

# Site Improvement Plan

## Humber Estuary

Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 sites (IPENS). 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 site(s) 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 SIPs are based on Natural England's current evidence and knowledge. The SIPs are not legal documents, they are live documents that will be updated to reflect changes in our evidence/knowledge and as actions get underway. The information in the SIPs will be used to update England's contribution to the UK's Prioritised Action Framework (PAF).

The SIPs are not formal consultation documents, but if you have any comments about the SIP or would like more information please email us at [IPENSLIFEProject@naturalengland.org.uk](mailto: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](mailto:enquiries@naturalengland.org.uk)

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

**UK0030170 Humber Estuary SAC**

**UK9006111 Humber Estuary SPA**

## Site description

The Humber Estuary is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Other notable habitats include a range of sand dune types in the outer estuary, together with sub-tidal sandbanks and coastal lagoons. As salinity declines upstream tidal reedbeds and brackish saltmarsh communities fringe the estuary. Significant fish species include river lamprey and sea lamprey which migrate through the estuary to breed in the rivers of the Humber catchment. Grey seals come ashore in autumn to form large breeding colonies on the sandy shores of the south bank around Donna Nook.

The estuary is used by many species of wintering and passage waterbirds attracted by the different habitats of the SPA. For example, the sandy sediments of the outer estuary typically attract knot and grey plover, while waterfowl prefer the wetland zones of the upper estuary. At high tide, large mixed flocks congregate in key roost sites which are at a premium due to the combined effects of extensive land claim, coastal squeeze and lack of grazing marsh and grassland on both banks of the estuary. In summer, the site supports important breeding populations of Bittern, Marsh harrier, Avocet and Little tern.

A number of developing managed realignment sites on the estuary are providing replacement habitats which contribute to the variety of habitats available to the bird features.

## 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 Water Pollution	Pressure/Threat	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, S1095 Sea lamprey, S1099 River lamprey, Waterbird assemblage	Investigate the effects of poor water quality on designated features	Environment Agency, Natural England, North Lincolnshire District Council, Yorkshire Water Services Ltd, Humber Nature Partnership

2 Coastal squeeze	Threat	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, Waterbird assemblage	Identify opportunities to compensate for the loss of intertidal habitat	Environment Agency, Natural England, Landowner(s)
3 Changes in species distributions	Threat	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, S1095 Sea lamprey, S1099 River lamprey, Waterbird assemblage	Investigate and address the potential changes in distribution and declines of bird and fish numbers	Environment Agency, Lincolnshire Wildlife Trust, Natural England, RSPB, Yorkshire Wildlife Trust, Landowner(s), Humber Nature Partnership, Spurn Bird Observatory, South Holderness Countryside Society
4 Undergrazing	Pressure	A140(NB) Golden plover, A143(NB) Red knot, A151(NB) Ruff, A156(NB) Black-tailed godwit, A162(NB) Common redshank, H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2160 Dunes with sea-buckthorn, Waterbird assemblage	Introduce grazing to affected areas through the delivery of the new Agri-environment scheme	Natural England, Yorkshire Wildlife Trust, Landowner(s)
5 Invasive species	Threat	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, H1130 Estuaries, H1330 Atlantic salt meadows, Waterbird assemblage	Gain an understanding of the presence of invasive species, and how to address the issue	Environment Agency, Lincolnshire Wildlife Trust, Local Authority(ies), Natural England, RSPB, Yorkshire Wildlife Trust, Landowner(s), Humber Nature Partnership

6 Natural changes to site conditions	Pressure/ Threat	A021(B) Bittern, A021(NB) Bittern, A048(B) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, H1140 Intertidal mudflats and sandflats, Waterbird assemblage	Investigations, to gain an understanding of the changing topography and habitats	Associated British Ports, Environment Agency, Lincolnshire Wildlife Trust, Local Authority(ies), Natural England, North East Lindsey IDB, Yorkshire Wildlife Trust, Humber Nature Partnership
7 Public Access/Disturbance	Pressure	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, H1130 Estuaries, H1330 Atlantic salt meadows, Waterbird assemblage	Work with the recommendations from the Footprint Ecology report to address disturbance issues	Eastern Inshore Fisheries Conservation Authority (IFCA), Environment Agency, Lincolnshire Wildlife Trust, Local Authority(ies), Natural England, North Eastern Inshore Fisheries Conservation Authority (IFCA), RSPB, Yorkshire Wildlife Trust
8 Fisheries: Fish stocking	Pressure	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, Waterbird assemblage	Give advice, and work with other organisations to control fish stocking	Environment Agency, Natural England
9 Fisheries: Commercial marine and estuarine	Pressure	H1140 Intertidal mudflats and sandflats	Indicate where management is necessary and work with organisations to implement these measures	Eastern Inshore Fisheries Conservation Authority (IFCA), Natural England, North Eastern Inshore Fisheries Conservation Authority (IFCA), Marine Management Organisation (MMO)

10 Fisheries: Commercial marine and estuarine	Threat	H1140 Intertidal mudflats and sandflats	Indicate where management is necessary and work with organisations to implement these measures.	Eastern Inshore Fisheries Conservation Authority (IFCA), Natural England, North Eastern Inshore Fisheries Conservation Authority (IFCA), Marine Management Organisation (MMO)
11 Direct land take from development	Threat	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, Waterbird assemblage	Identify mechanisms to remove material from the intertidal and prevent further encroachment	Environment Agency, Local Authority(ies), Natural England
12 Air Pollution: impact of atmospheric nitrogen deposition	Pressure	H1310 Glasswort and other annuals colonising mud and sand, H1330 Atlantic salt meadows, H2110 Shifting dunes, H2120 Shifting dunes with marram, H2130 Dune grassland, H2160 Dunes with sea-buckthorn	Further investigate potential atmospheric nitrogen impact on the site	Not yet determined
13 Shooting/ scaring	Pressure	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, Waterbird assemblage	Investigate unconsented activities and agree an appropriate way forward	Natural England, Landowner(s), British Association for Shooting and Conservation (BASC)

14 Direct impact from third party	Threat	A021(B) Bittern, A021(NB) Bittern, A048(NB) Common shelduck, A081(B) Marsh harrier, A082(NB) Hen harrier, A132(B) Avocet, A132(NB) Avocet, A140(NB) Golden plover, A143(NB) Red knot, A149(NB) Dunlin, A151(NB) Ruff, A156(NB) Black-tailed godwit, A157(NB) Bar-tailed godwit, A162(NB) Common redshank, A195(B) Little tern, H1310 Glasswort and other annuals colonising mud and sand, Waterbird assemblage	Investigate and monitor the collection of Salicornia and implement management when required	Crown Estate (Marine), Natural England, North Eastern Inshore Fisheries Conservation Authority (IFCA), RSPB, Marine Management Organisation (MMO), Humberhead Levels, Humber Nature Partnership
15 Inappropriate scrub control	Pressure	A081(B) Marsh harrier	Implement appropriate habitat management	Natural England, Yorkshire Wildlife Trust, Landowner(s)

## 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 Water Pollution

There is an annual Dissolved Oxygen (DO) sag in the tidal River Ouse which has been present for many years, but has shown improvements more recently due to reductions in pollution. The DO sag means that at certain times of year, the water quality thresholds set out in the conservation objectives for the site are not being met. It is possible that the DO sag may cause a barrier to sea lamprey when they are migrating through the area during the summer months; however there is currently not enough evidence available to draw accurate conclusions of the impact of the DO sag so further research is necessary. Due to the timing of the DO sag, it is unlikely that river lamprey are affected.

There is concern around pollutants leaching from Capper Pass, a former aluminium smelting plant. Several of the Barton and Barrow clay pits on the south bank fail the total Phosphorus (P) target and need lake management plans and nutrient budgets. Many pits have not been tested for water quality but this may be an issue given the impoverished macrophyte communities. Further investigation is needed into the impacts. There is an issue with Tributyltin (TBT) in the sediment, which although possibly historical in origin, may need more investigation, as well as awareness campaigns to prevent the scale of this issue in the future.

<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>
<b>1A</b>	Continuation of the existing projects investigating water quality and preparing nutrient budgets and restoration plans.	£500,000	2016-21	Lake Restoration Project	Water Framework Directive (WFD)	Natural England	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>
<b>1B</b>	Further investigations are needed to find out the cause of water quality issues, such as the Dissolved Oxygen (DO) sag, and the potential impact, if any, this has on designated features. Further investigations are also needed to look into leaching of nutrients and the impact of this.	£200,000	2015-27	Investigation / Research / Monitoring	Not yet determined	Natural England	Environment Agency, Yorkshire Water Services Ltd

<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>
<b>1C</b>	If investigations discover that the DO sag is impacting designated features, work with partners to investigate this further; for example looking at permits and licences	Not yet determined	2015-27	Regulation: Environmental Permits & Licences	Not yet determined	Environment Agency	Natural England, Yorkshire Water Services Ltd
<b>1D</b>	Implement nutrient budgets and management plans for Barton and Barrow Clay Pits.	Not yet determined	2014-18	Investigation / Research / Monitoring	Not yet determined	Natural England	North Lincolnshire District Council, Humber Nature Partnership
<b>1E</b>	Work with the Environment Agency to raise awareness of Tributyltin (TBT) in the estuary, and investigations into the issues that may arise.	Not yet determined	2015-27	Advice: Other	Not yet determined	Environment Agency	Natural England



## 2 Coastal squeeze

The gradual and persistent loss of intertidal habitat due to sea level rise and presence of fixed defences affects every saltmarsh and mudflats where saltmarsh is absent. This is causing a loss of designated SAC features which needs to be addressed. A loss in mudflat can in turn affect SPA bird features that depend on these habitats.

<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>
<b>2A</b>	The Environment Agency has a programme in place for habitat creation through managed realignment. Estuary dynamics means that intertidal habitats are in a constant state of flux, and the existence of fixed defences means that there will be constraints. A project is underway to help develop tools to work with EA more closely and get agreement on where future managed realignment is needed.	Not yet determined	2014-56	Investigation / Research / Monitoring	Not yet determined	Environment Agency	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>
<b>2B</b>	Work with the Environment Agency to, where possible, identify opportunities to enhance the extent of existing and future managed realignment sites.	Not yet determined	2014-56	Habitat creation / restoration strategy: Creation of new habitat	Not yet determined	Environment Agency	Natural England

### 3 Changes in species distributions

There are declines in populations of SPA bird features due to unknown factors. Further investigation is needed to find the cause(s) of the declines and work to address the issues.

River and sea lamprey spawn in freshwater sites many kilometres upstream of the designated site. Further investigations are needed to identify key spawning areas and raise awareness of these areas to prevent deterioration.

<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>
<b>3A</b>	Take forward the recommendations of the Bird Decline project and work with partners to address issues; for example through wardening, habitat creation and restoration and improvements to habitat connectivity	Not yet determined	2015-35	Investigation / Research / Monitoring	Not yet determined	Natural England	Lincolnshire Wildlife Trust, RSPB, Yorkshire Wildlife Trust, Landowner(s), Humber Nature Partnership
<b>3B</b>	Take forward the recommendations from the bird decline project and use it to help inform future management plans	Not yet determined	2015-35	National Nature Reserve (NNR) management plan	Not yet determined	Natural England	Lincolnshire Wildlife Trust, RSPB, Yorkshire Wildlife Trust, Landowner(s), Humber Nature Partnership
<b>3C</b>	Long-term support for the Little tern Protection Scheme.	£40,000	2016-26	Existing Local Project	Not yet determined	n/a	Environment Agency, Natural England, RSPB, Yorkshire Wildlife Trust, Spurn Bird Observatory, South Holderness Countryside Society

<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>
<b>3D</b>	Further investigate the spawning habitats of river and sea lamprey outside of the designated site. Work towards getting the suitable areas mapped and raise awareness of them to prevent deterioration.	£107,500	2016-21	Investigation / Research / Monitoring	Not yet determined	Natural England	Environment Agency, Local Authority(ies), Humber Nature Partnership

#### 4 Undergrazing

Lack of recent grazing by livestock has resulted in suitable habitat no longer being maintained for roosting/loafing SPA birds. Investigation is needed to ensure that any future introduction of grazing would be neutral or beneficial to the saltmarsh and dune SAC 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>
<b>4A</b>	Introduce grazing and/or cutting management to affected areas which will also be beneficial to SAC features. This should be helped by the delivery of the new Agri-environment scheme.	£96,000	2016-21	Rural Development Programme for England (RDPE): Environmental Stewardship Higher Level Scheme (HLS)	Not yet determined	Natural England	Landowner(s)

<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>
<b>4B</b>	Yorkshire Wildlife Trust currently have an Outer Humber Project underway, funded by WREN and YWT which ends in 2014, although there is a request for an extension. Natural England will look into the possibilities to extend this estuary-wide where possible and appropriate.	Not yet determined	2014-21	Existing Local Project	Not yet determined	Yorkshire Wildlife Trust	Natural England, Landowner(s)

## 5 Invasive species

The presence of *Azolla* in the drains at Far Ings is currently being addressed. The presence of Himalayan Balsam is a catchment wide issue and there are localised patches of Giant Hogweed and Japanese Knotweed. Marine invasive species are also present with the slipper limpet and Chinese mitten crab being an issue, however the extent is unknown and more investigation is necessary.

<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>
<b>5A</b>	Design a strategy for appropriate control, treating the invasive plants with herbicides approved for use in or near water. Maintain awareness and control of <i>Azolla</i> at Far Ings ditches using biological control methods such as <i>Azolla</i> weevils. Raise awareness of the spread of invasive species through education. Discussions will be needed with the EA about control and treatment of invasive plants.	Not yet determined	2015-25	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Natural England	Environment Agency, Lincolnshire Wildlife Trust, Local Authority(ies), RSPB, Yorkshire Wildlife Trust, Landowner(s), Humber Nature Partnership
<b>5B</b>	Gain an understanding of the presence and extent of invasive species and design a strategy to raise awareness and use appropriate control..	Not yet determined	2015-25	Investigation / Research / Monitoring	Not yet determined	Yorkshire Wildlife Trust	Natural England, Humber Nature Partnership
<b>5C</b>	Investigations are needed to find out what marine invasive species are present in the estuary and design a strategy to control them. Yorkshire Wildlife Trust are currently monitoring invasive species in the water column in two locations on the estuary. The IPENS project 46 is due to report in July 2014 and will provide baseline records of invasive non-native species in the Humber estuary which can feed into identifying current species extent.	Not yet determined	2015-25	Bio-security plan	Not yet determined	Yorkshire Wildlife Trust	Natural England, Humber Nature Partnership

## 6 Natural changes to site conditions

Changes in the topography and habitats in the inner estuary may lead to a reduction of important habitats such as mudflats. There is evidence of changes including increased growth of *Salicornia* on mudflats. There are also increasing sediment loads within North Killingholm Haven Pits, which is affecting water levels and sluice functioning. The causes are unknown and need further investigation. Storm events in 2013 affected the structure of designated features. Due to climate change, these extreme weather events are more likely to occur and therefore it is important to gain an understanding of the effects of these events on protected habitats.

<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>
<b>6A</b>	To carry out research and gain an understanding of the changing topography and habitats in the estuary. There is a need for a greater understanding of the terrestrial sediment supply and geomorphological changes associated with high sediment loads in the estuary.	Not yet determined	2015-25	Investigation / Research / Monitoring	Not yet determined	Natural England	Associated British Ports, Environment Agency, Lincolnshire Wildlife Trust, Local Authority(ies), Yorkshire Wildlife Trust, Humber Nature 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>
<b>6B</b>	Desilting of outfall of sluice at North Killingholme Haven and installation of water control structure in North Killingholme Drain.	£80,000	2015-21	Flood Risk Maintenance Programme: Flood Risk Management - Operational Work	Flood and Coastal Erosion Risk Management (FCERM) 2015-21	North East Lindsey IDB	Environment Agency, Lincolnshire Wildlife Trust, Landowner(s)
<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>
<b>6C</b>	Investigate the water quality of the west pit at North Killingholme Haven Pits and re-connect with North Pit sluice if appropriate. Monitoring of the water levels and the operation of the sluice is ongoing. Look into funding mechanisms needed for scrub/reed management, potentially through the Conservation Enhancement Scheme (CES).	£15,000	2015-17	Investigation / Research / Monitoring	Water Framework Directive (WFD)	Natural England	Lincolnshire 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>
<b>6D</b>	Replacement of sluice and reinforcement of flood bank at North Killingholme Haven Pits.	£250,000	2015-21	Mechanism not identified / develop mechanism	Not yet determined	Environment Agency	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>
<b>6E</b>	Investigate the impacts of extreme weather events on protected habitats.	Not yet determined	2014 onwards	Investigation / Research / Monitoring	Not yet determined	Natural England	Environment Agency

## 7 Public Access/Disturbance

Recreational disturbance could be contributing to the declines in breeding and migratory bird populations at certain locations including East Halton Skitter, Barton Pits, Faxfleet and Welwick. The floodbank is adjacent to the river and there are many dog walkers, birders and other regularly occurring activities which may be causing disturbance to birds. Offroad vehicles can also cause disturbance to bird 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>
<b>7A</b>	Address and implement the recommendations from the Footprint Ecology disturbance report; for example through awareness raising, designing an access strategy, signage and wardening	Not yet determined	2015-20	Advice	Not yet determined	Humber EMS Management Scheme	Eastern Inshore Fisheries Conservation Authority (IFCA), Environment Agency, Lincolnshire Wildlife Trust, Local Authority(ies), Natural England, North Eastern Inshore Fisheries Conservation Authority (IFCA), RSPB, Yorkshire 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>
<b>7B</b>	Investigation into the potential impact of recreational sea angling and bait digging on public access locations. Eastern IFCA are currently working on a recreational sea angling strategy which could potentially highlight considerations/actions in relation to access and disturbance.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Eastern Inshore Fisheries Conservation Authority (IFCA)	Environment Agency, Lincolnshire Wildlife Trust, Local Authority(ies), Natural England, North Eastern Inshore Fisheries Conservation Authority (IFCA), RSPB, Yorkshire Wildlife Trust, Humber Nature Partnership

## 8 Fisheries: Fish stocking

Several of the clay pits on the south bank of the estuary have active fisheries or have had fisheries in the past and still support non-native fish. The over-stocking of native and non-native fish is destructive to the clay pits freshwater habitat, having a negative impact on water quality and is implicated in the decline of macrophytes and in many of clay pits. The decline in macrophytes and water quality may both negatively impact SPA waterbirds.

<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>
<b>8A</b>	Continue to work with the EA looking at the impact of fish stocking and how to address the issues. Advise the EA on a fish permit scheme for the active fisheries.	Not yet determined	2014 onwards	Advice	Not yet determined	Natural England	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>
<b>8B</b>	Enhancement works and monitoring.	Not yet determined	2014 onwards	Conservation and Enhancement Scheme (CES)	Conservation and Enhancement Scheme (CES)	Natural England	Environment Agency

## 9 Fisheries: Commercial marine and estuarine

Dredges (inc. hydraulic), benthic trawls and seines and shore-based activities are categorised as 'Red' for the mudflats and sandflats not covered by seawater at low tide interest feature (and specifically the sub-feature: Eelgrass communities) as part of Defra's revised approach to commercial fisheries management in EMSs. Requisite mechanisms are being implemented by North Eastern IFCA and Eastern IFCA.

<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>
<b>9A</b>	Introduce a bye-law.	Not yet determined	2014	Enforcement: Byelaws	Not yet determined	North Eastern Inshore Fisheries Conservation Authority (IFCA)	Eastern Inshore Fisheries Conservation Authority (IFCA), Natural England, Marine Management Organisation (MMO)
<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>
<b>9B</b>	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	2014 onwards	Enforcement	Not yet determined	North Eastern Inshore Fisheries Conservation Authority (IFCA)	Eastern Inshore Fisheries Conservation Authority (IFCA), Natural England, Marine Management Organisation (MMO)

## 10 Fisheries: Commercial marine and estuarine

Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in EMSs are being assessed by North Eastern IFCA and Eastern 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.

<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>
<b>10A</b>	Where the assessments indicate management is required, introduce appropriate measures.	Not yet determined	2016	Investigation / Research / Monitoring	Not yet determined	North Eastern Inshore Fisheries Conservation Authority (IFCA)	Eastern Inshore Fisheries Conservation Authority (IFCA), Natural England, Marine Management Organisation (MMO)



## 11 Direct land take from development

An illegal flood defence has been created on the Hessle forshore where material has been dumped.

<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>
<b>11A</b>	Identify a mechanism for the removal of material from intertidal area, and prevent further encroachment.	Not yet determined	2014-17	Mechanism not identified / develop mechanism	Not yet determined	Natural England	Environment Agency, Local Authority(ies)

## 12 Air Pollution: impact of atmospheric nitrogen deposition

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>
<b>12A</b>	Control, reduce and ameliorate atmospheric nitrogen impacts.	Not yet determined	2014-20	Site Nitrogen Action Plan	Not yet determined	Natural England	n/a

## 13 Shooting/ scaring

There is unauthorised wildfowling and game bird management in areas such as Haverfield Quarries. Investigation is needed to understand the extent of the unauthorised wildfowling and the potential impacts on 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>
<b>13A</b>	Investigate unconsented activities and the impacts that these have, if any, on SPA features and agree an appropriate way forward.	Not yet determined	2015-20	Regulation: Compulsory Withdraw/Modify Notice/Consent	Not yet determined	Natural England	Landowner(s), British Association for Shooting and Conservation (BASC)
<b>13B</b>	Work with wildfowling clubs to proactively promote wardening.	Not yet determined	2015-20	Advice: Negotiation	Not yet determined	Natural England	Landowner(s), British Association for Shooting and Conservation (BASC)

#### 14 Direct impact from third party

Commercial scale collection of *Salicornia* occurs near Saltfleetby. There was a proposal in 2013 regarding the harvesting of this species. There are management measures in place through 'Codes of Conduct' but these have had limited management success.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
14A	Investigate and monitor the location and frequency of the collection of <i>salicornia</i> and implement awareness and management when required; for example raising awareness through education and management through byelaws.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England	RSPB, Humberhead Levels, Humber Nature Partnership

#### 15 Inappropriate scrub control

Successional scrub encroachment on grassland and reedbeds at Haverfield Quarries could reduce the likelihood of breeding by the marsh harrier.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
15A	Implement appropriate habitat management.	Not yet determined	2015-20	Conservation and Enhancement Scheme (CES)	Not yet determined	Natural England	Yorkshire Wildlife Trust, Landowner(s)

## Site details

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

### Qualifying features

#UK Special responsibility

#### Humber Estuary SAC

S1364 *Halichoerus grypus*: Grey seal

H1130 Estuaries

H2160 Dunes with *Hippophae rhamnoides*

S1099 *Lampetra fluviatilis*: River lamprey

H2110 Embryonic shifting dunes

H1140 Mudflats and sandflats not covered by seawater at low tide

H2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")

H1150# Coastal lagoons

H2130# Fixed dunes with herbaceous vegetation ("grey dunes")

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

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

H1310 Salicornia and other annuals colonising mud and sand

S1095 *Petromyzon marinus*: Sea lamprey

#### Humber Estuary SPA

A081(B) *Circus aeruginosus*: Eurasian marsh harrier

A082(NB) *Circus cyaneus*: Hen harrier

A132(B) *Recurvirostra avosetta*: Pied avocet

A132(NB) *Recurvirostra avosetta*: Pied avocet

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

Waterbird assemblage

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

A149(NB) *Calidris alpina alpina*: Dunlin

A162(NB) *Tringa totanus*: Common redshank

A151(NB) *Philomachus pugnax*: Ruff

A140(NB) *Pluvialis apricaria* : European golden plover

A143(NB) *Calidris canutus*: Red knot

A195(B) *Sterna albifrons*: Little tern

A021(B) *Botaurus stellaris*: Great bittern

A021(NB) *Botaurus stellaris*: Great bittern

A048(NB) *Tadorna tadorna*: Common shelduck

## Site location and links

### Humber Estuary SAC

Area (ha) **36657.15**      Grid reference **SE838110**      [Map link](#)

Local Authorities      City of Kingston upon Hull; East Riding of Yorkshire; Lincolnshire; North East Lincolnshire; North Lincolnshire

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

European Marine Site conservation advice      [Humber Estuary EMS](#)

Regulation 33/35 Package      [Regulation 33/35 package link](#)

Marine Management Organisation site plan      [n/a](#)

### Humber Estuary SPA

Area (ha) **37630.24**      Grid reference **TA363178**      [Map link](#)

Local Authorities      East Lindsey; East Riding of Yorkshire; City of Kingston upon Hull; North East Lincolnshire; North Lincolnshire

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

European Marine Site conservation advice      [Humber 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.

### Humber Estuary SAC

River basin

[Humber RBMP](#)

WFD Management catchment

Aire and Calder, Don and Rother, Hull and East Riding, Idle & Torne, Louth Grimsby and Ancholme, Lower Trent & Erewash

WFD Waterbody ID (Cycle 2 draft)

GB104026066510, GB104026066530, GB104026066570, GB104026066600, GB104026066660, GB104026066750, GB104026067230, GB104027063400, GB104027064270, GB104028064300, GB104028064310, GB104028064340, GB104029062110, GB104029062140, GB104029062150, GB104029067520, GB104029067530, GB104029067575, GB104029067655, GB104029067660

### Humber Estuary SPA

River basin

[Humber RBMP](#)

WFD Management catchment

Aire and Calder, Don and Rother, Hull and East Riding, Louth Grimsby and Ancholme, Lower Trent & Erewash

WFD Waterbody ID (Cycle 2 draft)

GB104026066510, GB104026066530, GB104026066570, GB104026066600, GB104026066660, GB104026066750, GB104026067230, GB104027063400, GB104027064270, GB104028064310, GB104029062110, GB104029062140, GB104029062150, GB104029067520, GB104029067530, GB104029067575, GB104029067655, GB104029067660

## Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Humber Estuary SAC	Humber Estuary SSSI
Humber Estuary SPA	Humber Estuary SSSI
	North Killingholme Haven Pits SSSI
	The Lagoons SSSI
	Saltfleetby-Theddlethorpe Dunes SSSI

  

National Nature Reserve (NNR)	
Humber Estuary SAC	Donna Nook NNR
	Far Ings NNR
	Spurn NNR
Humber Estuary SPA	Donna Nook NNR
	Far Ings NNR
	Saltfleetby - Theddlethorpe Dunes NNR
	Spurn NNR

  

Ramsar	
Humber Estuary SAC	Humber Estuary
Humber Estuary SPA	Humber Estuary

  

Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Humber Estuary SAC	Humber Estuary SPA
Humber Estuary SPA	Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC
	Humber Estuary SAC

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.1	08/07/15	

[www.naturalengland.org.uk/ipens2000](http://www.naturalengland.org.uk/ipens2000)

