

## 2 Strategic Environmental Assessment

### 2.1 Background

Strategic Environmental Assessment (SEA) is the systematic appraisal of the potential environmental consequences of high level decision-making, such as policies, plans, strategies and programmes, before they are approved. The purpose of SEA is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes, with a view to promoting sustainable development.

The requirement to undertake SEA of certain plans and programmes entered European Law in 2001 under Directive 2001/42/EC; transposed into UK law in 2004 by The Environmental Assessment of Plans and Programmes Regulations 2004 (SI 2004 1633)<sup>2</sup>. This SEA has been carried out with cognisance of, and in the spirit of, the following legislation and guidance:

- National Environmental Impact Assessment and Strategic Environmental Assessment Policy, Procedures and Guidance (Environment Agency, 2004 Environment Agency management system controlled documentation).
- Flood and Coastal Defence Project Appraisal Guidance (PAG) 2: Strategic Planning and Appraisal (Defra, 2001).
- Flood and Coastal Defence Project Appraisal Guidance (PAG) 5: Environmental Appraisal (MAFF, 2000).
- The Strategic Environmental Assessment Directive: Guidance for Planning Authorities. Practical guidance on applying European Directive 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment' to land use and spatial plans in England ODPM (2003).
- Conservation (Natural Habitats &c.) Regulations 1994 (as amended) and the Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007.
- A Practical Guide to the Strategic Environmental Assessment Directive (ODPM 2005)

There is no legal requirement to undertake SEA for SMPs because they are not deemed to be required by legislation, regulation or administrative provision. However, SMPs do set a framework for future planning decisions, and have the potential to result in significant environmental effects. Further to this, Defra guidance (Defra, September 2004<sup>2</sup>) is that SEA is applied to SMPs and this is Environment Agency policy.

In developing the North Devon and Somerset SMP, the environment has been considered alongside social, technical and economic issues. The SEA process undertaken for the North Devon and Somerset SMP is documented in **Appendix I**. This report demonstrates how the SEA process has been carried out during the development of the North Devon and Somerset SMP and outlines how the SEA Directive's requirements have been met.

The approach for this SMP was to ensure that the environmental assessment process is fully integral to the SMP development, as recommended in the Defra SMP Guidance (2006)<sup>3</sup>. Environmental assessment was therefore carried out in conjunction with and as part of the SMP stages, described in the guidance.

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<sup>2</sup> Nason, S (2004). *Guidance to operating authorities on the application of SEA to Flood Management Plans and Programmes*. Defra, 16<sup>th</sup> September 2004.

<sup>3</sup> Defra (2006): *Shoreline Management Plan Guidance Volumes 1 and 2*

A detailed list of SEA stages and tasks, and their purpose, is shown in Table 2.1 overleaf, which is taken from “A Practical Guide to the Strategic Environmental Assessment Directive” published by the Office of the Deputy Prime Minister in 2005

(<http://www.communities.gov.uk/documents/planningandbuilding/pdf/practicalguidesea.pdf>).

**Table 2.1 SEA stages and tasks (from Office of the Deputy Prime Minister, 2005)**

<b>SEA stages and tasks</b>	<b>Purpose</b>
<b>Setting the context and objectives, establishing the baseline and deciding on the scope</b>	
Identifying other relevant plans, programmes and environmental protection objectives	To establish how the plan or programme is affected by outside factors, to suggest ideas for how any constraints can be addressed, and to help to identify SEA objectives.
Collecting baseline information	To provide an evidence base for environmental problems, prediction of baseline information analysis, setting of the SEA objectives, prediction of effects and monitoring.
Identifying environmental problems	To help focus the SEA and streamline the subsequent stages, including baseline information analysis, setting of the SEA objectives, prediction of effects and monitoring.
Developing SEA objectives	To provide a means by which the environmental performance of the plan or programme and alternatives can be assessed.
Consulting on the scope of SEA	To ensure that the SEA covers the likely significant environmental effects of the plan or programme.
<b>Developing and refining alternatives and assessing effects</b>	
Testing the plan or programme objectives against the SEA objectives	To identify potential synergies or inconsistencies between the objectives of the plan or programme and the SEA objectives and help in developing alternatives.
Developing strategic alternatives	To develop and refine strategic alternatives
Predicting the effects of the plan or programme, including alternatives	To predict the significant environmental effects of the plan or programme and alternatives.
Evaluating the effects of the plan or programme, including alternatives	To evaluate the predicted effects of the plan or programme and its alternatives and assist in the refinement of the plan or programme.
Mitigating adverse effects	To ensure that adverse effects are identified and potential mitigation measures are considered.
Proposing measures to monitor the environmental effects of plan or programme implementation	To detail the means by which the environmental performance of the plan or programme can be assessed.
<b>Preparing the Environmental Report</b>	
Preparing the Environmental Report	To present the predicted environmental effects of the plan or programme, including alternatives. In a form suitable for public consultation and use by decision-makers.
<b>Consulting on the draft plan or programme and the Environmental Report</b>	

SEA stages and tasks	Purpose
Consulting the public and Consultation Bodies on the draft plan or programme and the Environmental Report	To give the public and the Consultation Bodies an opportunity to express their opinions on the findings of the Environmental Report and to use it as a reference point in commenting on the plan or programme. To gather more information through the opinions and concerns of the public.
Assessing significant changes	To ensure that the environmental implications of any significant changes to the draft plan or programme at this stage are assessed and taken into account.
Making decisions and providing information	To provide information on how the Environmental Report and consultees' opinions were taken into account in deciding the final form of the plan or programme to be adopted.
<b><i>Monitoring the significant effects of implementing the plan or programme on the environment</i></b>	
Developing aims and methods for monitoring	To track the environmental effects of the plan or programme to show whether they are as predicted; to help identify adverse effects.
Responding to adverse effects	To prepare for appropriate responses where adverse effects are identified.

These stages are described in greater detail in **Appendix I**. However, the key elements are summarised in the following sub-sections.

## 2.2 Screening and Scoping

Screening determines whether there is a need for SEA for the plan or programme being initiated. In this case there is no legal requirement to apply the 'SEA Regulations' to SMP, but best practice guidelines, and those of Defra, support the preparation of a voluntary SEA for SMPs.

The scoping process (i.e. identification of the environmental receptors likely to be impacted by SMP policies) was undertaken during the production of the Environmental Baseline report (Thematic Review) – see **Appendix D** of the SMP.

Consultation was carried out at the scoping stage with key stakeholders (see **Appendix B 'Stakeholder Engagement'**) including statutory consultees to obtain relevant baseline environmental information and to understand key concerns and issues. The stakeholders were consulted on both the SEA Environmental Baseline Report (Thematic Review) and Issues and Objectives Tables together. The responses received during this consultation phase fed into the prioritisation and importance of SEA receptors in the option appraisal process.

## 2.3 Establish SEA Objectives

A list of SEA objectives for the SMP was developed following identification of key environmental features or assets along the coastline, and through a review of aerial photography, maps and consultation with key external organisations and internal staff. SEA objectives were identified for the SMP to appraise the preferred policy options during the assessment process.

The objectives developed for the SMP, which were used to develop and appraise sustainable policies, are provided in Table 2.2.

Within the environmental objectives, a distinction has been made between those that arise from legal (shown in **bold italics**) and those that do not represent legal obligations. The relevant Strategic Environmental Assessment (SEA) receptor to which the objectives relate, are shown in brackets.

**Table 2.2 SEA Objectives**

	Objective	Features covered by the objective
<b>Social</b>	To avoid loss of property due to erosion and/or manage risk of flooding to people and property. (Population and human health)	Houses Community
	To avoid loss due to erosion of, and manage risk of flooding to, key community, recreational and amenity facilities. (Population and human health)	Key vulnerable community facilities e.g. surgeries, hospitals, aged persons homes, schools, shops, churches and libraries Key amenity facilities e.g. public open space and car parks Key recreational facilities e.g. bathing beaches, swimming pools, country parks, public rights of way, castles and forts Access to community/amenity facilities
<b>Economic</b>	To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. (Population, material assets)	Shops, offices, businesses, factories, warehouses, golf courses, areas identified for regeneration, commercial fishing grounds, caravan parks, stone and mineral extraction sites, military establishments and others areas of employment
	To minimise the impact of policies on marine operations and activities. (Material assets)	Ports, harbours and boatyards Moorings, yacht and sailing clubs, lifeboats and ferry terminals Dredging activities, Coastguard, lifeboat and lifeguard Access to the sea and navigation
	To ensure critical road and rail linkages are maintained. (Material assets)	A, B and minor roads (where linkage is a key issue) Railway lines and stations
	To ensure critical services remain operational. (Material assets)	Pumping stations, sewage works, wind turbines, landfills, power stations and, sub-stations
<b>Environmental</b>	<b><i>To allow natural processes and maintain visibility of geological exposures throughout geological Sites of Special Scientific Interest.</i></b> (Geology and soils)	Geological Sites of Special Scientific Interest
	<b><i>To maintain the integrity of internationally designated sites.</i></b> (Flora, fauna and biodiversity)	United Nations Educational, Scientific and Cultural Organisation (UNESCO) Biosphere Site, Special Protection Areas, Special Area of

	Objective	Features covered by the objective
		Conservation and Ramsar Sites
	<b>To avoid adverse impacts on, conserve and, where practical, enhance the designated interest of nationally designated conservation sites.</b> (Flora, fauna and biodiversity; geology and soils)	Sites of Special Scientific Interest, national nature reserves, marine nature reserves, Exmoor National Park
	To avoid adverse impacts on, conserve and, where practical, enhance the designated interest of locally designated conservation sites. (Flora, fauna and biodiversity; geology and soils)	Local nature reserves County wildlife sites These sites will be considered at a scheme and project level.
	<b>To prevent pollution from contaminated sources.</b> (Geology and soils, water)	Relict landfill sites, disused mines, potentially contaminated land, bathing water, surface and ground water
	<b>To avoid adverse impacts on designated, registered and other nationally, regionally and locally important historic environment assets</b> (Historic Environment)	Scheduled Monuments Registered parks and gardens Listed Buildings Protected wrecks <b>Non-designated archaeology of local or regional importance will be considered, but assessment will occur at a scheme and project level.</b>
	To avoid conflict with <b>Areas of Outstanding Natural Beauty</b> management plan, heritage coast and coastal preservation area objectives. (Landscape)	Areas of Outstanding Natural Beauty Heritage coasts Coastal preservation areas Coastal zones
	To avoid loss due to erosion of and/or manage risk of flooding to agricultural land. (Population, soils)	Grades 1 to 3 farmland
	<b>To achieve compliance with Water Framework Directive objectives.</b> (Water)	Relict landfill sites, potentially contaminated land, bathing water, surface and ground water

## 2.4 Environmental Baseline

Baseline data was collected to provide a baseline against which the significant environmental effects of the plan could be measured and assessed. The current state of the environment is described in the SEA Environmental Baseline 'Theme Review', presented in **Appendix D**, and is summarised in Table 2.3.

**Table 2.3 Environmental Features within the SMP Area**

<b>SEA Receptor</b> described in the Environmental Assessment of Plans and Programmes Regulations SI 2004 1633	<b>Environmental Features</b>
Flora, Fauna and Biodiversity	<p>There are 8 internationally designated sites wholly or partly within the North Devon and Somerset SMP study area. The study area supports a variety of habitats including red sand stone cliffs, mudflats, saltmarsh, estuaries, sand dunes, reedbeds, marshland, woodland, heathland and grassland. The quality of these natural habitats along the coastline is reflected in the designation of the following international nature conservation sites: -</p> <ul style="list-style-type: none"> <li>• 1 UNESCO International Biosphere Reserve Area at Braunton Burrows</li> <li>• 1 Special Protection Areas (SPA) and Ramsar sites in the Severn Estuary</li> <li>• 6 Special Areas of Conservation (SAC) at Lundy Island, Tintagel-Marsland-Clovelly Coast, Braunton Burrows, Exmoor Coastal Heaths, Mendip Limestone Grasslands and Severn Estuary.</li> </ul> <p>There is 1 Marine Nature Reserve with Marine Protected Area; 56 Sites of Special Scientific Interest, 1 National Park, 4 National Nature Reserves, 7 Local Nature Reserves and 130 County Wildlife Sites and 4 Local Wildlife Sites.</p>
Soils and Geology	<p>The geological interest of the coastline includes stratigraphic features, which are reflected in a range of designated earth heritage sites of local, regional, national. Natural erosion is a key driver in maintaining the geological interest of the SSSI designated for geological features by exposing rock sequences in the cliff faces and releasing fossils to the beach.</p> <p>The geomorphology of the area is varied and includes shingle banks, sand dunes and saltmarshes. The major shingle features of national importance are Porlock Weir and Braunton Burrow. There are significant sand dune structures, located at Burnham-on-Sea.</p> <p>Potential areas of known landfills are also present.</p>
Air and Climatic Factors	<p>The long term effects of rising sea levels expected due to climate change could have significant implications for future flood risks to the natural, historic and built environment across large areas of low-lying land in the SMP area.</p>
Water	<p>Within the SMP area, there are 9 Transitional and Coastal Waterbodies, 45 River Waterbodies, 1 Lake Waterbody and 6 Groundwater Bodies. These all have the potential to be affected by SMP policies and are considered further in the WFD Assessment in Appendix K.</p>
Landscape	<p>The coast is composed predominantly of sea cliffs, punctuated by estuaries, cobble beaches, isolated stacks, raised beaches and lagoons. These features owe their variety and interest to the relief and orientation of the coastline, the different properties, lithology and structure of the rocks and coastal processes. The coastline of Devon is internationally renowned for coastal landforms such as Saunton Sands. Other landscape types include developed urban centres and undeveloped agricultural land, much of which exhibits ancient (Medieval) field patterns.</p> <p>The high value of the landscape in the SMP area is recognised by the designation of two Areas of Outstanding Natural Beauty, four Heritage Coasts and the 'UNESCO International Biosphere Reserve Area.</p>

SEA Receptor described in the Environmental Assessment of Plans and Programmes Regulations SI 2004 1633	Environmental Features
Cultural Heritage, including architectural and archaeological heritage	The SMP area contains a complex array of statutory historic buildings (e.g. Scheduled Monuments, Listed Buildings), Registered Parks and Gardens, non-statutory buildings and find spots, historic settlements, maritime archaeology, , Conservation Areas, historic landscapes and numerous unscheduled sites of importance, some of which are nationally important.
Material Assets	Material assets along the coastline of the SMP area comprises a combination of predominantly moderate quality agricultural land, beaches, A- and B-roads, urban areas (see population below), fishing ports and harbours, stone and mineral extraction sites and historic/active landfill sites.
Population and Human Health	Safety, security and social/physical well-being for occupants of properties within areas at coastal flood or erosion risk. Population and properties are concentrated in Westward Ho! Bideford, Appledore, Barnstaple, Braunton, Woolacombe, Ilfracombe, Lynmouth, Minehead, Watchet, Bridgwater, Burnham-on-Sea, Weston-super-Mare, and other smaller towns/villages. Recreation and tourism in the study area is largely centred on the coastline. Land based activities generally rely on the natural environment and comprise swimming, beaches, walking, fishing, bird watching and rock climbing. Water sports are also a popular pursuit particularly surfing and kite surfing.

## 2.5 Assessment Methodology

The process of assessment involves the identification of potential environmental effects and an evaluation of the significance of the predicted environmental effects.

The methodology and appraisal used to identify and predict environmental effects on the SEA receptors and environmental features identified, arising from the SMP is outlined below:

- **Identification of Impacts:** Following the principles of ‘Making Space for Water’ (which is a Defra strategy that applies to England only to improve flood and coastal erosion risk management both for now and in the future), the methodology initially appraised a policy of No Active Intervention throughout the coastline (see **Appendix C**). The implications of No Active Intervention on the features and issues identified were analysed to determine the potential environmental effects on the SEA receptors.

The environmental impacts identified during the No Active Intervention assessment were then compared against the SEA objectives to determine whether SEA objectives have been met, focusing on how and why objectives were (or were not) met. Through consultation with key stakeholders and elected members, key policy drivers were identified (see **Appendix F**). Alternative policy scenarios were appraised where there was a clear need to protect identified assets (see **Appendix G**).

- **Significance of Impacts:** The direct and indirect impacts arising within each SMP epoch (short term, medium term and long term) were identified and assigned a level of strategic significance; either beneficial or adverse. Non strategic impacts and issues not considered to be significant at SMP level were not considered in the SEA. Similarly, the magnitude of SEA impacts was not considered during this high level assessment, as they are not considered to contribute to a meaningful assessment without further study/investigations, assessment and monitoring of SEA receptors.

- Mitigation Measures: These were identified for inclusion in the assessment process, and included avoidance and measures to minimise adverse effects (see Annex 2 **Appendix I**).
- Selection of the Preferred SMP Policy Scenarios – based on the appraisal of policy scenarios, the environmentally preferred policy scenarios were identified. An explanation and justification for the selection of non-environmentally optimal policy scenarios on the basis of technical or economic grounds was also provided (see **Appendix G**).
- Cumulative impacts: the SEA Directive requires the analysis of cumulative effects of the strategic options on the environment (see Section 8 of **Appendix I**).

## 2.6 Consultation

Consultation has been central to the development of the SEA in order to arrive at a SMP that is acceptable to as many parties as possible and to engage those parties in the process. Effective external stakeholder and public engagement has been essential for data collection, identification of key issues, definition of SEA objectives, development of policy scenarios and the selection of the preferred SMP.

A wide range of statutory and non-statutory consultees and stakeholder groups have been involved throughout the development of the SEA and the SMP, primarily through the undertaking of Key Stakeholders Forum (KSF) events at key points throughout the process. This involvement has:

- been undertaken throughout development of the SMP and SEA;
- given stakeholders an opportunity to comment on the environmental appraisal of options;
- allowed representations made by the stakeholders to be taken into account in the selection of policy options; and
- given the public the opportunity to comment on the preferred policies.

The KSF meetings included representatives from, amongst others, local authorities, nature conservation bodies, industry and heritage organisations as well as local residents and land owners. Elected Members were also involved in the development of the SMP, being consulted at key points in the process. In this way, the views of those whom the SMP policies affect were involved in its development, ensuring that all relevant issues were considered and all interests represented.

The interests of landowners and residents have been represented through the involvement of Elected Members, and the views of all stakeholders were sought.

Full details of all stages of stakeholder engagement undertaken during development of the SMP are presented in **Appendix B**.

## 2.7 Reporting

The results of the SEA process are documented in **Appendix I**, which identifies, describes and evaluates the likely effects of the SMP as well as any reasonable alternatives. Appendix I documents the SEA process, sets out how alternative policy options were appraised against environmental objectives and identifies and evaluates likely environmental effects, both positive and negative, of preferred policy options. It sets out how adverse effects will be mitigated and describes recommended follow up actions.



## 2.7.1 Environmental Appraisal of Alternative Policy Options

**Appendix F** (Annex F.3) identifies the environmental impacts of each of the alternative policy options developed through an assessment of the SEA receptors set out in the SEA Directive, and has helped to identify the preferred environmental policy scenario for each coastal process unit. The generic impacts associated with each alternative SMP option is shown in Table 2.4

**Table 2.4** Potential generic implications of each SMP option

SMP option	Potential positive impacts	Potential negative impacts
Hold the Line (HTL)	<ul style="list-style-type: none"> <li>• Protection of communities (residential, industrial, agricultural and commercial assets) and infrastructure</li> <li>• Protection of habitat landward of existing defences</li> <li>• Protection of freshwater resources (e.g. abstractions and boreholes)</li> <li>• Protection of material assets located behind defences</li> <li>• Protection of recreational, cultural and historical assets landward of the defences and provision of opportunities to improve the condition of heritage features/sites</li> <li>• Protection of potential sources of contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Coastal squeeze (loss of intertidal habitat)</li> <li>• Interruption of coastal processes</li> <li>• Potential increase of flood and coastal erosion risk elsewhere along coastline</li> <li>• Promotion of unsustainable land use practices</li> <li>• Ongoing commitment to future investment for maintenance and improvement of defences</li> <li>• Change in landscape character and reduced visual amenity and views of sea if defences raised or new defences constructed</li> </ul>
Advance the Line (ATL)	<ul style="list-style-type: none"> <li>• Provision of additional space for communities</li> <li>• Protection of communities and infrastructure from coastal flooding/erosion</li> <li>• Protection of habitat landward of original defences</li> <li>• Protection of freshwater resources (e.g. abstractions and boreholes)</li> <li>• Protection of material assets located behind defences</li> <li>• Protection of recreational, cultural and historical assets landward of the defences</li> <li>• Protection of potential sources of contamination</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in extent of intertidal habitat</li> <li>• Change in function of the existing habitats</li> <li>• Increased coastal squeeze</li> <li>• Interruption of coastal processes</li> <li>• Potential increase in rate of coastal erosion either side of the advanced line</li> <li>• Uncertainty of effects</li> <li>• Reduced visual amenity and change in landscape</li> </ul>
Managed Realignment (MR)	<ul style="list-style-type: none"> <li>• Landward migration of coastal habitat under rising sea levels to</li> </ul>	<ul style="list-style-type: none"> <li>• Increased flooding/erosion of realigned area</li> </ul>

SMP option	Potential positive impacts	Potential negative impacts
	<p>realigned defence</p> <ul style="list-style-type: none"> <li>• Creation of wetland habitat in line with UKBAP and local BAP targets</li> <li>• Creation of habitat for juvenile fish and other aquatic organisms (benefits to environment and fishing communities)</li> <li>• Reduction of flood/erosion risk to some areas</li> <li>• Promotion of natural coastal processes and contribution towards a more natural management of the coast</li> <li>• Creation of high tide bird roosts and feeding areas</li> <li>• Maintenance of geological exposures and earth heritage features</li> </ul>	<ul style="list-style-type: none"> <li>• Change in condition or reduction of terrestrial/freshwater habitat landward of defences</li> <li>• Impact upon aquifers and abstractions</li> <li>• Loss of some assets in hinterland of defences (e.g. residential, industrial, agricultural and commercial assets)</li> <li>• Loss of recreational, heritage and cultural features</li> <li>• Uncertainty of effects</li> </ul>
No Active Intervention (NAI)	<ul style="list-style-type: none"> <li>• Landward migration of coastal habitats under rising sea levels</li> <li>• Promotion or continuation of natural coastal processes</li> <li>• Potential discovery of unknown archaeology</li> <li>• Maintenance of geological exposures and earth heritage features</li> </ul>	<ul style="list-style-type: none"> <li>• Uncontrolled flood/erosion risk</li> <li>• Uncertainty of effects and time for adaptation</li> <li>• Increased risk of inundation to landward habitats under rising sea levels</li> <li>• Impact upon aquifers and abstractions</li> <li>• Loss of communities or community assets</li> <li>• Loss of and damage to heritage and cultural features</li> <li>• Risk of flooding/erosion of contaminated areas</li> <li>• Deteriorating defences become unsightly</li> <li>• Hazard to public access and loss of public rights of way.</li> </ul>

### 2.7.2 Environmental Effects of the Plan

An environmental assessment of the preferred policy options is presented in Annex I.1 of **Appendix I 'SEA'** and the results are summarised in the Policy Statement tables in Section 5.

### 2.7.3 Water Framework Directive

A retrospective Water Framework Directive (WFD) assessment has been prepared and can be viewed in **Appendix K 'Water Framework Directive Assessment'** of the SMP. This WFD-related retrospective assessment takes into consideration the potential effects of SMP policy options on the ecological quality elements of the coastal and transitional water bodies directly affected by the SMP, and the associated river water bodies.

For many of the policy units, it is considered unlikely that the proposed policies will affect the current or target Ecological Status (or Potential) of the relevant WFD waterbodies. However, there are 3 Management Areas where the proposed policies have the potential not to meet one or more the Environmental Objectives. These being:

- Foreland Point to Hurlestone Point – Potential to fail WFD 2 & 4.
- Hinkley Point – Potential to fail WFD 2 & 3.
- Hinkley Point to Stolford – Potential to fail WFD 3.

These Management Areas have the potential to fail Environmental Objective WFD2 & 3 because of the loss of intertidal habitats in the mid to long term due to coastal squeeze, where the vital and extensive infrastructure of Hinkley Point nuclear power station is to be defended (i.e. Imperative Reasons of Overriding Public Interest (IROPI)). However there is the opportunity to provide mitigation for this in other part of the estuary. Foreland Point to Hurlestone Point has potential to fail WFD 2 & 4 because of the presence of an old landfill site and an SMP policy of NAI. However, mitigation measures for this are being explored by the National Trust's Adaptations Study.

None of the Groundwater Bodies is considered at risk of saline intrusion with regard to its chemical status. Further strategies and studies in this area will have to take this into regard in future to ensure the Environmental Objectives are not compromised.

There are no High Status sites in the SMP area, so Environmental Objective WFD1 (no changes affecting High Status sites) is not applicable for this assessment.

There are several recommendations to look into where SMP boundaries could change to match those of the WFD Waterbody boundaries, notably at Westward Ho!, Northam Burrows, Hinkley Point and Brean Down. However, SMP Management Area boundaries are based on coastal processes and social and economic reasons and are realistically unlikely to change.

### 2.7.4 Habitat Regulations Assessment

As many of the proposed SMP policies would be implemented within or adjacent to international conservation sites, a Habitats Regulations Assessment (Appendix J 'Habitats Regulations Assessment') has been undertaken in accordance with the requirements of the EC Habitats Directive (92/43/EEC) and European Union Birds Directive (79/409/EEC) and their implementation in the UK under the Conservation (Natural Habitats &c.) Regulations 1994, under Regulation 48(1) ("Habitats Regulations").

The SMP has the potential to adversely affect the integrity of the Severn Estuary SAC, SPA and Ramsar site. In most cases, the predicted adverse effects will be as a result of coastal squeeze, resulting in the progressive loss of habitats and their associated species as a result of sea level rise against coastal defences. Where a 'hold the line' policy applies within the Severn Estuary SAC, SPA and Ramsar site this will result in the progressive loss of intertidal habitat due to coastal squeeze.

Where a 'no active intervention' policy applies, this should enable natural processes, including the roll back of habitats where sea level rise results in the loss of intertidal areas. However, this may not be the case where habitats are constrained by natural features, such as hard cliffs. In this case, there may be a net loss of intertidal habitats, but it is not considered that this would be the result of SMP policy.

## 2.8 Implementation and Monitoring

The key principles of monitoring are to ensure that the mitigation measures are implemented and effective and to monitor the potentially significant environmental effects identified during the assessment.

**Appendix I** discusses the proposed monitoring of the predicted environmental effects of the plan, which have been reflected and incorporated into the **SMP Action Plan**.

Where the preferred policies for any Policy Unit have specific monitoring/study requirements to clarify uncertainties, this is identified in the relevant 'Policy Unit Statement' (**Section 5**). Detailed monitoring could be undertaken within the existing South-West Strategic Regional Coastal Monitoring Programmes or undertaken as part of coastal defence strategy studies. The latter will also define mitigation requirements.