

Site Improvement Plan

Dee Estuary/Aber Dyfrdwy & Mersey Narrows

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)

- UK0030131 Dee Estuary/ Aber Dyfrdwy SAC**
- UK9020287 Mersey Narrows and North Wirral Foreshore SPA**
- UK9013011 The Dee Estuary SPA**

Site description

The Dee Estuary lies on the boundary between England and Wales on the north-west coast of Britain. It is a large, funnel-shaped, sheltered estuary that supports extensive areas of intertidal sand-flats, mud-flats and saltmarsh. The saltmarshes grade into transitional brackish and swamp vegetation on the upper shore.

The site also includes the three sandstone islands of Hilbre with their important cliff vegetation, maritime heathland and grassland, mussel beds and *Sabellaria*. The site is of major importance for waterbirds. During the winter, the intertidal flats and saltmarshes provide feeding and roosting sites for large populations of ducks and waders. In summer, the site supports breeding populations of two species of terns at levels of European importance. The site is also important during migration periods, particularly for wader populations moving along the west coast of Britain.

This plan also covers the Mersey Narrows and North Wirral Foreshore SPA which is located at the mouths of the Dee and Mersey estuaries. It comprises intertidal habitats at Egremont foreshore, man-made lagoons at Seaforth Nature Reserve and the extensive intertidal flats at North Wirral Foreshore. It supports large numbers of feeding and roosting waders and features an exceptionally high density of wintering Turnstone.

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	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A144(NB) Sanderling, A149(B) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1140 Intertidal mudflats and sandflats, H1310 Glasswort and other annuals colonising mud and sand, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, Waterbird assemblage	Minimise disturbance through wardening, co-ordinated user group and investigation	Local Authority(ies), Natural England, RSPB, Natural Resources Wales, The Angling Trust, ENI UK, Tidal Dee Catchment Partnership, Dee Estuary Voluntary Wardens (DEVW)
2 Changes in species distributions	Pressure	S1395 Petalwort	Restore Petalwort habitat through a habitat creation/ restoration strategy	Natural Resources Wales, Bourne Leisure, ENI UK

3 Invasive species	Pressure/ Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1095 Sea lamprey, S1099 River lamprey	Undertake a programme to investigate, control and reduce invasive species	Cheshire Wildlife Trust, Natural England, North Western Inshore Fisheries Conservation Authority (IFCA), Wirral Borough Council, Natural Resources Wales, Bourne Leisure, ENI UK, North Wales Wildlife Trust
4 Climate change	Pressure/ Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(B) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1140 Intertidal mudflats and sandflats, H1310 Glasswort and other annuals colonising mud and sand, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, Waterbird assemblage	Review likely climate change impacts and identify appropriate adaptation actions	Natural England, RSPB, Natural Resources Wales, Denbighshire Ranger Service
5 Coastal squeeze	Pressure/ Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1395 Petalwort, Waterbird assemblage	Develop planning guidance for emergency coastal repair works	Natural England, Wirral Borough Council, Natural Resources Wales, Flintshire Sir y Fflint

6 Inappropriate scrub control	Pressure	H1210 Annual vegetation of drift lines, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks	Implement a scrub management plan	Cheshire Wildlife Trust, Natural England, Natural Resources Wales, Bourne Leisure, Flintshire Sir y Fflint, ENI UK, Denbighshire County Council
7 Water Pollution	Pressure/ Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A193(B) Common tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1095 Sea lamprey, S1099 River lamprey	Investigate the impacts of current discharges from historic waste sites and the general state of diffuse pollution within the Estuary	Environment Agency, Local Authority(ies), Natural England, Landowner(s), Natural Resources Wales, Tidal Dee Catchment Partnership
8 Fisheries: Commercial marine and estuarine	Pressure/ Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A193(B) Common tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1095 Sea lamprey, S1099 River lamprey	Investigate the impacts of commercial fisheries	Natural England, North Western Inshore Fisheries Conservation Authority (IFCA), Natural Resources Wales, Welsh Government
9 Inappropriate coastal management	Pressure/ Threat	H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H2110 Shifting dunes	Advise on strandline management	Natural England, Wirral Borough Council, Natural Resources Wales

10 Overgrazing	Pressure/ Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, H1330 Atlantic salt meadows	Investigate the current grazing pressures and establish management agreements	Natural England, RSPB, Natural Resources Wales
11 Direct impact from third party	Threat	H1310 Glasswort and other annuals colonising mud and sand	Investigate the extent of Glasswort harvesting	Natural England, Natural Resources Wales
12 Marine litter	Pressure/ Threat	H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2130 Dune grassland, H2190 Humid dune slacks	Investigate the potential for incentives and improved port waste management	Local Authority(ies), Natural England, Wirral Borough Council, Natural Resources Wales, Flintshire Sir y Fflint, Tidal Dee Catchment Partnership
13 Predation	Threat	A193(B) Common tern, A195(B) Little tern	Monitor predator impacts on tern species and develop mechanisms if required	Lancs, Manchester and Nth Merseyside Wildlife Trust, Natural Resources Wales, Denbighshire County Council
14 Planning Permission: general	Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A193(B) Common tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1095 Sea lamprey, S1099 River lamprey, S1395 Petalwort, Waterbird assemblage	Investigate cumulative, in-combination and off-site effects to inform future decision making on planning applications	Not yet determined

15 Marine consents and permits	Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1095 Sea lamprey, S1099 River lamprey, S1395 Petalwort	Natural Resources Wales to review consents in the light of new evidence	Environment Agency, Natural England, Natural Resources Wales
16 Wildfire/ arson	Threat	H1210 Annual vegetation of drift lines, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks	Reduce incidents of deliberate fire through wardening and education	Local Authority(ies), Natural England, Natural Resources Wales, Local constabulary(ies)
17 Air Pollution: impact of atmospheric nitrogen deposition	Pressure	H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1395 Petalwort	Investigate the potential atmospheric nitrogen impacts and consider actions at a strategic and site level to reduce impacts	Natural England, Natural Resources Wales
18 Transportation and service corridors	Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A191(B) Sandwich tern, A193(B) Common tern, Waterbird assemblage	Investigate vessel movements and their impact on bird features	Natural England, Ports And Harbour Authority(ies), Natural Resources Wales

19 Physical modification	Pressure/ Threat	A048(NB) Common shelduck, A052(NB) Eurasian teal, A054(NB) Pintail, A130(NB) Eurasian oystercatcher, A141(NB) Grey plover, A143(NB) Red knot, A149(NB) Dunlin, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A160(NB) Curlew, A162(NB) Common redshank, A177(NB) Little gull, A193(B) Common tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1210 Annual vegetation of drift lines, H1310 Glasswort and other annuals colonising mud and sand, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2190 Humid dune slacks, S1095 Sea lamprey, S1099 River lamprey, S1395 Petalwort	Investigate the impacts of reduced freshwater inputs flushing through the Estuary	Environment Agency, Natural Resources Wales
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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

Direct disturbance to birds as a result of public access and recreation activities (including dog walking, kite surfing, sand yachting, parascending, hovercrafts etc) is a concern.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Explore the possibility of extending the voluntary wardening initiative to other parts of the site, improve signage and the provision of advice to the public. Support one additional cross-border Warden/Stakeholder Engagement Adviser post.	£100,000	2014-20	Advice: Wardening	Not yet determined	Not yet determined	RSPB, Wirral Borough Council, Flintshire Sir y Fflint, Dee Estuary Voluntary Wardens (DEVW)
1B	Develop a coordinated 'user groups partnership' (including employment of a project officer) to encourage sustainable public use of the Estuary.	£100,000	2014-20	Partnership agreement: Other	Not yet determined	Natural England	Local Authority(ies), RSPB, Natural Resources Wales, Tidal Dee Catchment Partnership
1C	Investigate whether inappropriate vehicle use is illicit.	Not yet determined	2014-16	Investigation / Research / Monitoring	Not yet determined	Natural England	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>
1D	Investigate appropriate regulatory measures and implement them where necessary to manage impact of public access and disturbance.	Not yet determined	2014-20	Investigation / Research / Monitoring	No funding required	Natural England/ Natural Resources Wales	Local Authority(ies)
1E	Investigate the impact of recreational fishing on feeding wader birds (desk top review) and promote responsible fishing to avoid harm (engagement material).	£15,000	2014-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	The Angling Trust
1F	Explore the possibility of developing/extending wardening scheme to promote public access and disturbance issues (see 1A above) including responsible angling which avoids harm to wading birds and intertidal habitat.	Not yet determined	2014-20	Investigation / Research / Monitoring	Not yet determined	Not yet determined	Not yet determined
1G	Investigate the alternatives to parking on the beach.	Not yet determined	2014-16	Investigation / Research / Monitoring	Not yet determined	Flintshire Sir y Fflint	Natural Resources Wales, ENI UK

2 Changes in species distributions

Petalwort is at high risk as a consequence of sub-optimal habitat conditions in the dune systems where it occurs on the Welsh side of the Dee Estuary SAC. Dune creation and restoration work is required to remedy the situation.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
2A	Restore/create new dune habitat and dune slack habitat for Petalwort.	£15,000	2015-17	Habitat creation / restoration strategy: Habitat restoration	Not yet determined	Natural Resources Wales	Bourne Leisure, ENI UK

3 Invasive species

Terrestrial and freshwater invasive non-native species are affecting the site and include (not exhaustive) *Crassula helmsii*, Giant hogweed, Himalayan balsam, Japanese knotweed, and Clematis. There is also a threat from the spread and increase in density of marine invasive non-native animal species such as the Mitten crab, Asian shore crab, Pacific oyster, Slipper limpet and Wireweed.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
3A	Control and reduce terrestrial and freshwater invasive species and identify the high risk pathways by which they spread.	£70,000	2014-20	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Natural England/ Natural Resources Wales	Wildlife Trust(s), Wirral Borough Council, Bourne Leisure, ENI UK
3B	Working with identified pathways continue to control and monitor marine non-natives. Identify additional pathways and increase local awareness.	£20,000	2014-20	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Natural England/ Natural Resources Wales	Cheshire Wildlife Trust, North Western Inshore Fisheries Conservation Authority (IFCA), North Wales Wildlife 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>
3C	Develop and implement on site biosecurity risk assessments/action plans of biosecurity measures. Adopt appropriate recommendations from the Pathways Project for marine Invasive Non-Native Species.	Not yet determined	2014-16	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Natural England/ Natural Resources Wales	North Western Inshore Fisheries Conservation Authority (IFCA)

4 Climate change

Higher tidal surges and changes to beaches/geomorphology of the estuary are damaging dune systems and threatening nesting tern colonies (via mortality and loss of suitable nesting sites). There is a change in particle size on the intertidal areas as a result of higher energy storms and the erosion of saltmarsh and mudflats features in some areas. The Estuary is filling with sand as a result of natural coastal processes (this is exacerbated by coastal development) such that there is saltmarsh encroachment onto sand and mud flat areas. There may also be potential impacts on the life-cycle of fish features arising from increases in water temperature and changes in rainfall.

<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	Review likely climate change impacts and identify appropriate adaptation actions.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	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>
4B	Safeguard Little tern nests when storms threaten (including investigating alternative nesting sites).	Not yet determined	2015-20	Partnership agreement	Not yet determined	Natural Resources Wales	RSPB, Natural Resources Wales, Denbighshire Ranger Service

5 Coastal squeeze

There are a number of hard defences encroaching onto the foreshore. Moreover the threat of future development, combined with sea level rise may reduce the intertidal habitat and the ability to achieve a succession of the intertidal habitats (roll back). As a result supporting SAC habitats and habitats used by SPA bird features are at risk. There are localised instances of coastal squeeze on the estuary.

<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	Develop guidance for emergency coastal repair works.	Staff costs only	2015-17	Advice: Other	Not yet determined	Natural England/ Natural Resources Wales	Wirral Borough Council, Flintshire Sir y Fflint
<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	Implement and deliver a beach nourishment programme at Talacre Warren as part of a national programme of habitat restoration.	Not yet determined	2015-20	Habitat creation / restoration strategy: Habitat restoration	Not yet determined	Natural Resources Wales	Flintshire Sir y Fflint

6 Inappropriate scrub control

Scrub invasion on the dune systems is suppressing beneficial mobility of the dunes and affecting diversity within the vegetation communities.

<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	Remove scrub to restore more active dune conditions (taking account of flood defence requirements).	£40,000	2014-20	Habitat creation / restoration strategy: Habitat restoration	Not yet determined	Natural England/ Natural Resources Wales	Cheshire Wildlife Trust, Natural England, Bourne Leisure, Flintshire Sir y Fflint, ENI UK, Denbighshire County Council

7 Water Pollution

The Dee Estuary may be nutrient enriched (there are currently failures for dissolved inorganic nitrogen and macro algae) and is affected by both diffuse and point sources. The Lower River Dee may also be nutrient enriched, with high phosphate levels and possibly elevated nitrate levels (associated with agricultural sources). There are a number of outfalls (stormwater and industrial overflows) within the vicinity of this site which could have an impact on the site. Industrial sites (including historic sites) surrounding the Estuary pose a risk of diffuse and point source pollution. There is also a risk from unregulated activity which is not fully understood. Moreover, historic waste sites including former collieries, landfills etc are releasing leachate and waste and require action to prevent further pollution. Some of the extent/severity of impacts require further quantification.

<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	Investigate leachate discharges from historic waste sites and assess possible impacts on designated features. Consider increased risk of mobilisation of waste due to sea level rise and increased coastal erosion. Scope costed options to resolve the issues.	£30,000	2014-16	Investigation / Research / Monitoring	Not yet determined	Flintshire Sir y Fflint	Local Authority(ies), Natural England, Landowner(s), 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>
7B	Develop/extend the Lower River Dee Diffuse Water Pollution Plan to the Estuary and consider whether any further measures are required. This may include identifying sources of diffuse pollution, the water quality status of the Estuary and the effects on biological features (including sea and river lamprey).	Not yet determined	2014-16	Investigation / Research / Monitoring	No funding required	Natural Resources Wales	Environment Agency, Natural England, Tidal Dee Catchment Partnership

8 Fisheries: Commercial marine and estuarine

There are a variety of sea fisheries activities occurring in the Estuary which could have an impact on site features. There have been separate risk-based assessments of commercial fishing activities for England and Wales, which have identified the actions below.

In Welsh waters, the NRW Strategic Review of Fishing Issues, which was completed in November 2014, identified commercial fishing impacts and prioritised agreed actions for each Welsh Natura 2000 site.

In English waters, commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in European marine sites are being assessed by the North Western IFCA to determine whether management is required. For activities categorised as 'green', these assessments should take account of any relevant in-combination effects with other fishing activities.

Intertidal handworking (English side only) from vessels and land, crab tiling and bait digging with forks have been identified as possible fisheries activity requiring an appropriate assessment level review across all European Sites. The North Western IFCA are currently undertaking an activity review to inform all assessments which will look at both recreational and commercial activity.

<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	Welsh waters only: Investigate the dynamics and sustainability of trawling fisheries in relation to the estuary feature of the Dee Estuary/Aber Dyfrdwy SAC.	Not yet determined	2014-20	Investigation / Research / Monitoring	Not yet determined	Welsh Government	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>
8B	Welsh waters only: Investigate the impacts of access for sea fish industries (including vehicles and on foot). This issue is due to be considered by a cross-Wales review of unregulated fisheries activities to take place over the next two years. Impacts from assessed activities and management options should also be considered.	£25,000	2014-20	Investigation / Research / Monitoring	Not yet determined	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>
8C	English waters only: Where the North Western IFCA assessments indicate management is required, introduce appropriate measures.	Not yet determined	2016	Mechanism not identified / develop mechanism	Not yet determined	Not yet determined	Natural England, North Western Inshore Fisheries Conservation Authority (IFCA)
8D	English waters only: 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.	Not yet determined	2015 -2020	Mechanism not identified / develop mechanism	Not yet determined	Not yet determined	Natural England, North Western Inshore Fisheries Conservation Authority (IFCA)

9 Inappropriate coastal management

In some locations the inappropriate removal of strand line material, vegetation and raking is considered to be affecting or reducing the potential formation of embryonic dunes and vegetated strandlines.

<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	Influence beach management plans to ensure beach cleaning methods avoid damage (consider best practice from other sites). Develop public awareness of coastal processes and effects of different types of coastal defences.	Not yet determined	2014-16	Advice	No funding required	Not yet determined	Natural England, Wirral Borough Council, Natural Resources Wales

10 Overgrazing

The issue on the site is inappropriate grazing (stock type and/or timing of grazing). Parts of the site are managed for both SAC and SPA features and where these have different sward height preferences it causes a conflict in terms of the level of grazing deemed appropriate for the area. Increased grazing pressure caused by Canada geese, in combination with grazing sheep, could result in overgrazing in parts of the site.

<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>
10A	Investigate existing pressures on managed SAC saltmarsh used by SPA birds and Canada geese, to help inform advice on suitable management practices.	Not yet determined	2014-18	Investigation / Research / Monitoring	No funding required	Natural England/ Natural Resources Wales	RSPB
<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>
10B	Work with landowners to make NRW Management Agreements or Glastir agreements on grazed saltmarsh where appropriate.	Not yet determined	2014-2020	Glastir/ Section 15 Management Agreement	Welsh Government Glastir	Natural Resources Wales	

11 Direct impact from third party

There is a risk that the hand gathering of Glasswort *Salicornia* could increase significantly, resulting in gathering on a commercial scale.

<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>
11A	Assess the impact of large scale commercial removal of <i>Salicornia</i> and if appropriate reduce the scale of removal.	£10,000	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England	Natural Resources Wales

12 Marine litter

Marine litter originating from both the River Dee and the wider environment, accumulates in the Estuary. Litter can smother habitats and plant species and act as an abrasive. It can also entangle, or be digested by birds.

<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>
12A	UK level implementation of the Marine Strategy Framework Directive Programme of Measures for Descriptor 10 (Marine Litter). The Programme of Measures will be developed and implemented by 2020 to deliver targets for UK seas (not including transitional waters).	No cost	2014-20	Mechanism not identified / develop mechanism	Not yet determined	Not yet determined	Local Authority(ies)
12B	Undertake beach cleans, litter collection from the River Dee, litter control in peak seasons and control fly-tipping. Consider delivering this action as part of coordinated local events/projects e.g. Dee Litter Project to include education and awareness raising, working with Keep Wales Tidy, Marine Conservation Society and other local groups.	Not yet determined	2014-20	Partnership agreement	Not yet determined	Not yet determined	Local Authority(ies), Natural England, Wirral Borough Council, Natural Resources Wales, Flintshire Sir y Fflint, Tidal Dee Catchment Partnership
12C	Investigate the possibility of providing incentives to fishermen to bring back any litter generated or found at sea (e.g. Fishing for Litter projects).	Not yet determined	2014-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Tidal Dee Catchment Partnership

<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>
12D	Investigate the inclusion of fishing vessels under the current port waste management regulations and the suitability of current port waste facilities.	Not yet determined	2014-20	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	n/a

13 Predation

Ground and avian predators have an adverse impact upon the site's fragile tern populations.

<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	Maintain species protection measures and monitoring at Gronant. Investigate impact of predators on tern species, including effectiveness of anti-predator fencing.	£10,000	2014-20	Investigation / Research / Monitoring	Not yet determined	Natural Resources Wales	Lancs, Manchester and Nth Merseyside Wildlife Trust, Denbighshire County Council

14 Planning Permission: general

At a strategic planning level, there is a concern that the assessment of cumulative, in-combination and off-site impacts on sensitive bird species and other habitats and species may be inadequate given the range of planned developments (including direct land take, impact of discharges relating to development (air & water), transport and infrastructure provision (transportation and service corridors). There may also be inadequate provision of suitable and sufficient avoidance, mitigation and compensation measures.

<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>
14A	Investigate measures to facilitate the accurate strategic assessment of cumulative, in-combination and off-site effects to inform future decision-making on planning permissions.	£25,000	2014-20	Investigation / Research / Monitoring	Not yet determined	Not yet determined	Not yet determined

15 Marine consents and permits

There are a variety of consented marine activities on the site. Consents may be reviewed at regular points of renewal and/or if new evidence becomes available. In particular, there is new evidence on increased turbidity on feeding SPA birds in the area.

<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>
15A	Investigate consents requiring review.	staff time only	2014-20	Investigation / Research / Monitoring	No funding required	Natural Resources Wales	n/a
15B	Investigate the potential impacts of turbidity on tern feeding.	£10,000	2014-16	Investigation / Research / Monitoring	Not yet determined	Natural Resources Wales	Environment Agency, Natural England

16 Wildfire/ arson

Deliberate fires regularly occur on dune areas and in the upper saltmarsh of the site.

<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>
16A	Reduce the incidents of deliberate fires affecting the dunes and upper marsh habitats through wardening and education.	Not yet determined	2015-20	Advice: Wardening	Not yet determined	Not yet determined	Not yet determined
16B	Reduce the incidents of deliberate fires affecting the dunes and upper marsh habitats through enforcement.	Not yet determined	2015-20	Enforcement	No funding required	Natural England	Local Authority(ies), Natural Resources Wales, Local constabulary(ies)

17 Air Pollution: impact of atmospheric nitrogen deposition

There are a variety of sources of air pollution including from the industrial areas adjacent the Estuary. Nitrogen deposition exceeds site relevant critical loads.

<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>
17A	Investigate the potential atmospheric nitrogen impacts and consider actions at a strategic and site level to reduce impacts.	Not yet determined	2014-20	Site Nitrogen Action Plan	Not yet determined	Natural England	Natural Resources Wales

18 Transportation and service corridors

There is a potential for a significant increase in current levels of vessel activity (e.g. as a result of the servicing of off-shore windfarms) and this has potential to cause disturbance to SPA features.

<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>
18A	Investigate vessel movements and their impacts on SPA features. Identify the 'carrying capacity' and any temporal sensitivity.	Not yet determined	2014-18	Investigation / Research / Monitoring	Not yet determined	Natural England/ Natural Resources Wales	Ports And Harbour Authority(ies)

19 Physical modification

A reduced level of freshwater input flushing into and through the Estuary from the River Dee could potentially be impacting the features however more investigation of this issue is needed.

<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>
19A	Investigate the levels of freshwater flushing into the Estuary and its impacts on designated features including migratory fish. Link to the water pollution investigation (on the eutrophic nature of the Estuary).	Not yet determined	2014-20	Investigation / Research / Monitoring	No funding required	Natural Resources Wales	Environment Agency

Site details

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

Qualifying features

#UK Special responsibility

Dee Estuary/ Aber Dyfrdwy SAC

H1130 Estuaries
H1210 Annual vegetation of drift lines
H1140 Mudflats and sandflats not covered by seawater at low tide
H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts
H1310 Salicornia and other annuals colonising mud and sand
S1395 *Petalophyllum ralfsii*: Petalwort
S1095 *Petromyzon marinus*: Sea lamprey
S1099 *Lampetra fluviatilis*: River lamprey

H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
H2110 Embryonic shifting dunes
H2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")
H2130# Fixed dunes with herbaceous vegetation ("grey dunes")
H2190 Humid dune slacks

Mersey Narrows and North Wirral Foreshore SPA

A177(NB) *Hydrocoloeus minutus*: Little gull
A143(NB) *Calidris canutus*: Red knot
A193(B) *Sterna hirundo*: Common tern

A193(NB) *Sterna hirundo*: Common tern

Waterbird assemblage
A157(NB) *Limosa lapponica*: Bar-tailed godwit
A195(B) *Sterna albifrons*: Little tern

The Dee Estuary SPA

Waterbird assemblage

A048(NB) *Tadorna tadorna*: Common shelduck

A052(NB) *Anas crecca*: Eurasian teal

A054(NB) *Anas acuta*: Northern pintail

A130(NB) *Haematopus ostralegus*: Eurasian oystercatcher

A141(NB) *Pluvialis squatarola*: Grey plover

A143(NB) *Calidris canutus*: Red knot

A149(NB) *Calidris alpina alpina*: Dunlin

A156(NB) *Limosa limosa islandica*: Black-tailed godwit

A157(NB) *Limosa lapponica*: Bar-tailed godwit

A160(NB) *Numenius arquata*: Eurasian curlew

A162(NB) *Tringa totanus*: Common redshank

A191(NB) *Sterna sandvicensis*: Sandwich tern

A193(B) *Sterna hirundo*: Common tern

Site location and links

Dee Estuary/ Aber Dyfrdwy SAC

Area (ha) **15805.89** Grid reference **SJ191819** [Map link](#)

Local Authorities

Cheshire; Sir y Fflint/ Flintshire; Wirral

Site Conservation Objectives

Site Conservation Objectives (covers area in England) [European Site Conservation Objectives for Dee Estuary SAC](#)

Site Conservation Objectives (covers area in Wales) <http://www.ccg.gov.uk/landscape--wildlife/protecting-our-landscape/special-sites-project/the-dee-estuary-european-marine.aspx>

European Marine Site conservation advice

[Dee Estuary EMS](#)

<i>Regulation 33/35 Package</i>	Regulation 33/35 package link
<i>Marine Management Organisation site plan</i>	n/a
Mersey Narrows and North Wirral Foreshore SPA	
<i>Area (ha) 2078.41 Grid reference SJ250920</i>	Map link
<i>Local Authorities</i>	Sefton, Wirral
Site Conservation Objectives	
<i>Site Conservation Objectives (covers area in England)</i>	European Site Conservation Objectives for Mersey Narrows and North Wirral Foreshore SPA
<i>Site Conservation Objectives (covers area in Wales)</i>	
<i>European Marine Site conservation advice</i>	n/a
<i>Regulation 33/35 Package</i>	n/a
<i>Marine Management Organisation site plan</i>	n/a
The Dee Estuary SPA	
<i>Area (ha) 14291.56 Grid reference SJ211800</i>	Map link
<i>Local Authorities</i>	Cheshire; Sir y Fflint/ Flintshire; Wirral
Site Conservation Objectives	
<i>Site Conservation Objectives (covers area in England)</i>	European Site Conservation Objectives for Dee Estuary SPA
<i>Site Conservation Objectives (covers area in Wales)</i>	http://www.ccg.gov.uk/landscape--wildlife/protecting-our-landscape/special-sites-project/the-dee-estuary-european-marine.aspx
<i>European Marine Site conservation advice</i>	Dee Estuary EMS
<i>Regulation 33/35 Package</i>	Regulation 33/35 package link
<i>Marine Management Organisation site plan</i>	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.

Dee Estuary/ Aber Dyfrdwy SAC

River basin	North West RBMP
WFD Management catchment	Mersey Estuary
WFD Waterbody ID (Cycle 2 draft)	n/a

Mersey Narrows and North Wirral Foreshore SPA

River basin	North West RBMP
WFD Management catchment	Mersey Estuary
WFD Waterbody ID (Cycle 2 draft)	n/a

The Dee Estuary SPA

River basin	Dee RBMP
WFD Management catchment	Tidal Dee
WFD Waterbody ID (Cycle 2 draft)	GB111067057050, GB111067057060

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Dee Estuary/ Aber Dyfrdwy SAC	<ul style="list-style-type: none"> North Wirral Foreshore SSSI Dee Estuary/ Aber Afon Dyfrdwy SSSI Gronant Dunes and Talacre Warren SSSI
Mersey Narrows and North Wirral Foreshore SPA	<ul style="list-style-type: none"> Dee Estuary/ Aber Afon Dyfrdwy SSSI North Wirral Foreshore SSSI Mersey Narrows SSSI
The Dee Estuary SPA	<ul style="list-style-type: none"> Dee Estuary/ Aber Afon Dyfrdwy SSSI Shotton Lagoons and Reedbeds SSSI Inner Marsh Farm SSSI Gronant Dunes and Talacre Warren SSSI North Wirral Foreshore SSSI
National Nature Reserve (NNR)	
Dee Estuary/ Aber Dyfrdwy SAC	n/a
Mersey Narrows and North Wirral Foreshore SPA	n/a
The Dee Estuary SPA	n/a
Ramsar	
Dee Estuary/ Aber Dyfrdwy SAC	<ul style="list-style-type: none"> Mersey Narrows & North Wirral Foreshore The Dee Estuary
Mersey Narrows and North Wirral Foreshore SPA	<ul style="list-style-type: none"> Mersey Narrows & North Wirral Foreshore Ribble & Alt Estuaries The Dee Estuary
The Dee Estuary SPA	<ul style="list-style-type: none"> The Dee Estuary

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

Dee Estuary/ Aber Dyfrdwy SAC	n/a The Dee Estuary SPA
Mersey Narrows and North Wirral Foreshore SPA	Sefton Coast SAC Dee Estuary/ Aber Dyfrdwy SAC Ribble & Alt Estuaries SPA The Dee Estuary SPA Liverpool Bay/ Bae Lerpwl SPA
The Dee Estuary SPA	Dee Estuary/ Aber Dyfrdwy SAC

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