

Site Improvement Plan

Severn Estuary

Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England and for most sites which straddle the border between England and Wales. This plan has been drawn up as part of the Improvement Programme for England's Natura 2000 sites (IPENS) in conjunction with the LIFE Natura 2000 Programme for Wales. Natura 2000 sites is the combined term for sites designated as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). This work has been financially supported by LIFE, a financial instrument of the European Community.

The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the whole site (in both England and Wales), and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.

The SIP consists of three parts: a Summary table, which sets out the priority Issues and Measures; a detailed Actions table, which sets out who needs to do what, when and how much it is estimated to cost; and a set of tables containing contextual information and links. Once this current programme ends, it is anticipated that Natural England and others, working with landowners and managers, will all play a role in delivering the priority measures to improve the condition of the features on these sites.

The SIP for this cross-border site between England and Wales is based on Natural England and Natural Resources Wales's current evidence and knowledge, and are live, and not legal documents; they will be updated to reflect changes in our evidence/knowledge and as Actions get underway. The information in the SIP will be used to update both England and Wales's contributions to the UK's Prioritised Action Framework (PAF).

The SIPs are not formal consultation documents, but if you have any comments (relating to areas within England and/or Wales) about the SIP or would like more information please email us at IPENSLIFEProject@naturalengland.org.uk, or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or enquiries@naturalengland.org.uk

To contact Natural Resources Wales telephone 0300 065 3000, or email enquiries@naturalresourceswales.gov.uk

This Site Improvement Plan covers the following Natura 2000 site(s)

UK9015022 Severn Estuary SPA

UK0013030 Severn Estuary/ Môr Hafren SAC

Site description

The Severn Estuary is located between Wales and England in south-west Britain. It is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The subtidal seabed is rock and gravel with subtidal sandbanks. The site also supports reefs of the tube forming worm *Sabellaria alveolata*.

The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have one of the highest tidal ranges in the world. A consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK. The tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide-swept sand and rock. The species-poor intertidal invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders and fish.

The site is of importance during the spring and autumn migration periods for waders, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders. The fish fauna is very diverse with more than 110 species identified. The site is of particular importance for migratory fish.

Plan Summary

This table shows the prioritised issues for the site(s), the features they affect, the proposed measures to address the issues and the delivery bodies whose involvement is required to deliver the measures. The list of delivery bodies will include those who have agreed to the actions as well as those where discussions over their role in delivering the actions is on-going.

Priority & Issue	Pressure or Threat	Feature(s) affected	Measure	Delivery Bodies
1 Public Access/Disturbance	Pressure/Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1130 Estuaries, H1170 Reefs, H1330 Atlantic salt meadows, Waterbird assemblage	Identify/reduce impacts of disturbance to birds, and damage to habitats	Canal and River Trust, Devon & Severn Inshore Fisheries Conservation Authority (IFCA), National Trust, Natural England, Wildlife Trust(s), Natural Resources Wales, Association of Severn Estuary Relevant Authorities (ASERA), English & Welsh local authorities
2 Physical modification	Threat	S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad	Reduce, remove (where possible), and prevent barriers to migratory species	Canal and River Trust, Environment Agency, Natural England, Natural Resources Wales, Local Enterprise Partnership (LEP), Severn Rivers Trust

3	Impacts of development	Pressure/ Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Inform strategic planning decisions to minimise impact of development	Natural England, Natural Resources Wales, English & Welsh local authorities
4	Coastal squeeze	Pressure/ Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, Waterbird assemblage	Limit coastal squeeze, provide sustainable coastal defences, improve existing structures, deliver compensatory habitat	Defra, Environment Agency, Natural England, Natural Resources Wales, Welsh Government, English & Welsh local authorities
5	Change in land management	Pressure/ Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1130 Estuaries, H1330 Atlantic salt meadows, Waterbird assemblage	Maintain appropriate levels and timing of grazing, and management of intertidal saltmarsh habitat	Environment Agency, Natural England, Natural Resources Wales, English & Welsh local authorities, Severn Estuary Partnership
6	Changes in species distributions	Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1170 Reefs, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Understand/prepare for changes in species distribution (caused by climate change/other events)	Environment Agency, Natural England, RSPB, Rivers Trust, Natural Resources Wales, Association of Severn Estuary Relevant Authorities (ASERA), Severn Rivers Trust, Severn Estuary Partnership
7	Water Pollution	Pressure/ Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1110 Subtidal sandbanks, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Identify any existing issues and prevent/reduce decline in water and sediment quality (applying relevant measures to all relevant tributaries in England and Wales)	Environment Agency, Natural England, Natural Resources Wales

8	Air Pollution: impact of atmospheric nitrogen deposition	Pressure	A051(NB) Gadwall, H1130 Estuaries, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Develop a Site Nitrogen Action Plan	Not yet determined
9	Marine consents and permits: minerals and waste	Pressure/ Threat	H1110 Subtidal sandbanks, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad	Ensure in combination/cumulative impacts from aggregate extraction, maintenance dredging and disposal are fully considered	Natural England, Ports And Harbour Authority(ies), Crown Estate, Marine Management Organisation (MMO), Centre for Environment, Fisheries and Aquaculture Science (Cefas), Natural Resources Wales
10	Fisheries: Recreational marine and estuarine	Pressure	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Establish levels and location of activity (recreational bait digging and recreational fishing/angling) and potential for impact	Devon & Severn Inshore Fisheries Conservation Authority (IFCA), Natural England
11	Fisheries: Commercial marine and estuarine	Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Identify any threats to site features and habitats from commercial fisheries activity, and establish and ensure compliance with any necessary management measures	Devon & Severn Inshore Fisheries Conservation Authority (IFCA), Environment Agency, Natural England
12	Invasive species	Threat	H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows	Assess the risks from, and control the spread of invasive non-native species	Local Authority(ies), Natural England, Natural Resources Wales

13 Marine litter	Pressure/ Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Investigate sources of marine litter and implement actions for removal/shoreline clean up	Local Authority(ies), Natural England, Marine Management Organisation (MMO), Natural Resources Wales, Recreational user group(s), Welsh Government, Marine Conservation Society (MCS)
14 Marine pollution incidents	Threat	A037(NB) Bewick's swan, A048(NB) Common shelduck, A051(NB) Gadwall, A149(NB) Dunlin, A162(NB) Common redshank, A394(NB) Greater white-fronted goose, H1110 Subtidal sandbanks, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1170 Reefs, H1330 Atlantic salt meadows, S1095 Sea lamprey, S1099 River lamprey, S1103 Twaite shad, Waterbird assemblage	Minimise impact from marine pollution incidents and clean up response	Natural England, Natural Resources Wales, English & Welsh local authorities, Bristol Channel Standing Environment Group (SEG)

Issues and Actions

This table outlines the prioritised issues that are currently impacting or threatening the condition of the features, and the outstanding actions required to address them. It also shows, where possible, the estimated cost of the action and the delivery bodies whose involvement will be required to implement the action. Lead delivery bodies will be responsible for coordinating the implementation of the action, but not necessarily funding it. Delivery partners will need to support the lead delivery body in implementing the action. In the process of developing the SIPs Natural England has approached the delivery bodies to seek agreement on the actions and their roles in delivering them, although in some cases these discussions have not yet been concluded. Other interested parties, including landowners and managers, will be involved as the detailed actions are agreed and delivered. Funding options are indicated as potential (but not necessarily agreed or secured) sources to fund the actions.

1 Public Access/Disturbance

Public access and recreation (including third party activities) may have an impact on bird species sensitive to disturbance, causing displacement from feeding, roosting and moulting areas, and if severe could affect long term survival and population numbers and distributions within the Estuary. There are a wide range of recreational activities within the site (walking, dog walking, horse riding, biking, beach activities, angling, wildfowling, other shooting (eg clay pigeon)) that may cause damage to habitats where pressure is high.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Understand how the Estuary is used and accessed for recreational purposes (water and land based), to inform current management and future development.	Not yet determined	2015-20	Investigation / Research / Monitoring	Local partnership, Local project	Association of Severn Estuary Relevant Authorities (ASERA)	Natural England/ Natural Resources Wales
1B	Understand how the site is currently used by bird populations, identifying key locations (roosting, feeding), and particularly sensitive areas.	£48,000	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Association of Severn Estuary Relevant Authorities (ASERA)
1C	Develop a strategic approach to visitor management, including appropriate zonation to protect undisturbed areas and management plans for major recreational beaches.	Not yet determined	2015-20	Advice: Access Strategy	Not yet determined	English & Welsh local authorities	Canal and River Trust, Natural England/ Natural Resources Wales

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
1D	Undertake a programme of targeted education and awareness raising amongst recreational user groups (angling groups, visitors, local residents, schools etc).	Not yet determined	2015-20	Advice: Education & awareness raising	Not yet determined	English & Welsh local authorities	Devon & Severn Inshore Fisheries Conservation Authority (IFCA), National Trust, Wildlife Trust(s), Natural England/ Natural Resources Wales, Association of Severn Estuary Relevant Authorities (ASERA)
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
1E	Install signage to manage user activities.	Not yet determined	2015-20	Advice: Signage	Local partnership, Local project	English & Welsh local authorities	Natural England/ Natural Resources Wales

2 Physical modification

Modification to water courses and barriers to Annex II migratory fish (and those included in the fish assemblage) in the tributary rivers* are preventing completion of the life cycle and potentially altering the hydrodynamics of the site. This includes existing structures and operations (bridges, power station lagoons, jetties, dredging, flood alleviation) influencing the flow of water, sediments and therefore migration.

*Actions for tributary rivers which are designated as SACs will be detailed in Site Improvement Plans (England/cross-border) or Prioritised Improvement Plans (Wales).

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
2A	Establish where physical modification to watercourses and barriers to migratory fish may be having an adverse impact on site integrity.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Environment Agency

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
2B	Removal of known barriers (weirs in the Rivers Severn and Teme).	£10,000,000+	2015-20	Flood Risk Maintenance Programme: Flood Risk Management - Capital/Improvement Schemes	Defra, EU LIFE, Heritage Lottery Fund (HLF), European Fisheries Fund	Environment Agency	Canal and River Trust, Natural England, Natural Resources Wales, Local Enterprise Partnership (LEP), Severn Rivers Trust
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
2C	Reduce, remove (where possible), and prevent barriers to migratory species in all other tributaries.	Not yet determined	2015-20	Species Recovery Programme	Environment Agency, EU LIFE, Flood Defence Grand in Aid (FDGiA)	Natural England/ Natural Resources Wales	Environment Agency

3 Impacts of development

Strategic planning issue. More rigorous assessment of cumulative, in-combination and offsite impacts (drainage, disturbance, runoff, impacts on managed realignment etc) on sensitive bird species and other habitats and species may be required, given the range of planned development within and adjacent to the Estuary (including residential, transport, energy and other industrial developments).

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
3A	Understand the nature, location and level of the development and activity in and adjacent to the site. Develop a long term strategic resource (eg GIS) to inform management of development (by facilitation the identification of potential impacts on site and beyond) and identification of appropriate mitigation.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	English & Welsh local authorities

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
3B	Inform strategic planning and planning decisions (eg appropriate access to green space or recreational space) to minimise impact of development and other activities (in addition to our statutory functions).	Not yet determined	2015-20	Advice	Not yet determined	Natural England/ Natural Resources Wales	English & Welsh local authorities

4 Coastal squeeze

As sea levels rise, man-made defences are constraining the natural roll back of estuarine habitats, causing squeeze and loss of habitat and having impacts on species dependant upon those habitats (birds: feeding/ roosting, and fish: feeding/ nursery and shelter areas).

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
4A	Continue monitoring into extent of coastal squeeze and need for compensatory habitat, ensuring understanding of changes as sea levels continue to rise.	Not yet determined	2015-2115	Investigation / Research / Monitoring	Wales Coastal Monitoring Centre, National Coastal Monitoring Programme	Environment Agency/ Natural Resources Wales	Natural England

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
4B	Using outcomes of monitoring, and observed losses, deliver compensatory habitat to offset identified coastal squeeze losses from sea level rise and coastal policy identified within the Severn Estuary Shoreline Management Plan and Flood Risk Management Strategy and the National Habitat Creation Programme through managed realignment of coastal defences to create like-for-like habitat, with the ultimate aim of being designated as SACs and SPAs.	Wales Epoch 1 (166ha) = £32,200,000 English costs are detailed on FRMS	2015-2115	Shoreline Management Plan and Strategies	Not yet determined	Environment Agency/ Natural Resources Wales/ Welsh Government	Natural England, English & Welsh local authorities

5 Change in land management

Changes in management and use of grassland and saltmarsh habitat within and bordering the estuary. Changes in ownership and other land practices can result in changes in management and use of land (eg.changes in grazing practice) which affects species composition, habitat availability, and quality of saltmarsh habitats and use of land for other activities that may cause damage or disturbance.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
5A	Strategic review of the current management and future requirements to ensure saltmarsh and grassland habitats are maintained favourably.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Severn Estuary Partnership (Marine Renewable Energy Knowledge Exchange Programme (MRE-KEP)

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
5B	Investigate alternative means of improving the condition of saltmarsh where the re-introduction of grazing is not feasible.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Severn Estuary Partnership (Marine Renewable Energy Knowledge Exchange Programme (MRE-KEP))
5C	Develop a strategy for the maintenance programme of flood defences and associated land that considers site habitats and species in particular rare plants, saltmarsh and SPA birds, to avoid disturbance and damage.	Not yet determined	2015-20	Flood Risk Maintenance Programme: Flood Risk Management - Operational Work	Not yet determined	Environment Agency/ Natural Resources Wales	Natural England, English & Welsh local authorities
5D	Negotiate management agreements or agri-environment schemes with owners and occupiers to ensure appropriate management.	Not yet determined	2015-20	Advice: Negotiation	Not yet determined	Natural England/ Natural Resources Wales	n/a
5E	Establish a water level management plan at Slimbridge.	Not yet determined	2015-20	Water Level Management Plan	Not yet determined	Lower Severn IDB	Wildfowl and Wetlands Trust

6 Changes in species distributions

There is a risk of significant changes in estuarine populations (including declines in some SPA bird populations) in parts of the Estuary resulting from climate change and other man-made and natural modifications to on- and offsite environments. In many cases the causes of the changes to species distribution are unknown.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
6A	Carry out research and monitoring to understand changes in extent and distribution of species supported by the Severn Estuary, due to climate change and other causes.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Environment Agency, RSPB, Association of Severn Estuary Relevant Authorities (ASERA), Severn Rivers Trust, Severn Estuary Partnership
6B	Advise on other management plans and strategies in light of the above research and monitoring.	Not yet determined	2015-20	Advice	Not yet determined	Natural England/ Natural Resources Wales	n/a
6C	Review SSSI boundaries and features, and any relevant conservation objectives in the light of the above research and monitoring.	Not yet determined	2015-20	Designation strategy (SSSI)	Not yet determined	Natural England/ Natural Resources Wales	n/a

7 Water Pollution

There is uncertainty over water quality in the Estuary due to diffuse (including agricultural) or direct pollution (eg. industrial, sewage treatment works, thermal, radioactive). There is a requirement for better understanding of water and sediment quality issues. The Severn River Basin Management Plan identifies that 17 % of the estuarine water bodies in the river basin district currently achieve good ecological status while the others are at moderate status.

Macrophytobenthos (benthic macro algae) have been identified in localised hotspots and may be having adverse impacts on the invertebrate communities there. The extent of issues like this, the presence and mobilisation of a range of contaminants and reasons behind the moderate statuses need to be understood. This includes analysis of current data and consideration of potential issues with contaminants in sediment.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
7A	Identify any existing issues affecting the features of the site: Establish current level of pollution through review of Water Framework Directive (WFD) data including water body status and identified actions.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Environment Agency

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
7B	Review the significance of macroalgal cover and density.	Not yet determined	2015-20	Investigation / Research / Monitoring	Research project	Natural England/ Natural Resources Wales	Environment Agency

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
7C	Characterise the macrophytobenthic diatom extent and biomass (and its association with DIN concentrations), and assess conservation objectives for the site.	Not yet determined	2015-20	Investigation / Research / Monitoring	Research project	Natural England/ Natural Resources Wales	Environment Agency

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
7D	Investigate actual concentrations of contaminants and their significance to the Severn Estuary.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Environment Agency

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
7E	Investigate the decline in bird numbers and the potential relationship to current contamination levels.	Not yet determined	2015-20	Investigation / Research / Monitoring	Research project	Natural England/ Natural Resources Wales	Environment Agency

8 Air Pollution: impact of atmospheric nitrogen deposition

Activities around the Estuary include fertiliser application, potentially dairy and poultry production, road traffic, industry (including power stations), and shipping which are all sources of nitrogen pollution. Nitrogen deposition exceeds site relevant critical loads, with potential impacts on vegetation structure and diversity.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
8A	Control, reduce and ameliorate atmospheric nitrogen impacts.	Not yet determined	2015-20	Site Nitrogen Action Plan	Not yet determined	Not yet determined	Not yet determined

9 Marine consents and permits: minerals and waste

The cumulative impacts of aggregate extraction, maintenance dredging and disposal can have adverse impacts on features. While most activity is regulated under marine licences, cumulative effects are not always fully considered.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
9A	Gain a strategic overview of impacts from current and future marine minerals and waste activities.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Ports And Harbour Authority(ies), Crown Estate, Marine Management Organisation (MMO), Centre for Environment, Fisheries and Aquaculture Science (Cefas)

10 Fisheries: Recreational marine and estuarine

ACTION FOR ENGLISH PART OF SITE ONLY: Further information is required on the levels and location of activity and potential impact of recreational bait digging and recreational fishing/angling. There are unknown impacts in the vicinity of potentially sensitive roosting and feeding areas, and on intertidal reef habitats. This issue will be reviewed in consultation with the Devon & Severn IFCA in the future.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
10A	For Recreational marine and estuarine fisheries: Establish levels and location of activity (recreational bait digging and recreational fishing/angling) and potential for impact. Unknown impacts in the vicinity of potentially sensitive roosting and feeding areas, and on intertidal reef habitats.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Natural England	Devon & Severn Inshore Fisheries Conservation Authority (IFCA)

11 Fisheries: Commercial marine and estuarine

ACTIONS FOR ENGLISH PART OF SITE ONLY: Dredges (inc. hydraulic), benthic trawls and seines are categorised as 'red' for the reef features (specifically the sub-feature *Sabellaria spp.* reef) as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS). A bye-law is now in place to address this and is being implemented by Devon & Severn IFCA (D&S IFCA).

Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in EMSs require assessment and (where appropriate) management. This assessment will be undertaken by D&SIFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
11A	For Red activities (Reef): Ensure compliance with bye-law and provide an appropriate level of reporting to ensure sites are well managed and to enable Natural England to provide advice on the condition of features and potential condition threats. Ongoing action.	Not yet determined	2015-17	Regulation: Creation / amendment of byelaws	Not yet determined	Natural England	Devon & Severn Inshore Fisheries Conservation Authority (IFCA)

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
11B	For Amber (all): Where the assessments indicate management is required, introduce appropriate measures.	Not yet determined	2015-17	Regulation: Other - obtain appropriate permissions	Not yet determined	Natural England	Devon & Severn Inshore Fisheries Conservation Authority (IFCA), Environment Agency
11C	For Amber (all): If management measures are established, ensure compliance with bye-law and provide an appropriate level of reporting to ensure sites are well managed and to enable Natural England to provide advice on the condition of features and potential condition threats. Ongoing action.	Not yet determined	2015-17	Regulation: Other - obtain appropriate permissions	Not yet determined	Natural England	Devon & Severn Inshore Fisheries Conservation Authority (IFCA), Environment Agency
11D	Carry out enforcement activities where impacts/issues are known and understood.	Not yet determined	2015-17	Enforcement	Not yet determined	Environment Agency	n/a

12 Invasive species

There are recent reports of marine invasive non-native species (the Australian barnacle *Austrominius modestus*, Mitten crab *Eriocheir sinensis*, and the Pacific Oyster *Crassostrea gigas*) in the Estuary (or the Bristol Channel). These could have an impact on native species and habitats but the abundance and impact in the Severn Estuary of these species is unclear.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
12A	Periodically review the risks from and control spread of invasive non-native species.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	n/a

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
12B	Control of identified invasive non-native species (eg Sea buckthorn, Japanese rose) at Bridgwater Bay, Sand Bay, Berrow Dunes and Weston-super-Mare beach.	£10,000	2015-20	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Natural England/ Natural Resources Wales	Local Authority(ies)
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
12C	Develop and implement biosecurity measures to reduce likelihood of introduction and spread of marine invasive non-native species which could lead to impacts on Natura 2000 features of sites.	Not yet determined	2015-20	Bio-security plan	Not yet determined	Not yet determined	Not yet determined

13 Marine litter

The marine environment is a sink for man-made litter which often originates from rivers. Impacts are not fully understood.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
13A	Investigate the source of, and impacts from man-made marine litter.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Local Authority(ies), Recreational user group(s), Marine Conservation Society (MCS)
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
13B	Investigate the feasibility of incentives to fishermen to bring back any litter generated or found at sea (Fishing for litter projects). This could involve fishing vessels, ports, harbours and marinas (suitability of waste facilities would need to be considered).	£15,000	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Marine Management Organisation (MMO), Welsh Government

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
13C	Beach cleans (including timings), litter collection from rivers, litter control in peak seasons, controlling fly-tipping, and educational programmes to change behaviour.	Not yet determined	2015-20	Advice: Education & awareness raising	Not yet determined	English & Welsh local authorities	Local Authority(ies), Recreational user group(s), Marine Conservation Society (MCS)

14 Marine pollution incidents

Marine pollution incidents and responses to such incidents have the potential for significant negative impacts on the site and its features. Emergency planning and implementation (ensuring an estuary-wide plan is in place, with all necessary partners signed up) are key to avoiding/reducing such impacts.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
14C	Inform and develop an Estuary-wide contingency plan.	Not yet determined	2014-20	Partnership agreement	Not yet determined	English & Welsh local authorities	Natural England, Natural Resources Wales, Bristol Channel Standing Environment Group (SEG)

Site details

The tables in this section contain site-relevant contextual information and links

Qualifying features

#UK Special responsibility

Severn Estuary SPA

Waterbird assemblage

A394(NB) *Anser albifrons albifrons*: Greater white-fronted goose

A037(NB) *Cygnus columbianus bewickii*: Bewick swan

A048(NB) *Tadorna tadorna*: Common shelduck

A051(NB) *Anas strepera*: Gadwall

A149(NB) *Calidris alpina alpina*: Dunlin

A162(NB) *Tringa totanus*: Common redshank

Severn Estuary/ Môr Hafren SAC

H1170 Reefs

H1130 Estuaries

H1140 Mudflats and sandflats not covered by seawater at low tide

H1110 Sandbanks which are slightly covered by sea water all the time

S1099 *Lampetra fluviatilis*: River lamprey

S1095 *Petromyzon marinus*: Sea lamprey

S1103 *Alosa fallax*: Twaite shad

H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Site location and links

Severn Estuary SPA

Area (ha) **24662.98**

Grid reference **ST267479**

[Map link](#)

Local Authorities

Bro Morgannwg/ Vale of Glamorgan; Caerdydd/ Cardiff; Casnewydd/ Newport; City of Bristol; Fynwy/

Monmouthshire; Gloucestershire; North Somerset; Somerset; South Gloucestershire

Site Conservation Objectives

Site Conservation Objectives (covers area in England)

[European Site Conservation Objectives for Severn Estuary SPA](#)

Site Conservation Objectives (covers area in Wales)

[Countryside Council for Wales: The Severn Estuary European Marine Site Regulation 35 Advice](#)

European Marine Site conservation advice

[Severn Estuary EMS](#)

Regulation 33/35 Package

[Regulation 33/35 package link](#)

Marine Management Organisation site plan

[n/a](#)

Severn Estuary/ Môr Hafren SAC

Area (ha) **73715.4** *Grid reference* **ST321748**

[Map link](#)

Local Authorities

Bro Morgannwg/ Vale of Glamorgan; Caerdydd/ Cardiff; Casnewydd/ Newport; City of Bristol; Fynwy/ Monmouthshire; Gloucestershire; North Somerset; Somerset; South Gloucestershire

Site Conservation Objectives

Site Conservation Objectives (covers area in England)

[European Site Conservation Objectives for Severn Estuary SAC](#)

Site Conservation Objectives (covers area in Wales)

[Countryside Council for Wales: The Severn Estuary European Marine Site Regulation 35 Advice](#)

European Marine Site conservation advice

[Severn Estuary EMS](#)

Regulation 33/35 Package

[Regulation 33/35 package link](#)

Marine Management Organisation site plan

[n/a](#)

Water Framework Directive (WFD)

The Water Framework Directive (WFD) provides the main framework for managing the water environment throughout Europe. Under the WFD a management plan must be developed for each river basin district. The River Basin Management Plans (RBMP) include a summary of the measures needed for water dependent Natura 2000 sites to meet their conservation objectives. For the second round of RBMPs, SIPs are being used to capture the priorities and new measures required for water dependent habitats on Natura 2000 sites. SIP actions for non-water dependent sites/habitats do not form part of the RBMPs and associated consultation.

Severn Estuary SPA

River basin

[Severn RBMP](#)

WFD Management catchment

Bristol Avon & North Somerset Streams, Severn Vale, South & West Somerset

WFD Waterbody ID (Cycle 2 draft)

GB108052021210, GB108052021260, GB108052021310, GB108052021331, GB108052021340, GB109052021590, GB109052021600, GB109052021620, GB109052021640, GB109052021660, GB109052027321, GB109052027330, GB109054026620, GB109054026650, GB109054026670, GB109054032530, GB109054032540, GB109054032560

Severn Estuary/ Môr Hafren SAC

River basin

[Severn RBMP](#)

WFD Management catchment

Bristol Avon & North Somerset Streams, Severn Vale, South & West Somerset

WFD Waterbody ID (Cycle 2 draft)

GB108052021210, GB108052021260, GB108052021310, GB108052021331, GB109052021590, GB109052021600, GB109052021620, GB109052021640, GB109052021660, GB109052027321, GB109052027330, GB109054026620, GB109054026650, GB109054026670, GB109054032530, GB109054032540, GB109054032560

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Severn Estuary SPA	River Wye (Lower Wye) SSSI
	Steep Holm SSSI
	Middle Hope SSSI
	Upper Severn Estuary SSSI
	Severn Estuary SSSI
	Bridgwater Bay SSSI
	Severn Estuary SSSI
Severn Estuary/ Môr Hafren SAC	Gwent Levels - Nash and Goldcliff SSSI
	Severn Estuary SSSI
	Upper Severn Estuary SSSI
	Middle Hope SSSI
	River Wye (Lower Wye) SSSI
	River Usk (Lower Usk) SSSI
	Penarth Coast SSSI
	Sully Island SSSI
	Newport Wetlands SSSI
	Bridgwater Bay SSSI
	Gwent Levels - St. Brides SSSI
	Gwent Levels - Whitson SSSI
	Gwent Levels - Redwick and Llandevenny SSSI
	Gwent Levels - Magor and Undy SSSI
Gwent Levels - Rumney and Peterstone SSSI	
National Nature Reserve (NNR)	
Severn Estuary SPA	Bridgwater Bay NNR

Severn Estuary/ Môr Hafren SAC

Bridgwater Bay NNR

Ramsar

Severn Estuary SPA

Severn Estuary

Severn Estuary/ Môr Hafren SAC

Severn Estuary

Special Areas of Conservation (SAC) and Special Protection Areas (SPA)

Severn Estuary SPA	Severn Estuary/ Môr Hafren SAC River Wye SAC
Severn Estuary/ Môr Hafren SAC	Severn Estuary SPA

Other relevant documents and links

Severn Estuary/ Môr Hafren SAC	<u>Devon and Severn Inshore Fisheries and Conservation Authority, Marine and Coastal Access Act 2009 Mobile Fishing Permit Byelaw</u> <u>Devon and Severn Inshore Fisheries and Conservation Authority, Marine and Coastal Access Act 2009 Mobile Fishing Permit Byelaw (specifically Annex 6, Severn SAC: No Demersal Mobile Gear Area)</u>
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<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	19/03/15	



www.naturalengland.org.uk/ipens2000