment has been evaluated and tabulated against each feature in regard to the potential impacts of the policy, any mitigation measures that could need to be taken and a commentary on the impacts of the policy on the site features and targets. On the basis of these, the assessment considers the overall impacts of each policy on the overall integrity of the International site, recorded at MU level, with policies for each MU assessed with regard to the possible impacts on the cited features of the International sites within that MU. If a policy may affect a neighbouring MU, this has been included in the assessment.

Although Ramsar features and sites do not have favourable condition tables, it should be stressed that conservation objectives set out in the Regulation 35 package have been produced to broadly protect the underlying habitat and environmental conditions required by Annex 1 habitats and Annex 2 species. Given the close correlation between Ramsar and European (SAC and SPA) features, the conservation objectives within the Regulation 35 package are generally sufficient to protect Ramsar features. Nonetheless, where Ramsar features need consideration 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 – i.e. 'subject to natural change to maintain in favourable condition the Ramsar features and their supporting habitats'.

The assessment tables within **Annex I** are underpinned by any ecological considerations, survey or analysis which supports the assessment process. For each MU, a commentary and determination has been provided to detail the likely impacts of the policies on each International site and illustrate the measures which could be taken to avoid any identified adverse effects. As above, the level of assessment is 'appropriate' to the level of SMP2 policy and recognises that further assessment will be provided at strategy and project level as policies are implemented. We do not seek to second guess the content and detail of subsequent schemes and strategies. This is in line with the European Court of Justice (ECJ) ruling which states that assessment of policy should be as rigorous as can reasonably be undertaken.

## 2.4 Assessment of impacts over different SMP2 epochs

Applying the Habitats Regulations at the policy level is further complicated by the different timescales (or epochs), over which the policies apply (broadly, 20 years, 50 years and 100 years). The possibility exists for SMP2s or individual policies to have short-term adverse impacts, but to enable site integrity to be maintained in the longer-term. On the basis of the assessment provided here however, no such issues have been identified.

## 2.5 Provision of an 'in combination' assessment

The 'in combination' assessment builds on the assessment of policy and the summary tables provided in the 'alone assessment' stage and considers the combined impacts for all SMP2 policies, other plans identified as being relevant to this assessment, and approved projects yet to be implemented. The specific focus of this stage relates to the consideration of those plans and projects which are likely to have the same effect as the policies of the SMP2 – which may have effects on coastal habitat or processes which support habitat or species. The plans and projects which are considered relevant to this study are discussed in **Section 6**. An assessment for each SMP2 Management Unit addresses the 'in combination' effects of other plans or projects.

The 'in combination' assessment has been summarised in regard to the overall conclusions which can be drawn to provide a clear summary for each MU. Through this, the impacts of the policies within the unit alone, and 'in combination' with other plans and projects is clearly expressed.

## 2.6 Consideration of preventative measures and mitigation

The assessment provides conclusions relating to policy (at the MU level) as follows:

- MUs in which policies are not considered to have an adverse effect on International sites;
- MUs where an adverse effect of policies cannot be ruled out depending on the details at scheme level or other avoidance measures; and
- MUs in which policies are considered to have an adverse effect on the integrity of sites.

This classification has been provided for effects that are either due to the policies within the MU alone, or in combination with other policy, plans or projects. For some MUs where an adverse effect cannot be discounted, mitigation measures (which may avoid or reduce impacts) have been provided (and integrated within the SMP2 Action Plan) which will ensure that actual effects are avoided at the implementation stage. Such measures are supplementary to SMP2 policy and focus its implementation to ensure that the integrity of International sites is protected.

## **2.7 Uncertainty within the assessment and compensatory habitat quantification**

*To be completed (early 2011) following receipt of new data from Natural England on saltmarsh losses within the Essex SMP area.*

## **2.8 Final SMP2 policy**

The final policies for the Essex and South Suffolk SMP2 are presented in **Tables 2.1 to 2.10** (for Management Units see **Figure 2.1**). Within the tables, the following abbreviations are used:

- HtL – Hold the Line;
- AtL – Advance the Line;
- MR1 – Managed Realignment – Allow local and limited intervention;
- MR2 – Managed Realignment - Breach of frontline defence after building landward defence; and
- NAI – No Active Intervention.

A plus sign (+) after the policy indicates that a preliminary cost benefit analysis has indicated that the current level of protection can be maintained into the future, even accounting for sea level rise. Absence of such a sign, however, does not necessarily indicate that it cannot. This is explained further in the main SMP2 document (in both **Section 3.3** and **Appendix H** to that document).

Where a policy has been changed following consultation on the draft SMP2, this is indicated by a bold boundary to the table cell.

**Table 2.1 Management Unit A (Stour and Orwell)**

Policy Development Zone		Policy Plan			Explanation
		Now – 2025	2025 – 2055	2055 – 2105	
A1	Felixstowe Port	AtL+	HtL+	HtL+	The currently ongoing expansion constitutes Advance the Line. The new line will then be held throughout all epochs to continue protection of Felixstowe Port. The standard of protection will be maintained or upgraded.
A2	Trimley Marsh	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to Felixstowe Port.
A3a	Loom Pit Lake	HtL	MR2	NAI	The current line will be held in epoch 1. In epoch 2, managed realignment by breach of the existing defence. No defence needed after that. The currently undefended section will remain undefended.
A3b	Levington Creek	HtL	HtL	HtL	The current line will be held throughout all epochs.
A4a	Northern Orwell east	MR1	MR1	MR1	Local intervention to limit erosion risk to features is acceptable if the impact on natural estuary evolution is minimised.
A4b	Northern Orwell west	NAI	NAI	NAI	No erosion expected, therefore no defences needed.
A5	Ipswich	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. Ipswich will remain protected. The standard of protection will be maintained or upgraded.
A6	Wherstead	MR1	MR1	MR1	Integrated plan for adaptation to be determined through partnership approach; may include local defences.
A7a	Southern Orwell west	NAI	NAI	NAI	No erosion expected, therefore no defences needed.
A7b	Southern Orwell east	MR1	MR1	MR1	Integrated plan for adaptation to be determined through partnership approach; may include local defences.
A8a	Shotley Marshes west	MR2	HtL	HtL	Managed realignment by breach of the existing defence while continuing flood defence to the Marina, all dwellings and roads. The new line will be held throughout epoch 2 and 3.

Policy Development Zone		Policy Plan			Explanation
		Now – 2025	2025 – 2055	2055 – 2105	
A8b	Shotley Marshes east	HtL	MR2	HtL	The current line will be held in epoch 1. In epoch 2, Managed realignment by breach of the existing defence while continuing flood defence to the Marina and all dwellings and roads. The new line will be held in epoch 3.
A8c	Shotley Gate	MR1	MR1	MR1	Integrated plan for adaptation to be determined through partnership approach; may include local defences.
A9a,d,f	Northern Stour – flood defence	HtL	HtL	HtL	The current line will be held throughout all epochs.
A9b	Northern Stour – not erosional	NAI	NAI	NAI	No erosion expected, therefore no defences needed.
A9c,e	Northern Stour – erosional	MR1	MR1	MR1	Local intervention to limit erosion risk to features is acceptable if the impact on natural estuary development is minimised.
A10a,c,e	Southern Stour – flood defence	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection at Manningtree will be maintained or upgraded.
A10b,g	Southern Stour – not erosional	NAI	NAI	NAI	No erosion expected, therefore no defences needed.
A10d,f	Southern Stour – erosional	MR1	MR1	MR1	Local intervention to limit erosion risk to features is acceptable if the impact on natural estuary development is minimised.
A11a	Harwich Harbour	AtL	HtL	HtL	The port expansion currently under consideration for Bathside Bay constitutes Advance the Line. The new line will then be held throughout all epochs to continue protection of Harwich Port.
A11b	Harwich town	HtL	HtL	HtL	The current line will be held throughout all epochs.

**Table 2.2 Management Unit B (Hamford Water)**

Policy Development Zone		Policy Plan			
		Now - 2025	2025 - 2055	2055 - 2105	Explanation
B1	South Dovercourt	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
B2	Little Oakley	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, communities, roads and infrastructure south of Dovercourt and to the sewage works. It is possible that the realignment would occur in epoch 1 as part of the Bathside Bay project.
B3	Oakley Creek to Kirby-le-Soken	HtL	HtL	HtL	The current line will be held throughout all epochs.
B3a	Horsey Island	HtL	HtL	MR2	The current line will be held throughout the two epochs. Managed realignment by breach of the existing defence while continuing flood defence to the south west half of the island to take place in epoch 3.
B4a	Kirby-le-Soken to Coles Creek	MR2	HtL	HtL	Managed realignment by breach of the existing defence while continuing flood defence to Kirby-le-Soken.
B4b	Coles Creek to the Martello Tower	HtL	HtL	HtL	The current line will be held throughout all epochs.
B5	Walton Channel	HtL+	HtL+	MR2+	The current line will be held throughout the two epochs. Managed realignment by breach of the existing defence while continuing flood defence to all dwellings, the sewage works and the caravan park. The standard of protection will be maintained or upgraded.
B6a	Naze Cliffs north	NAI	NAI	NAI	The shoreline will be allowed to develop naturally.
B6b	Naze Cliffs south	MR1	MR1	MR1	The erosion process will be slowed down and managed.

**Table 2.3 Management Unit C (Tendring Peninsula)**

Policy Development Zone		Policy Plan			
		Now - 2025	2025 - 2055	2055 - 2105	Explanation
C1	(Walton-on-the-Naze and Frinton-on-Sea)	HtL	HtL	HtL	The current line will be held throughout all epochs.
C2	Holland Haven	HtL+	HtL+	<b>MR2/HtL +</b>	<b>The current line will be held in epoch 1 and epoch 2. In epoch 3 there is a dual policy of either Managed realignment or Hold the line. In either case flood defence to the dwellings, roads and sewerage treatment works will be continued. The standard of protection will be maintained or upgraded.</b>
C3	Clacton-on-Sea	HtL	HtL	HtL	The current line will be held throughout all epochs.
C4	Seawick, Jaywick and St. Osyth Marsh	HtL	HtL	<b>MR2/HtL</b>	<b>The current line will be held in epoch 1 and 2. In epoch 3 there is a dual policy of either Managed realignment or Hold the line, depending on further work as part of the Local Development Framework.</b>

**Table 2.4 Management Unit D (Colne Estuary)**

Policy Development Zone		Policy Plan			
		Now – 2025	2025 - 2055	2055 – 2105	Explanation
D1a	Stone Point	HtL	HtL	HtL	The current line will be held throughout all epochs.
D1b	Point Clear to St Osyth Creek	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, roads and caravan park. The currently undefended section will remain undefended.
D2	Along the southern bank of Flag Creek	HtL	<b>HtL</b>	<b>MR2</b>	<b>The current line will be held in epoch 1 and 2. In epoch 3, Managed realignment by breach of the existing defence while continuing flood defence to the dwellings and road. Due to the environmental, landscape and historic importance of the area, future SMPs should review the feasibility and the implementation of the realignment policy for this PDZ.</b>
D3	Flag Creek to northern bank to Brightlingsea	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings and road.
D4	Brightlingsea	HtL	HtL	HtL	The current line will be held throughout all epochs.
D5	Westmarsh Point to where the frontage meets the B1029	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, the road and the freshwater habitats.
D6a	South of Wivenhoe	HtL	HtL	HtL	The current line will be held throughout all epochs.
D6b	B1029 to Wivenhoe	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence, while continuing flood defence to the railway line.
D7	Colne Barrier	HtL	HtL	HtL	The current line will be held throughout all epochs.
D8a	Inner Colne west bank	HtL	MR2	NAI	The current line will be held in epoch 1. Managed realignment by breach of the existing defence. No defence needed after that.
D8b	Fingringhoe and Langenhoe	HtL	HtL	HtL	The current line will be held throughout all epochs. The currently undefended sections will remain undefended.
D8c	Langenhoe Hall Marsh	HtL	HtL	HtL	The current line will be held throughout all epochs.

**Table 2.5 Management Unit E (Mersea Island)**

Policy Development Zone		Policy Plan			
		Now - 2025	2025 - 2055	2055 - 2105	Explanation
E1	Landward Frontage	HtL	HtL	HtL	The current line will be held throughout all epochs.
E2	Seaward frontage between North Barn and West Mersea	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, roads and sewage works.
E3	West Mersea	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The currently undefended sections will remain undefended. The standard of protection will be maintained or upgraded.
E4a	North Mersea (Strood Channel)	HtL+	MR2+	HtL+	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings and roads. The standard of protection will be maintained or upgraded.
E4b	Pyefleet Inner Channel	HtL	HtL	HtL	The current line will be held throughout all epochs.

**Table 2.6 Management Unit F (Blackwater Estuary)**

Policy Development Zone		Policy Plan			
		Now – 2025	2025 - 2055	2055 – 2105	Explanation
F1	Strood to Salcott-cum Virley	HtL	HtL	HtL	The current line will be held throughout all epochs.
F2	Salcott Creek	HtL	HtL	HtL	The current line will be held throughout all epochs.
F3	South bank of the Salcott Channel to Tollesbury Fleet	HtL	HtL	MR2	The current line will be held in epoch 1 and 2. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, roads and sewage works.
F4	Tollesbury	HtL	HtL	HtL	The current line will be held throughout all epochs.
F5	Tollesbury Wick Marshes to Goldhanger	HtL	HtL	MR2	The current line will be held in epoch 1 and 2. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, roads and sewage works.
F6	Goldhanger to Heybridge	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
F7	Heybridge Basin	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
F8	Maldon Inner estuary	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
F9a	South Maldon	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
F9b	Northey Island	HtL	HtL	HtL	The current line will be held throughout all epochs.
F10	Maylandsea	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
F11a	Mayland Creek west	HtL	HtL	HtL	The current line will be held throughout all epochs.

Policy Development Zone		Policy Plan			
		Now – 2025	2025 - 2055	2055 – 2105	Explanation
F11b	Mayland Creek	NAI	NAI	NAI	No erosion expected, therefore no defences needed.
F11c	Mayland Creek east	HtL	HtL	HtL	The current line will be held throughout all epochs.
F12	Steeple	HtL	HtL	MR2	The current line will be held in epoch 1 and 2. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, roads and sewage works.
F13	St. Lawrence	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
F14	St. Lawrence to Bradwell-on-Sea	<b>HtL+</b>	<b>MR2+</b>	HtL+	<b>The current line will be held in epoch 1. In epoch 2, Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, roads and Leisure Park. The standard of protection of any new / remaining defence will be maintained or upgraded.</b>
F15	Bradwell Creek	HtL	HtL	HtL	The current line will be held throughout all epochs. The currently undefended section will remain undefended.

**Table 2.7 Management Unit G (Dengie Peninsula)**

Policy Development Zone		Policy Plan			
		Now - 2025	2025 - 2055	2055 - 2105	Explanation
G1	Bradwell-on-Sea	HtL	HtL	HtL	The current line will be held throughout all epochs. The defence is under pressure but there are overriding constraints for realignment.
G2	Bradwell Marshes	HtL	HtL	HtL	The current line will be held throughout all epochs.
G3	Dengie Marshes	HtL	HtL	HtL	The current line will be held throughout all epochs. The defence is partly under pressure but there are overriding constraints for realignment.

**Table 2.8 Management Unit H (Crouch and Roach)**

Policy Development Zone		Policy Plan			
		Now – 2025	2025 - 2055	2055 - 2105	Explanation
H1	Burnham on Crouch	HtL	HtL	HtL	The current line will be held throughout all epochs.
H2a	From Burnham on Crouch to Bridgemarsh	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to all dwellings and the railway line. The currently undefended section at The Cliff will remain undefended.
H2b	Bridge Marsh to North Fambridge	HtL	HtL	MR2	The current line will be held in epoch 1 and 2. Managed realignment by breach of the existing defence while continuing flood defence to all dwellings and the railway line. Note that the alignment of the new defence is under discussion.
H3	North Fambridge and South Woodham Ferrers	HtL	HtL	HtL	The current line will be held throughout all epochs.
H4	South Woodham Ferrers, Battlesbridge and Hullbridge	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
H5	Eastwards of Brandy Hole	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded. The currently undefended sections will remain undefended.
H6	Landward of Brandy Hole Reach	HtL	HtL	HtL	The current line will be held throughout all epochs.
H7	South Fambridge	HtL	HtL	HtL	The current line will be held throughout all epochs.
H8a	South bank of Longpole, Shortpole and Raypitts Reaches (Canewdon West)	HtL	HtL	HtL	The current line will be held throughout all epochs. The defence is under pressure but there are overriding constraints for realignment.

Policy Development Zone		Policy Plan			
		Now – 2025	2025 - 2055	2055 - 2105	Explanation
H8b	Canewdon	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to dwellings
H9	Paglesham Creek	NAI	NAI	NAI	No erosion expected, therefore no defences needed.
H10	Wallasea	MR2	HtL	HtL	Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, tourist facilities and roads.
H11a	Paglesham Churchend	HtL	MR2	HtL	The current line will be held in epoch 1. Managed realignment by breach of the existing defence while continuing flood defence to the dwellings and infrastructure.
H11b	Paglesham Eastend	HtL	<b>MR2</b>	<b>HtL</b>	<b>The current line will be held in epoch 1. In epoch 2, realigned defences will be required to protect the community of Paglesham Eastend ahead of any Managed realignment by breach of the existing defence while continuing flood defence to the dwellings and infrastructure.</b>
H12	Stambridge	HtL	HtL	HtL	The current line will be held throughout all epochs.
H13	Rochford	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
H14	Barling Marsh	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The defence is under pressure but there are overriding constraints for realignment. The standard of protection will be maintained or upgraded.
H15	Little Wakering	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.
H16	Great Wakering	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained or upgraded.

**Table 2.9 Management Unit I (Foulness)**

Policy Development Zone		Policy Plan			
		Now - 2025	2025 - 2055	2055 - 2105	Explanation
I1a	Foulness	HtL	HtL	HtL	The current line will be held throughout all epochs. The defence is under pressure but there are overriding constraints for realignment.
I1b	Potton	HtL	HtL	HtL	The current line will be held throughout all epochs. The defence is under pressure but there are overriding constraints for realignment.
I1c	Rushley	HtL	HtL	MR2	The current line will be held in epoch 1 and 2. Managed realignment by breach of the existing defence, followed by No Active Intervention.

**Table 2.10 Management Unit J (Southend-on-Sea)**

Policy Development Zone		Policy Plan			
		Now - 2025	2025 - 2055	2055 - 2105	Explanation
J	Southend on Sea	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The standard of protection will be maintained.

### **3 SITES AND FEATURES CONSIDERED WITHIN THE APPROPRIATE ASSESSMENT**

#### **3.1 Designated sites potentially affected by SMP2**

The Essex and South Suffolk coast contains a combination of open coastal areas and estuaries. The open coastal areas are largely undeveloped and in agricultural or military use. The estuaries are generally bounded by agricultural land, interspersed with estuarine habitats.

The area carries a wide range of designations under the Habitats and Birds Directives and the Ramsar Convention. The sites are, however, typically designated for bird species which require intertidal or coastal habitat. The Essex Estuaries SAC provides designation for a mosaic of estuarine habitats. The high conservation value is reflected in the fact that the majority of the coastline is subject to statutory nature conservation and landscape designations. These have important implications for any prospective developments, management or policies relating to the Essex and South Suffolk coast.

Despite the dispersed nature of the designated sites throughout the SMP2 area, there is potential for policies associated with one area to have a knock-on effect with other designated sites. Sites concentrated on the Essex and South Suffolk Coast and within the 1 in 1000 year (0.1% annual exceedance probability (AEP) flood zone are shown below.

Conceivably shoreline management policies selected in the SMP2 may affect International sites further afield. Such sites must also be fully considered within the HRA. The Outer Thames Estuary SPA was initially considered but scoped out of further assessment, through discussion and by agreement with Natural England, since no likely significant effect of SMP2 policy was identified. No other sites potentially affected by the SMP2 were identified.

##### **Sites designated under the Birds Directive:**

- Stour and Orwell Estuaries;
- Hamford Water;
- Colne Estuary;
- Blackwater Estuary;
- Dengie;
- Benfleet & Southend Marshes;
- Foulness; and
- Crouch and Roach Estuaries.

##### **Sites designated under the Habitats Directive:**

- Essex Estuaries.

##### **Sites designated under the Ramsar Convention:**

- Stour and Orwell Estuaries;
- Hamford Water;
- Colne Estuary;
- Crouch and Roach Estuaries;

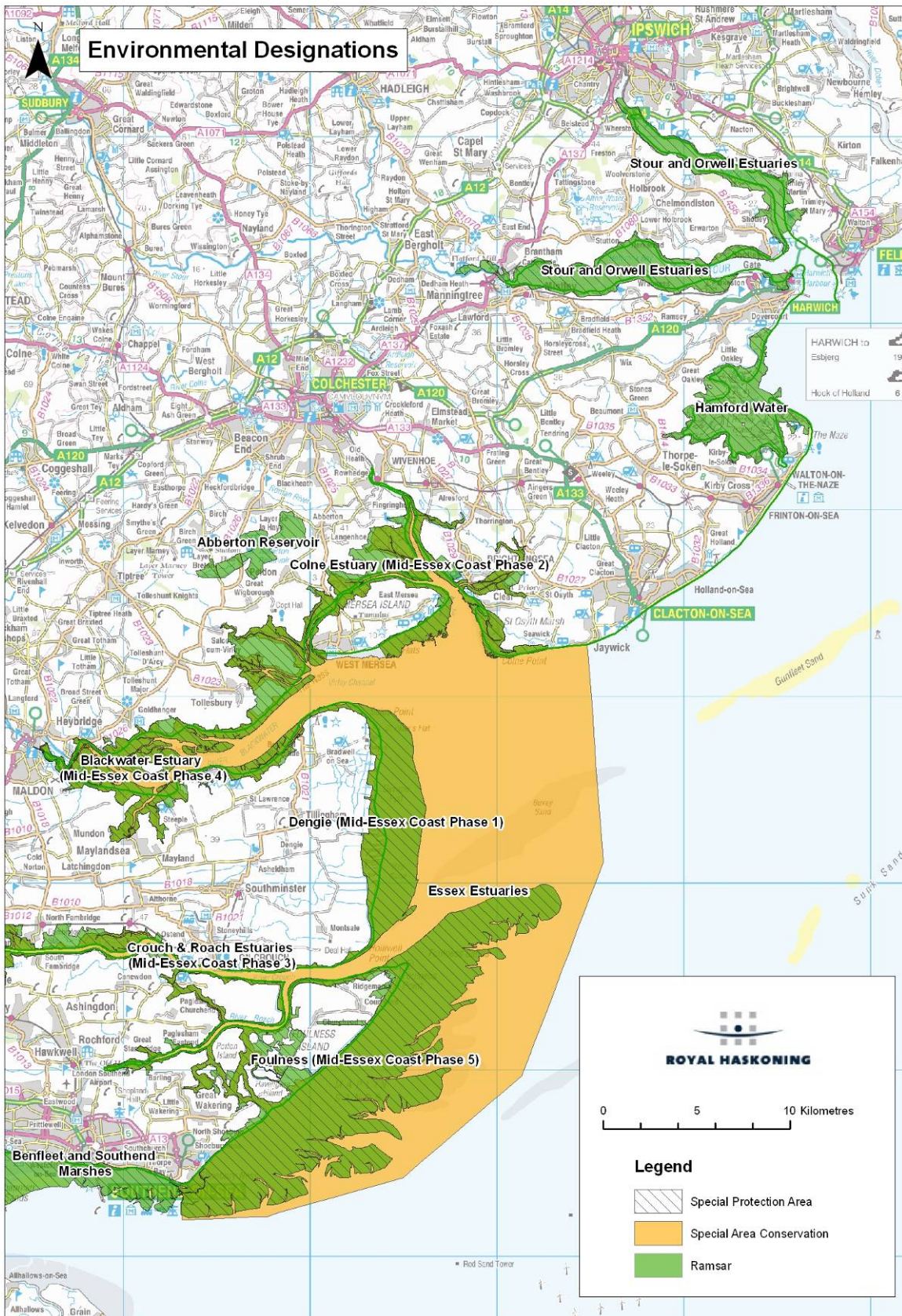
- Blackwater Estuary;
- Dengie;
- Benfleet & Southend Marshes; and
- Foulness.

### 3.2 Summary

The effect of the above designations is that, particularly in the southern half of the SMP2, a significant proportion of the SMP2 is within designated sites. **Figure 3.1** below shows the location of the International sites considered within this assessment.

**Annex II** provides detailed information regarding the interest features of these International sites.

Figure 3.1 International Sites considered in detail within the Essex and South Suffolk SMP2 HRA



## 4 SITE CONSERVATION OBJECTIVES AND CONDITION

### 4.1 Conservation objectives

Conservation objectives are Natural England's statutory advice to operators and to competent authorities, and are used as the baseline against which to evaluate possible damaging operations. They outline the detailed habitat and environmental conditions necessary to maintain or restore favourable condition of site features and site integrity. Conservation objectives thus serve as the basis for evaluating plans and projects under the Habitats Regulations. Conservation objectives for sites on the Essex and South Suffolk coast provide a detailed and comprehensive account of the parameters which comprise favourable condition/site integrity and the acceptable limits of impacts compatible with site integrity. These are incorporated in the assessment tables in **Annex I**. Conservation objectives are currently being reviewed by Natural England, primarily such that they can be made more quantitative. This process is running along similar timescales to the SMP2. However, it is not felt that this compromises this current assessment, as the fundamental principles of the conservation objectives are unlikely to change.

For qualifying species (SAC, SPA and Ramsar), 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, thus 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 extent 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 (SAC and Ramsar) the conservation objectives can be generalised as follows:

- To ensure for the qualifying habitats the following are maintained in the long term:
  - Extent 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; and
  - No significant disturbance of typical species of habitat.

## 4.2 Current condition assessment

International sites are 'underpinned' by the national SSSI designation. Site condition monitoring is undertaken by Natural England at the SSSI level, according to the Joint Nature Conservation Committee (JNCC) common standards protocols. The relevance of SSSI condition status to those of International sites depends upon the degree to which their features correspond. SSSI features are based on United Kingdom Biodiversity Action Plan (UKBAP) broad habitat classifications. These are comprehensive categories, and can be considered to encompass all qualifying features.

On the Essex and South Suffolk coast there is a close correspondence between SSSI features and the features of International sites, meaning that condition assessments and more importantly, reasons for unfavourable status can be considered reliable indicators of feature condition, and impacts on site integrity with respect the features of International sites. As such the condition assessment is an analogue by which the impact of SMP1 policy on International sites can be judged, and by which SMP2 policy will be judged in the future (through monitoring change).

SSSIs are typically divided into a series of units, for the purposes of management and monitoring. For example, the Blackwater Estuary SSSI comprises 89 units. The condition data for the site indicate that 59 of these are currently classified as being in an 'unfavourable' condition. This is thought to be largely due to saltmarsh erosion caused by coastal squeeze. All of these units are determined as being in an 'unfavourable recovering' condition, due to habitat creation, the adoption of a grazing regime and the fencing off of saltmarsh and reedbed habitat to prevent poaching (soil compression/waterlogging) by livestock.

Natural England's site information system (ENSIS) contains information on the 'remedies' required to enable SSSIs to meet favourable condition by 2010. This also identifies any units where the Environment Agency, through its flood risk management role, is responsible for delivering favourable condition.

## 5 THE 'ALONE' ASSESSMENT OF SMP2 POLICY

The first stage of the HRA provided an initial appraisal of SMP2 policy within each MU, with a view to establishing those where shoreline policy would demonstrably not have a significant effect on International sites. Since the plan area is almost entirely covered by international designations and the plan itself may influence coastal morphology, it cannot be determined that the SMP2 will not have a likely significant effect. Accordingly, an appropriate assessment is provided which seeks to establish if the SMP2, either alone or in combination with other plans or projects, has the potential to have an adverse effect on the integrity of International sites. This section provides the assessment of the plan 'alone'.

The assessment provided here is for policy across all epochs of the plan. As detailed in **Section 2.7**, elements of the plan will be subject to high levels of uncertainty based on coastal processes, response to management and the effects of the projected relative sea level rise. The effects of policy within epoch 1 are likely to be more certain than in epochs 2 and 3, but the current intent of government is to review the SMPs on a regular basis. Within this context, this assessment has been provided on the basis of epoch 1 policy being implemented during the period leading up to the review of the SMP2, and there being a higher degree of uncertainty as to potential impacts of later policies.

Central to dealing with uncertainty within the assessment of provisional policy options, the SMP2 (and this assessment) provides a series of measures to ensure that the actual effects of the plan are identified, with any potential adverse effects understood and minimised and a management response provided (through subsequent SMPs). Methods of understanding coastal evolution and behaviour, especially under the scenario of the projected rise in relative sea level include:

- A firm commitment to ongoing survey, monitoring and research;
- A re-run of modelling along the coast to understand the hydrodynamic and geomorphological processes and potential solutions to management issues;
- A re-evaluation of provisional policy options based on increased understanding gained by the above steps; and
- An explicit commitment to ensuring that future provisional policy options (in subsequent SMPs) are subject to the full HRA process and provide identification of mitigation (if available) and compensation.

It is recognised that monitoring by itself is not a method of mitigating an adverse effect. These measures are provided as an overall package to ensure that in the future uncertainty is reduced and understanding increased, so that future management can adequately offset future losses, whether by mitigation or compensation.

The assessment below (summarising the tables in **Annex I**) recognises the uncertainty relating to provisional policy options in later epochs of the plan.

### 5.1 Conclusion of the 'alone' assessment

The consideration of effects on the features and conservation objectives of the International sites in this area has been central to policy production in the SMP2 process. As almost the entire SMP2 area contains or abuts an International site,

SMP2 policy in all MUs has the potential to affect International sites. Due to the need to respond to conflicting and mutually exclusive requirements of the SMP2 (e.g. meeting socio-economic and environmental objectives) it has not been possible for policy to be developed to fully meet the requirements of the Habitats Regulations. On the basis of the appraisal detailed in **Annex I** it was not possible to conclude NAEOI for designated sites affected by policies in any of the MUs. These findings are summarised for each MU below.

#### 5.1.1 Management Unit A – Stour and Orwell

As a result of the loss of freshwater habitat through managed realignment an adverse effect on redshank and dark bellied Brent geese is expected. These are features of the Stour and Orwell Estuaries SPA and Ramsar sites. In addition loss of intertidal habitat through coastal squeeze is likely to have an adverse effect on SPA/Ramsar species in frontages where a HTL policy is proposed and is therefore considered an adverse effect. **NAEOI cannot be concluded for the Stour and Orwell Estuaries SPA and Ramsar sites.**

#### 5.1.2 Management Unit B – Hamford Water

Managed realignment will lead to the loss of offsite freshwater / terrestrial habitats which could adversely affect avocet, redshank and dark bellied Brent geese. Redshank and dark bellied Brent geese are features of both the Hamford Water SPA and Ramsar sites, while avocet is only a feature of the SPA. In addition HTL frontages will experience loss of intertidal habitat through coastal squeeze, with impacts on SPA and Ramsar species. **Therefore NAEOI cannot be concluded for the Hamford Water SPA and Ramsar sites.**

#### 5.1.3 Management Unit C – Tendring Peninsula

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on features of the Essex Estuaries SAC, Colne Estuary SPA and Ramsar sites. This will impact upon intertidal-dependent SPA species, and redshank and dark bellied Brent geese as features of the Ramsar site. The policy for managed realignment in epoch 3 in PDZ C4 would lead to loss of off-site terrestrial / freshwater habitat utilised by dark-bellied Brent geese. This is a feature of the Colne Estuary SPA and Ramsar sites. **Therefore NAEOI cannot be concluded for the Essex Estuaries SAC, or Colne Estuary SPA and Ramsar sites.**

#### 5.1.4 Management Unit D – Colne Estuary

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on features of the Essex Estuaries SAC, Colne Estuary SPA and Ramsar sites. The SPA/Ramsar species that this is likely to adversely effect are dark-bellied Brent geese, redshank, and ringed plover. Managed realignment will lead to the loss of freshwater habitat which will affect the following features of the Colne Estuary SPA and Ramsar sites; hen harrier, pochard, redshank and dark bellied Brent geese. **Therefore NAEOI cannot be concluded as a result of policies within this MU for the Essex Estuaries SAC, Colne Estuary SPA and Ramsar sites.**

#### 5.1.5 Management Unit E – Mersea Island

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on features of the Essex Estuaries SAC (as above), Colne Estuary SPA and Ramsar sites, and the Blackwater Estuary SPA and Ramsar sites. Managed realignment will lead to the loss of freshwater/terrestrial habitat which will affect the following features of the Colne Estuary SPA and Ramsar sites, and Blackwater Estuary SPA and Ramsar sites: avocet, hen harrier, pochard, redshank and dark bellied Brent geese. **Therefore NAEOI cannot be concluded for the Essex Estuaries SAC, Colne Estuary SPA and Ramsar sites, and Blackwater Estuary SPA and Ramsar sites.**

#### 5.1.6 Management Unit F – Blackwater Estuary

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on features of the Essex Estuaries SAC, Blackwater Estuary SPA and Ramsar sites. This is expected to have an adverse effect on all species listed as part of the Blackwater Estuary SPA and Ramsar sites. Managed realignment policies will also lead to the loss of off-site terrestrial / freshwater habitats (predominantly agricultural land) which will have an adverse effect upon cited species of the Blackwater Estuary SPA and Ramsar sites, particularly dark bellied Brent geese. **Therefore NAEOI cannot be concluded for the Essex Estuaries SAC, and Blackwater Estuary SPA and Ramsar sites.**

#### 5.1.7 Management Unit G – Dengie Peninsula

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on features of the Essex Estuaries SAC, Dengie SPA and Ramsar sites, and Crouch and Roach Estuaries SPA and Ramsar sites. This is likely to have an adverse effect on all species cited as features of the SPA and Ramsar sites. **Therefore NAEOI cannot be concluded for the Essex Estuaries SAC, Dengie SPA and Ramsar sites and Roach and Crouch Estuaries SPA and Ramsar sites.**

#### 5.1.8 Management Unit H – Crouch and Roach

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on features of the Essex Estuaries SAC, Crouch and Roach Estuaries SPA and Ramsar sites, and Foulness SPA and Ramsar sites. Managed realignment is likely to lead to loss of offsite and onsite terrestrial and freshwater habitats which could lead to an adverse effect on the Crouch and Roach Estuaries SPA and Ramsar sites. This will particularly impact on dark bellied Brent geese which are cited features of both SPA/Ramsar sites. **Therefore NAEOI cannot be concluded for the Essex Estuaries SAC, Roach and Crouch Estuaries SPA and Ramsar sites, and Foulness SPA and Ramsar sites.**

#### 5.1.9 Management Unit I – Foulness

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on features of the Essex Estuaries SAC, and Foulness SPA and Ramsar sites. Managed realignment is likely to lead to loss of freshwater / terrestrial habitats which could lead to an adverse effect on cited bird species of the

Foulness SPA and Ramsar sites. **Therefore NAEOI cannot be concluded for the Essex Estuaries SAC, and Foulness SPA and Ramsar sites.**

5.1.10 Management Unit J – Southend-on-Sea

The loss of intertidal habitats through coastal squeeze from HTL policies is likely to lead to an adverse effect on the Essex Estuaries SAC, Foulness SPA and Ramsar sites, and Benfleet and Southend Marshes SPA and Ramsar sites. **Therefore NAEOI cannot be concluded for the Essex Estuaries SAC, Foulness SPA and Ramsar sites, and Benfleet and Southend Marshes SPA and Ramsar sites.**

5.1.11 Overall

SMP2 policy in all MUs has the potential to affect International sites, and in each case it was not possible to conclude NAEOI for designated sites, as shown below.

**Management Units, and sites for which NAEOI cannot be concluded:**

**Management Unit A – Stour and Orwell  
(Stour and Orwell Estuaries SPA and Ramsar site)**

**Management Unit B – Hamford Water  
(Hamford Water SPA and Ramsar site)**

**Management Unit C – Tendring Peninsula  
(Colne Estuary SPA and Ramsar site, and Essex Estuaries SAC)**

**Management Unit D – Colne Estuary  
(Colne Estuary SPA and Ramsar site, and Essex Estuaries SAC)**

**Management Unit E – Mersea Island  
(Colne Estuary SPA and Ramsar site, Blackwater Estuary SPA and Ramsar site, and Essex Estuaries SAC)**

**Management Unit F –Blackwater Estuary  
(Blackwater Estuary SPA and Ramsar site, and Essex Estuaries SAC)**

**Management Unit G – Dengie Peninsula  
(Dengie SPA and Ramsar site, Crouch and Roach Estuaries SPA and Ramsar site, and Essex Estuaries SAC)**

**Management Unit H –Crouch and Roach  
(Foulness SPA and Ramsar site, Crouch and Roach Estuaries SPA and Ramsar site, and Essex Estuaries SAC)**

**Management Unit I – Foulness  
(Foulness SPA and Ramsar site, and Essex Estuaries SAC)**

**Management Unit J – Southend-on-Sea  
(Foulness SPA and Ramsar site, Benfleet and Southend Marshes Estuaries SPA and Ramsar site, and Essex Estuaries SAC)**

## 5.2 The collective assessment of SMP2 policy

The assessment in **Annex I** provides for upstream and downstream effects – where the effect of SMP2 policy for each MU has been considered on adjacent units; the effects of policy outside each MU were fully considered.

As such, it remains to be considered whether SMP2 policy in one PDZ or MU has an effect that is deemed acceptable on its own, but which would affect site integrity in combination with the effect of another policy; or where a series of small-scale similar effects cumulatively contribute to an overall, adverse effect on the integrity of sites. The cumulative effects are addressed by the very nature of an appropriate assessment. There is no '*de minimus*' in this process – if there is an adverse effect (no matter how small) on site integrity, the singular policy would not be acceptable.

There are no instances in which SMP2 policy, either in an individual PDZ or MU, has been assessed as having an effect which is additional to any anticipated singular effects. The singular effects of the SMP2 relate primarily to changes in habitat extent or shifts in habitat morphology, as discussed below.

## 5.3 Impacts associated with SMP2 policy

The key issues within the plan area relating to SMP2 policy are discussed briefly below.

### 5.3.1 Loss of intertidal habitat

Intertidal habitat (saltmarsh and mudflat) is a key feature of the Essex Estuaries SAC which spans the majority of the SMP2 area. These habitats are also critical feeding, roosting and breeding habitats for the majority of SPA and Ramsar-cited bird species.

Where defences exist and are fronted by intertidal habitat, the loss of this habitat through coastal squeeze is likely over the timeline of the plan due to sea level rise. Overall, the realignments proposed by the Essex and South Suffolk SMP2 will help to offset some of the adverse effects on the integrity of the SAC habitats (and supporting habitats designated for the SPA and Ramsar sites) from coastal squeeze, but throughout the plan timeline the actual levels of loss remain uncertain.

It is likely that saltmarsh will be gradually lost as sea level rises, to a point where none remains. Mudflat area is expected to remain unchanged until this point (albeit it will migrate inland at the same rate), but once saltmarsh is lost the same gradual change will lead to a reduction in mudflat extent.

### 5.3.2 Loss of habitats required for the maintenance of cited bird species

Large areas of the Essex and South Suffolk coast are designated as SPA (a mosaic of SPAs covers the plan area) for a wide range of bird species, many of which have varied habitat requirements (for feeding, roosting or breeding). Species partially dependent upon freshwater or terrestrial habitats include (with habitat requirements in parentheses):

- Hen harrier (lowland farmland, fenland and river valleys, especially around the coast), which is a feature of the Colne Estuary, Blackwater Estuary, Dengie, Foulness, and Crouch and Roach Estuaries SPA sites;
- Avocet (brackish wetlands), which is a feature of the Stour and Orwell Estuaries, and Foulness SPA sites; and
- Dark-bellied Brent goose (grazing marsh as roosting habitat and agricultural land as grazing habitat), which is a feature of the Stour and Orwell Estuaries, Hamford Water, Colne Estuary, Blackwater Estuary, Dengie, Benfleet and Southend Marshes, Crouch and Roach Estuaries, and Foulness SPA sites.

The maintenance of terrestrial or freshwater habitat is essential for the species listed above. This habitat may form part of the SPA (as a sub-feature) or may lie adjacent to and outside of the site. Within this assessment, the loss of grazing marsh has been treated as an adverse effect on the integrity of sites designated for the above species, regardless of the location of this habitat within or adjacent to the site. Such habitat is essential to maintain the ecological function of the site and maintain viable populations of cited species. The loss of such habitat (through managed realignment schemes to offset loss of intertidal habitat) has been identified in all MUs across the plan and an adverse effect on the integrity of these features concluded.

However, the majority of the cited SPA and Ramsar bird species are largely dependent upon coastal habitats for feeding, roosting and breeding and the requirements of these species have played a key role in the development of policies for the Essex and South Suffolk SMP2. Should the areas of intertidal habitat be reduced, then the internationally important assemblages of bird species which depend upon the Essex and South Suffolk coast would be adversely affected. As such, the provision of compensatory habitat is likely to be required.

#### *Loss of terrestrial and freshwater habitat*

The Essex and South Suffolk SMP2 has advocated management measures which would be likely to compromise or lead to the loss of freshwater and terrestrial habitat protected by defence, as often local topography has dictated that landward migration of this habitat 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 reverting to a more natural state.

Within this assessment, the loss of freshwater/terrestrial features (primarily due to managed realignment over designated or off-site grazing marsh) has been identified as an adverse effect on site integrity of the various SPA and Ramsar sites across a range of MUs. Within these units the key driver for managed realignment (listed as MR2 – realignment which should create new habitat areas) has been the requirement to address the potential adverse effect through coastal squeeze of intertidal habitat against existing defences within International sites. The actual adverse effect therefore is a result of policies which seek to provide intertidal habitat (as discussed above). The sites where an adverse effect will be caused are summarised below:

- Loss of designated terrestrial / freshwater habitat; Stour and Orwell SPA and Ramsar sites, Colne Estuary SPA and Ramsar sites, Crouch and Roach SPA and Ramsar sites, and Foulness SPA and Ramsar sites.

- Loss of off-site terrestrial / freshwater habitat; Hamford Water SPA and Ramsar sites, Colne Estuary SPA and Ramsar sites, Blackwater Estuary SPA and Ramsar sites, and Crouch and Roach SPA and Ramsar sites.

The anticipated changes across the plan area need consideration in the Environment Agency's Regional Habitat Compensation Programme (RHCP) to deliver the most effective means of compensation.

## 6 THE IN-COMBINATION ASSESSMENT OF SMP2 POLICY

In-combination effects are considered in order to establish whether the effects of SMP2 policy in-combination with the effects of other plans and projects would have an adverse effect on the integrity of International sites.

A range of envisaged or ongoing plans or projects must be considered in combination with SMP2 policy and any plan or project which has yet to be implemented will need to be considered within an in-combination assessment. The following plans have been identified as being of a type and scope which require consideration within the in-combination assessment of the SMP2. They are those which in this case relate to the development of land in the coastal zone or strategies which 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 SMP2 policy are only those where an effect of SMP2 policy, when combined with the effect of another plan or project, will have an adverse effect on the integrity of the site. It is not the intent of the assessment to use SMP2 policy to alleviate the effects of plans where the selected policy has no effect but an alternative policy could help to mitigate adverse effects of other plans. This is an important distinction within the assessment. Although it is the intent to provide SMP2 policy which provides positive benefits, pursuing the SMP2 principle of supporting conservation and enhancement of biodiversity and geodiversity, the HRA addresses possible adverse effect, not opportunities for remediation.

Accordingly, the following plans and proposals need to be considered.

### 6.1 Land use plans

Land use (spatial) plans are produced by local authorities, and they set out the broad framework for planning and development in the local authority area. The area potentially affected by the Essex and South Suffolk SMP2 is covered by eight local authorities, each of which has a spatial plan (local plan or Local Development Framework core strategy), together with Essex and Suffolk County Councils. The local authorities are:

- Tendring District Council;
- Chelmsford Borough Council;
- Suffolk Coastal District Council;
- Ipswich Borough Council;
- Babergh District Council;
- Colchester Borough Council;
- Maldon District Council;
- Braintree District Council;
- Rochford District Council; and
- Southend-on-Sea Borough Council.

The main issue for land use plans in the context of SMP2s and their compatibility with the Habitats Regulations is where land is allocated for housing, employment or other uses, development of which may prejudice SMP2 policies. For example, housing

allocations in areas currently prevented from flooding by flood defence structures or practices would make it more difficult to undertake managed retreat or no active intervention options. These may be preferred, or necessary, in response to coastal squeeze which may be adversely affecting International sites.

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 which will enhance flood risk. PPS 25 requires local authorities to undertake Strategic Flood Risk Assessments (SFRA) to assist in developing spatial plans, as part of the Local Development Framework system, such that they achieve these objectives.

Adherence to PPS 25 guidance will ensure that the likelihood of development occurring which will prejudice SMP2 policies, is minimised. It does not however completely preclude these possibilities, and individual local plans thus need to be examined to identify any constraints which may act in combination with SMP2 policies.

The effects of spatial plans on International sites (in Essex and South Suffolk) typically relate to direct disturbance of bird species or impacts on water quality or water resources. The effects of the SMP2 relate more to the loss of habitat (or supporting habitat for species). The in-combination effects of land use plans and the SMP2 are discussed in **Section 6.7**.

## **6.2 Catchment Flood Management Plans**

Catchment Flood Management Plans (CFMPs) provide an overview of the flood risk across river catchments. They recommend methods for managing those risks now and over the next 50-100 years. CFMPs consider all types of inland flooding, from rivers, ground water, surface water and tidal flooding. CFMPs within the boundaries of the SMP2; are East Suffolk, North Essex and South Essex.

The following sub areas and their selected management policies lie within the SMP boundaries:

East Suffolk CFMP:

- Suffolk Coast and Heaths, Policy 2 - Areas of low to moderate flood risk where we can generally reduce existing flood risk management actions; and
- Ipswich, Policy 5 - Areas of moderate to high flood risk where we can generally take further action to reduce flood risk.

North Essex CFMP:

- Blackwater and Chelmer, Upper Reaches and Coastal Stream, Policy 2 - Areas of low to moderate flood risk where we can generally reduce existing flood risk management actions;
- Lower Blackwater, Upper and Mid Tributaries and Mid Colne and Stour, Policy 3 - Areas of low to moderate flood risk where we are generally managing existing flood risk effectively;
- Harwich and Clacton-on-Sea, Policy 3 - Areas of low to moderate flood risk where we are generally managing existing flood risk effectively; and

- Heybridge, Policy 5 - Areas of moderate to high flood risk where we can generally take further action to reduce flood risk.

#### South Essex CFMP:

- Rural Dengie Tidal and Northern Crouch Catchment, Policy 2 - Areas of low to moderate flood risk where we can generally reduce existing flood risk management actions. Generally, Policy 2 involves reducing bank and channel maintenance in certain locations where flood risk is determined to be low and helps to improve the flow between the river and its floodplain and so improve wetland and aquatic habitats;
- Southend-on-Sea and Rayleigh, Policy 5 - Areas of moderate to high flood risk where we can generally take further action to reduce flood risk; and
- Thames Urban Tidal, Policy 4 - Areas of low, moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change.

Other policies which seek to improve flood management and defence are located within towns, where the impact of river and surface water flooding is greatest. The HRAs for the North Essex CFMP and the South Essex CFMP concluded that there would be no adverse effects alone or in combination with the Essex and South Suffolk SMP2. The HRA for the East Suffolk CFMP concluded that there could be an adverse effect on the Stour and Orwell SPA and Ramsar sites, through increasing flood risk. However, given the nature of this potential adverse impact it is likely that the effects of the Essex and South Suffolk SMP, when they occur, will be greater and more permanent. Since, alongside this, both the SMP and CFMP seek to manage flood risk in an integrated way it is not considered likely that there will be significant in-combination effects.

### 6.3 River Basin Management Plans

River Basin Management Plans (RBMPs) are plans for protecting and improving the water environment. They contain the main issues for the water environment and the actions required to deal with them. It sets out what improvements are possible by 2015 and how the actions will make a difference to the local environment. The RBMP relevant to the SMP2 boundary is the Anglian RBMP.

In November 2009 a HRA was undertaken of the RBMP. The HRA assessed all of the sites mentioned in this report and a number of others. The report concluded that the RBMP is not likely to have any significant negative effects on any European sites, alone or in combination with other plans or projects (Environment Agency, 2009a). The RBMP addresses positive improvements to the water environment, and when implemented can be expected to reduce any current pressures on the designated sites, potentially increasing their resilience. As such there are not expected to be adverse in-combination effects, although the scale and nature of the impacts foreseen as a result of SMP2 policy are not likely to be significantly mitigated by the RBMP.

### 6.4 Maintenance dredging

Given the number of harbours and navigational channels for both recreational and commercial boating traffic along the Essex and South Suffolk coast, a significant amount of maintenance dredging takes place.

On examination of the effects of the SMP2, which are confined to loss of terrestrial and intertidal habitat through coastal squeeze or managed realignment, no examples could be found where there was a common effect between the SMP2 and the impacts of maintenance dredging.

## 6.5 Fisheries and aquaculture

In the past the Essex and South Suffolk coast was home to a thriving fishing industry. Whilst this has ceased in places like Harwich, it is still an important industry on the Essex and South Suffolk coast in towns such as Southend-on-Sea. There is a viable and relatively stable shell fishing industry in the study area, particularly for cockle. The Kent and Essex Sea Fisheries Joint Committee (KESFJC) and the Eastern Sea Fisheries Joint Committee (ESFJC) are responsible for consenting, managing and regulating fisheries activities around the Essex and South Suffolk Coast.

As with maintenance dredging, however, no examples could be identified where in-combination effects would occur between the SMP2 and fisheries or aquaculture.

## 6.6 Activities regulated and consented by the Environment Agency

The Environment Agency regulates and consents a range of activities which have the potential to affect site integrity. Relevant consents include those under the Environmental Permitting (EP) regime<sup>†</sup> for prescribed industrial activities and waste management permitting, with discharge consents and groundwater authorisations (and radioactive substances regulation) also being brought under EP in the 'second phase' of the system from April 2010<sup>‡</sup>. The majority of new applications received by the Environment Agency for these permits are reviewed under Regulation 21 of the Habitats Regulations.

In order 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 50 Review of Consents (RoC) Project (Regulation 50 under the 1994 Habitats Regulations (addressed by regulations 63 and 67 of the 2010 regulations))

No in-combination effects were established through the course of this assessment between processes considered through the RoC process and the Essex and South Suffolk SMP2.

## 6.7 In-combination assessment

The assessment of SMP2 policy in **Annex I** provides a clear account of the expected effects of SMP2 policy in each MU. As outlined above the only real effects of policy are changes in habitat extent or shifts in habitat morphology. Therefore the

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<sup>†</sup> Environmental Permitting (England and Wales) Regulations 2007. SI 2007 No. 3538

<sup>‡</sup> Environmental Permitting (England and Wales) Regulations 2010. SI 2010 No. 675

outstanding issue here is if the habitat shift or loss as a result of the SMP2 would have an in-combination effect with other plans and projects.

Of the other plans and projects identified above, only one is considered pertinent - namely land use plans.

The main effects of land use plans are: loss of habitat if development is suggested by policy on areas covered by International designations and disturbance from increased visitation due to increased population (a function of housing policy) or tourism initiatives. None of the land use plans which cover the Essex and South Suffolk coast provide for development on any International site and the remaining effect therefore is one of disturbance.

Disturbance relates to the physical disturbance, through visitation, primarily to bird species. Species which feed or roost on or adjacent to the foreshore are particularly susceptible to disturbance. The designation of SPA habitat for species which use intertidal areas (a popular recreational location for residents and visitors) is a central facet of designations on the Essex and South Suffolk coast, and consideration needs to be given therefore as to whether the effect of disturbance, coupled with the effects of the SMP2 are considered to have any combined effect. The SMP2 seeks to maintain the natural evolution of estuarine features, while providing for management if required to maintain a flood defence function. No instances where the direct effects of disturbance coupled with loss of habitat could be established at the time of this assessment. It therefore follows that there is no combined adverse effect on this feature.

**The SMP2 therefore is not considered to have any significant in-combination effects other plans policies of programmes influencing the Essex and South Suffolk coast.**

## **7 DETERMINING COMPENSATION AMOUNTS**

*To be completed (early 2011) following receipt of new data from Natural England on saltmarsh losses within the Essex SMP area.*

## 8 CONCLUSION

Following rigorous assessment of the Essex and South Suffolk SMP2 policies, both alone and in combination with other plans and policies, it cannot be concluded that there will be NAEOI of a number of International sites as a result of their implementation. It has not been possible to rule out the potential for adverse effects on the integrity of the following sites, through impacts to a range of designated features (habitats and species):

- Stour and Orwell Estuaries SPA;
- Stour and Orwell Estuaries Ramsar site;
- Hamford Water SPA;
- Hamford Water Ramsar site;
- Colne Estuary SPA;
- Colne Estuary Ramsar site;
- Essex Estuaries SAC;
- Blackwater Estuary SPA;
- Blackwater Estuary Ramsar site;
- Dengie SPA;
- Dengie Ramsar site;
- Crouch and Roach Estuaries SPA;
- Crouch and Roach Estuaries Ramsar site;
- Foulness SPA;
- Foulness Ramsar site;
- Benfleet and Southend Marshes Estuaries SPA; and
- Benfleet and Southend Marshes Estuaries Ramsar site.

Although the extent of the effects considered are dependent on the provision of certain limited management provisions, preferred SMP2 policy in all MU will contribute to this adverse effect on the site integrity.

**The outcome of the assessment is that NAEOI cannot be concluded for the Essex and South Suffolk SMP2.**

The SMP2 will therefore need to be accompanied by a statement of case which provides a clear account of the imperative reasons of overriding public interest (why the plan should be pursued in its current form) and details of the mechanism for the delivery of compensatory habitat. The delivery mechanism will be agreed between Natural England and the Environment Agency, and will involve the RHCP. Quantification of habitat area required to compensate the future losses will be carried out following publication of data by Natural England. The compensatory measures to offset the damage or loss caused by the SMP2, to maintain the overall coherence of the Natura 2000 network and functioning of the Ramsar sites, must be secured and ecologically functional in advance of the impact occurring.

## 9 REFERENCES

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

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## **ANNEX I**

### **DETAILED 'APPROPRIATE' ASSESSMENT TABLES**



## **ANNEX II**

### **INTEREST FEATURES OF INTERNATIONAL SITES**

**Table 1 SPAs considered in detail within the assessment**

Special Protection Areas	Site Features
Stour & Orwell Estuaries SPA	<p><b>Article 4.1 Qualification (79/409/EEC)</b>            During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Avocet <i>Recurvirosta avosetta</i></li> </ul> <p><b>Article 4.2 Qualification (79/409/EEC)</b>            Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Redshank <i>Tringa totanus</i>;</li> <li>○ Pintail <i>Anas acuta</i>;</li> <li>○ Dark-bellied Brent Goose <i>Branta bernicla bernicla</i>;</li> <li>○ Dunlin <i>Calidris alpina alpina</i>;</li> <li>○ Black-tailed godwit <i>Limosa limosa islandica</i>;</li> <li>○ Grey plover <i>Pluvialis squatarola</i>; and</li> <li>○ Knot <i>Calidris canuta</i>.</li> </ul>
Hamford Water SPA	<p><b>Article 4.1 Qualification (79/409/EEC)</b>            During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Little tern <i>Sterna albifrons</i>.</li> </ul> <p><b>Article 4.2 Qualification (79/409/EEC)</b>            Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Common teal <i>Anas crecca</i>;</li> <li>○ Dark-bellied Brent goose <i>Branta bernicla bernicla</i>;</li> <li>○ Ringed plover <i>Charadrius hiaticula</i>;</li> <li>○ Black-tailed godwit <i>Limosa limosa islandica</i>;</li> <li>○ Grey plover <i>Pluvialis squatarola</i>;</li> <li>○ Shelduck <i>Tadorna tadorna</i>; and</li> <li>○ Redshank <i>Tringa totanus</i>.</li> </ul>
Colne Estuary SPA	<p><b>Article 4.1 Qualification (79/409/EEC)</b>            During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Little tern <i>Sterna albifrons</i>.</li> </ul> <p>Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Hen harrier <i>Circus cyaneus</i>;</li> </ul> <p><b>Article 4.2 Qualification (79/409/EEC)</b>            During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Common Pochard <i>Aythya farina</i>; and</li> <li>○ Ringed plover <i>Charadrius hiaticula</i>.</li> </ul> <p>Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Dark-bellied Brent Goose <i>Branta bernicla bernicla</i>; and</li> <li>○ Redshank <i>Tringa totanus</i>.</li> </ul>
Blackwater Estuary SPA	<p><b>Article 4.1 Qualification (79/409/EEC)</b>            During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Little tern <i>Sterna albifrons</i>.</li> </ul> <p>Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Hen harrier <i>Circus cyaneus</i>.</li> </ul> <p><b>Article 4.2 Qualification (79/409/EEC)</b>            During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Common Pochard <i>Aythya farina</i>; and</li> <li>○ Ringed plover <i>Charadrius hiaticula</i>.</li> </ul> <p>Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>○ Dunlin <i>Calidris alpina alpina</i>;</li> <li>○ Ringed plover <i>Charadrius hiaticula</i>;</li> <li>○ Black-tailed godwit <i>Limosa limosa islandica</i>;</li> </ul>

Special Protection Areas	Site Features
	<ul style="list-style-type: none"> <li>o Grey plover <i>Pluvialis squatarola</i>; and</li> <li>o Dark-bellied Brent Goose <i>Branta bernicla bernicla</i>.</li> </ul>
Dengie SPA	<p><b>Article 4.1 Qualification (79/409/EEC)</b> Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>o Hen Harrier <i>Circus cyaneus</i>.</li> </ul> <p><b>Article 4.2 Qualification (79/409/EEC)</b> Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>o Dark-bellied Brent goose <i>Branta bernicla bernicla</i>;</li> <li>o Knot <i>Calidris canuta</i>; and</li> <li>o Grey Plover <i>Pluvialis squatarola</i>.</li> </ul>
Benfleet & Southend Marshes SPA	<p><b>Article 4.2 Qualification (79/409/EEC)</b> Over winter the area regularly supports</p> <ul style="list-style-type: none"> <li>o Dark-bellied Brent goose <i>Branta bernicla bernicla</i>;</li> <li>o Dunlin <i>Calidris alpina alpina</i>;</li> <li>o Knot <i>Calidris canutus</i>;</li> <li>o Ringed plover <i>Charadrius hiaticula</i>; and</li> <li>o Grey plover <i>Pluvialis squatarola</i>.</li> </ul>
Crouch and Roach Estuaries SPA	<p><b>Article 4.1 Qualification (79/409/EEC)</b> Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>o Hen Harrier <i>Circus cyaneus</i>.</li> </ul> <p><b>Article 4.2 Qualification (79/409/EEC)</b> Over winter the area regularly supports</p> <ul style="list-style-type: none"> <li>o Dark-bellied Brent goose <i>Branta bernicla bernicla</i>;</li> </ul>
Foulness SPA	<p><b>Article 4.1 Qualification (79/409/EEC)</b> During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>o Avocet <i>Recurvirostra avosetta</i>;</li> <li>o Little tern <i>Sterna albrifrons</i>;</li> <li>o Common tern <i>Sterna hirundo</i>; and</li> <li>o Sandwich tern <i>Sterna sandvicensis</i>.</li> </ul> <p>Over winter the area regularly supports;</p> <ul style="list-style-type: none"> <li>o Hen Harrier <i>Circus cyaneus</i>;</li> <li>o Bar-tailed godwit <i>Limosa lapponica</i>; and</li> <li>o Avocet <i>Recurvirostra avosetta</i>.</li> </ul> <p><b>Article 4.2 Qualification (79/409/EEC)</b> During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> <li>o Ringed plover <i>Charadrius hiaticula</i>;</li> </ul> <p>Over winter the area regularly supports:</p> <ul style="list-style-type: none"> <li>o Dark-bellied Brent goose <i>Branta bernicla bernicla</i>;</li> <li>o Knot <i>Calidris canutus</i>;</li> <li>o Oystercatcher <i>Haematopus ostralegus</i>;</li> <li>o Grey plover <i>Pluvialis squatarola</i>;</li> <li>o Redshank <i>Tringa totanus</i>.</li> </ul>

**Table 2 SACs considered in detail within the assessment**

Special Areas of Conservation	Site Features
Essex Estuaries SAC	<p><b>Annex I habitats that are a primary reason for selection of this site.</b> <b>Estuaries</b></p> <p>This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site</p>

Special Areas of Conservation	Site Features
	<p>comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i>, the brittlestar <i>Ophiothrix fragilis</i>, crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.</p> <p><b>Mudflats and sandflats not covered by seawater at low tide</b></p> <p>Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.</p> <p><b>Salicornia and other annuals colonising mud and sand</b></p> <p>Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.</p> <p><b>Spartina swards</b></p> <p>The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.</p> <p><b>Atlantic Salt Meadows (<i>Glauco-Puccinellietalia maritimae</i>)</b></p> <p>Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.</p> <p><b>Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)</b></p> <p>In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i>, occurs at one location, Colne Point.</p>

**Table 3 Ramsar sites considered in detail within the assessment**

Ramsar Sites	Site Features
Stour & Orwell Estuaries	<p><b>Ramsar criterion 2</b></p> <p>The site supports seven nationally-scarce plant species and five British Red Data Book invertebrates.</p>

Ramsar Sites	Site Features
	<p><b>Ramsar criterion 5</b> The site supports a notable assemblage of wintering wetland birds (63,017 waterfowl – 5 year peak mean).</p> <p><b>Ramsar criterion 6</b> Qualifying species/populations (as defined at designation) <i>Species with peak counts in spring/autumn:</i></p> <ul style="list-style-type: none"> <li>○ Common redshank <i>Tringa totanus totanus</i>.</li> </ul> <p><i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ Dark-bellied Brent Goose <i>Branta bernicla bernicla</i>;</li> <li>○ Northern pintail <i>Anas acuta</i>;</li> <li>○ Grey plover <i>Pluvialis squatarola</i>;</li> <li>○ Red knot <i>Calidris canutus islandica</i>;</li> <li>○ Dunlin <i>Calidris alpina alpina</i>;</li> <li>○ Black-tailed godwit <i>Limosa limosa islandica</i>; and</li> <li>○ Common redshank <i>Tringa totanus totanus</i>.</li> </ul>
Hamford Water	<p><b>Ramsar criterion 6</b> Qualifying species / populations (as identified at designation): <i>Species with peak counts in spring/autumn:</i></p> <ul style="list-style-type: none"> <li>○ Ringed plover <i>Charadrius hiaticula</i>; and</li> <li>○ Common redshank <i>Tringa totanus totanus</i>.</li> </ul> <p><i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ Dark-bellied Brent Goose <i>Branta bernicla bernicla</i>; and</li> <li>○ Black-tailed godwit <i>Limosa limosa islandica</i>.</li> </ul>
Colne Estuary	<p><b>Ramsar criterion 1</b> The site is important due to the extent and diversity of saltmarsh present. This site, and the four other sites in the Mid-Essex Coast complex, includes a total of 3,237ha that represent 70% of the saltmarsh habitat in Essex and 7% of the total saltmarsh in Britain.</p> <p><b>Ramsar criterion 2</b> The site supports 12 species of nationally scarce plants and at least 38 British Red Data Book invertebrate species.</p> <p><b>Ramsar criterion 3</b> The site supports a full and representative sequence of saltmarsh plant communities covering the range of variation in Britain.</p> <p><b>Ramsar criterion 5</b> Qualifying species/populations (as identified at designation) <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ 32,041 waterfowl (5 year peak mean).</li> </ul> <p><b>Ramsar Criterion 6</b> Qualifying species/populations (as identified at designation) <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ Dark-bellied Brent goose <i>Branta bernicla bernicla</i>; and</li> <li>○ Common redshank <i>Tringa totanus totanus</i>.</li> </ul>
Crouch and Roach Estuaries	<p><b>Ramsar criterion 2</b> Supports an appreciable assemblage of rare, vulnerable or endangered species or subspecies of plant and animal including 13 nationally scarce plant species.</p> <p><b>Ramsar criterion 5</b> Assemblages of national importance: <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ 16970 waterfowl (5 year peak mean 1998/99-2002/2003).</li> </ul> <p><b>Ramsar criterion 6</b> Qualifying species/populations (as identified at designation) <i>Species with peak counts in winter:</i></p>

Ramsar Sites	Site Features
Blackwater Estuary	<ul style="list-style-type: none"> <li>○ Dark-bellied Brent goose <i>Branta bernicla bernicla</i>.</li> </ul> <p><b>Ramsar criterion 1</b> The site is important due to the extent and diversity of saltmarsh present. This site, and the four other sites in the Mid-Essex Coast complex, includes a total of 3,237ha that represent 70% of the saltmarsh habitat in Essex and 7% of the total saltmarsh in Britain.</p> <p><b>Ramsar criterion 2</b> Well represented invertebrate fauna that includes at least 16 British Red Data Book species.</p> <p><b>Ramsar criterion 3</b> The site supports full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.</p> <p><b>Ramsar criterion 5</b> Assemblages of national importance: <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ 105,061 waterfowl (5 year peak mean).</li> </ul> <p><b>Ramsar criterion 6</b> Qualifying species/populations (as identified at designation) <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ Dark-bellied Brent goose <i>Branta bernicla bernicla</i>;</li> <li>○ Grey Plover <i>Pluvialis squatarola</i>;</li> <li>○ Dunlin <i>Calidris alpina alpina</i> and</li> <li>○ Black-tailed godwit <i>Limosa limosa islandica</i>.</li> </ul>
Dengie	<p><b>Ramsar criterion 1</b> This site, and the four others in the Mid-Essex Coast complex, includes a total of 3,237ha that represent 70% of the saltmarsh habitat in Essex and 7% of the total area of saltmarsh in Britain.</p> <p><b>Ramsar criterion 2</b> The site supports a number of rare plant and animal species including 11 nationally scarce plants and three British Red Data Book species.</p> <p><b>Ramsar criterion 3</b> This site supports a full and representative sequence of saltmarsh plant communities covering the range of variation in Britain.</p> <p><b>Ramsar criterion 5</b> Qualifying species / populations (as identified at designation): <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ 43,828 waterfowl (5yr peak mean).</li> </ul> <p><b>Ramsar criterion 6</b> Qualifying species / populations (as identified at designation): <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ Dark-bellied Brent goose <i>Branta bernicla bernicla</i>;</li> <li>○ Grey plover <i>Pluvialis squatarola</i>; and</li> <li>○ Red knot <i>Calidris canutus islandica</i>.</li> </ul>
Benfleet & Southend Marshes	<p><b>Ramsar criterion 5</b> Qualifying species / populations (as identified at designation): <i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ 32,867 waterfowl (5yr peak mean).</li> </ul> <p><b>Ramsar criterion 6</b> Qualifying species / populations (as identified at designation): <i>Species with peak counts in spring/autumn:</i></p> <ul style="list-style-type: none"> <li>○ Dark-bellied Brent goose <i>Branta bernicla bernicla</i>.</li> </ul> <p><i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ Grey plover <i>Pluvialis squatarola</i>; and</li> <li>○ Red knot <i>Calidris canutus islandica</i>.</li> </ul>

Ramsar Sites	Site Features
Foulness	<p><b>Ramsar criterion 1</b></p> <p>This site, and the four others in the Mid-Essex Coast complex, includes a total of 3,237ha that represent 70% of the saltmarsh habitat in Essex and 7% of the total area of saltmarsh in Britain.</p> <p><b>Ramsar criterion 2</b></p> <p>The site supports a number of nationally-rare and nationally-scarce plant species, and British Red Data Book invertebrates.</p> <p><b>Ramsar criterion 3</b></p> <p>This site supports a full and representative sequence of saltmarsh plant communities covering the range of variation in Britain.</p> <p><b>Ramsar criterion 5</b></p> <p>Qualifying species / populations (as identified at designation):</p> <p><i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ 82,148 waterfowl (5yr peak mean).</li> </ul> <p><b>Ramsar criterion 6</b></p> <p>Qualifying species / populations (as identified at designation):</p> <p><i>Species with peak counts in spring/autumn:</i></p> <ul style="list-style-type: none"> <li>○ Common redshank <i>Tringa totanus totanus</i>.</li> </ul> <p><i>Species with peak counts in winter:</i></p> <ul style="list-style-type: none"> <li>○ Dark bellied brent goose <i>Branta bernicla bernicla</i>;</li> <li>○ Eurasian oystercatcher <i>Haematopus ostralegus ostralegus</i>;</li> <li>○ Grey plover <i>Pluvialis squatarola</i>;</li> <li>○ Bar-tailed godwit <i>Limosa lapponica lapponica</i>; and</li> <li>○ Red knot <i>Calidris canutus islandica</i>.</li> </ul>