

Site Improvement Plan

Essex Estuaries

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, or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or enquiries@naturalengland.org.uk

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

- UK9009245 Blackwater Estuary (Mid-Essex Coast Phase 4) SPA**
- UK9009243 Colne Estuary (Mid-Essex Coast Phase 2) SPA**
- UK9009244 Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA**
- UK9009242 Dengie (Mid-Essex Coast Phase 1) SPA**
- UK0013690 Essex Estuaries SAC**

Site description

The Essex Estuaries SIP covers the Essex Estuaries SAC and five mid-Essex coast SPAs (Blackwater Estuary, Colne Estuary, Crouch and Roach Estuaries, Dengie and Foulness).

The area is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. Sub-tidal areas have a rich invertebrate fauna and there are extensive intertidal mudflats and sandflats.

Four different saltmarsh features of European importance are represented as well as large areas of grazing marsh. The site is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species.

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 Coastal squeeze	Pressure/ Threat	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A059(B) Common pochard, A082(NB) Hen harrier, A130(NB) Eurasian oystercatcher, A132(B) Avocet, A132(NB) Avocet, A137(B) Ringed plover, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey 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, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1110 Subtidal sandbanks, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1310 Glasswort and other annuals colonising mud and sand, H1320 Cord-grass swards, H1330 Atlantic salt meadows, H1420 Mediterranean saltmarsh scrub, Waterbird assemblage	Investigate impacts on the site to inform development of remedial actions	Colchester Borough Council, Environment Agency, Essex County Council, Maldon District Council, Ministry of Defence (MoD), Natural England, Ports And Harbour Authority(ies), Rochford District Council, Southend-on-Sea Borough Council, Tendring District Council, University(ies), Marine Management Organisation (MMO), Industry, Local yacht club/ Marina

2 Public Access/Disturbance	Pressure	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A059(B) Common pochard, A082(NB) Hen harrier, A130(NB) Eurasian oystercatcher, A132(B) Avocet, A132(NB) Avocet, A137(B) Ringed plover, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey 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, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, Waterbird assemblage	Analyse disturbance effects and manage public access to minimise disturbance	Colchester Borough Council, Environment Agency, Essex County Council, Essex Wildlife Trust, Maldon District Council, Natural England, Ports And Harbour Authority(ies), Rochford District Council, RSPB, Southend-on-Sea Borough Council, Tendring District Council, Marine Management Organisation (MMO)
3 Fisheries: Commercial marine and estuarine	Pressure/Threat	H1110 Subtidal sandbanks, H1130 Estuaries, H1140 Intertidal mudflats and sandflats	Where the assessments indicate management is required, introduce appropriate measures	Kent and Essex Inshore Fisheries Conservation Authority (IFCA), Natural England
4 Planning Permission: general	Pressure	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A082(NB) Hen harrier, A130(NB) Eurasian oystercatcher, A132(NB) Avocet, A137(B) Ringed plover, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey 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	Collate and analyse data to develop guidance for the site	Colchester Borough Council, Environment Agency, Essex County Council, Maldon District Council, Natural England, Rochford District Council, Southend-on-Sea Borough Council, Tendring District Council
5 Changes in species distributions	Threat	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A059(B) Common pochard, A082(NB) Hen harrier, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey plover, A143(NB) Red knot, A151(NB) Ruff, A157(NB) Bar-tailed godwit, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, Waterbird assemblage	Investigate site level and larger scale factors affecting the declining SPA species	Natural England, RSPB, British Trust for Ornithology (BTO)

6 Invasive species	Pressure/ Threat	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A059(B) Common pochard, A082(NB) Hen harrier, A130(NB) Eurasian oystercatcher, A132(B) Avocet, A132(NB) Avocet, A137(B) Ringed plover, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey 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, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1110 Subtidal sandbanks, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1310 Glasswort and other annuals colonising mud and sand, H1320 Cord-grass swards, H1330 Atlantic salt meadows, H1420 Mediterranean saltmarsh scrub, Waterbird assemblage	Investigate impacts of Pacific oyster and other non-native marine species and identify possible management	Essex County Council, Essex Wildlife Trust, Kent and Essex Inshore Fisheries Conservation Authority (IFCA), Natural England, Ports And Harbour Authority(ies), RSPB, Shellfish Association of Great Britain (SAGB)
7 Fisheries: Recreational marine and estuarine	Pressure	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A059(B) Common pochard, A082(NB) Hen harrier, A130(NB) Eurasian oystercatcher, A132(B) Avocet, A132(NB) Avocet, A137(B) Ringed plover, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey 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, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1140 Intertidal mudflats and sandflats, Waterbird assemblage	Investigate the extent of impact of bait digging on the site	Essex County Council, Kent and Essex Inshore Fisheries Conservation Authority (IFCA), Local Authority(ies), Natural England
8 Fisheries: Commercial marine and estuarine	Pressure/ Threat	A046a(NB) Dark-bellied Brent goose, H1130 Estuaries, H1140 Intertidal mudflats and sandflats	Introduce new byelaw for bottom towed gear, and ensure compliance	Kent and Essex Inshore Fisheries Conservation Authority (IFCA), Natural England

9 Fisheries: Commercial marine and estuarine	Pressure/ Threat	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A059(B) Common pochard, A082(NB) Hen harrier, A130(NB) Eurasian oystercatcher, A132(B) Avocet, A132(NB) Avocet, A137(B) Ringed plover, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey 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, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1110 Subtidal sandbanks, H1130 Estuaries, H1140 Intertidal mudflats and sandflats, H1310 Glasswort and other annuals colonising mud and sand, H1320 Cord-grass swards, H1330 Atlantic salt meadows, H1420 Mediterranean saltmarsh scrub, Waterbird assemblage	Investigate and assess potential pressures from private and several fisheries, and identify possible management	Crown Estate (Marine), Essex Wildlife Trust, Kent and Essex Inshore Fisheries Conservation Authority (IFCA), Local Authority(ies), Natural England, Landowner/occupier
10 Invasive species	Pressure	A046a(NB) Dark-bellied Brent goose, A048(NB) Common shelduck, A059(B) Common pochard, A082(NB) Hen harrier, A130(NB) Eurasian oystercatcher, A132(B) Avocet, A132(NB) Avocet, A137(B) Ringed plover, A137(NB) Ringed plover, A140(NB) Golden plover, A141(NB) Grey 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, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1320 Cord-grass swards, Waterbird assemblage	Monitor <i>Spartina anglica</i> and assess effects on interest features.	Environment Agency, Natural England
11 Air Pollution: risk of atmospheric nitrogen deposition	Pressure	A046a(NB) Dark-bellied Brent goose, A191(B) Sandwich tern, A193(B) Common tern, A195(B) Little tern, H1130 Estuaries, H1310 Glasswort and other annuals colonising mud and sand, H1320 Cord-grass swards, H1330 Atlantic salt meadows, H1420 Mediterranean saltmarsh scrub	Investigate potential atmospheric nitrogen impacts	Not yet determined

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 Coastal squeeze

Coastal defences along much of the Essex coastline prevent intertidal habitats from shifting landward in response to rising sea levels. As a result, these habitats are being gradually degraded and reduced in extent, with knock-on effects on the waterbirds and other species they support. 'Managed realignment' schemes and additional intervention measures to create new areas of intertidal habitat and reduce erosion rates are being implemented but more will be needed to offset future losses. Grazing marshes in the SIP area are important for waterbirds and are also threatened by sea level rise because most are near or below mean high tide level, currently protected behind seawalls.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Investigate current and future impacts of coastal squeeze on the site and its interest features in order to prioritise and design remedial actions. The investigation should include analyses of estuary form to identify locations where managed realignment or other interventions would move each estuary towards equilibrium (in terms of sediment movement) and so provide long-lasting benefits for its interest features. Knock-on effects of managed realignment or other schemes on interest features and supporting habitats outside the current intertidal zone need to be factored in. The investigation should also include a detailed comparison of published studies of saltmarsh loss for the estuaries concerned, to assess the extent to which differences between these studies' results reflect real changes in rates of saltmarsh loss, rather than methodological differences.	£60,000	2015-18	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Colchester Borough Council, Essex County Council, Maldon District Council, Ministry of Defence (MoD), Natural England, Ports And Harbour Authority(ies), Rochford District Council, Southend-on-Sea Borough Council, Tendring District Council, University(ies), Marine Management Organisation (MMO), Industry, Local yacht club/ Marina

<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>
1B	Using the results of the investigation above and other studies, review the existing Regional Habitat Creation Programme. Where necessary design new remedial actions such as: managed realignment; beneficial recharge, and other interventions which address the direct and indirect negative effects of sea level rise and coastal squeeze on the N2K interest features of the Essex estuaries (including effects on terrestrial and freshwater habitats supporting SPA species currently protected behind seawalls). Consider available partnership arrangements and funding sources, secure funding and approvals, and implement.	Not yet determined	2015-20	Shoreline Management Plan and Strategies	Not yet determined	Environment Agency	Essex County Council, Local Authority(ies), Ministry of Defence (MoD), Natural England, Southend-on-Sea Borough Council, Marine Management Organisation (MMO)

2 Public Access/Disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities - including boating and watersports, walking, bait-digging, fishing and wildfowling - as well as low-flying aircraft. Some activities, such as powerboating, may produce physical disturbance to habitats. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive.

<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	Collate and analyse the available data on the spatial and temporal distributions within and around the SIP area of (i) SPA bird species; (ii) key habitats and resources that support them, and (iii) potential sources of disturbance. Combine these with information in the literature on species' sensitivities to disturbance to: (a) identify combinations of location, time of year, species and type of disturbance where additional disturbance is likely to produce adverse effects; and (b) identify important knowledge gaps that need to be addressed. Summarise and disseminate the results to delivery partners and others involved in site management in user-friendly formats, such as sensitivity maps and matrices.	£30,000	2015-18	Investigation / Research / Monitoring	Not yet determined	Natural England	Colchester Borough Council, Environment Agency, Essex County Council, Maldon District Council, Ports And Harbour Authority(ies), Rochford District Council, Southend-on-Sea Borough Council, Tendring District Council, Other

<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	Investigate mechanisms to manage public access and minimise disturbance to breeding and overwintering birds, focusing on the most sensitive areas.	£30,000	2017-20	Investigation / Research / Monitoring	Not yet determined	Natural England	Colchester Borough Council, Essex County Council, Essex Wildlife Trust, Kent and Essex Inshore Fisheries Conservation Authority (IFCA), Maldon District Council, Rochford District Council, RSPB, Southend-on-Sea Borough Council, Tendring District Council, Marine Management Organisation (MMO)

3 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 Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) to determine whether management is required. For activities categorised as Amber and Green these assessments should take account of any relevant in combination effects with other fishing activities. Shellfish dredging over subtidal habitats has been identified as an Amber activity and is considered a high priority for assessment and development of possible management for 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>
3A	Where the assessments indicate management is required, introduce appropriate measures.	No cost	2016	Regulation: Creation / amendment of byelaws	n/a	Kent and Essex Inshore Fisheries Conservation Authority (IFCA)	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>
3B	If management measures are established, ensure compliance with byelaw 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.	No cost	2015-20	Enforcement: Byelaws	n/a	Kent and Essex Inshore Fisheries Conservation Authority (IFCA)	Natural England

4 Planning Permission: general

Several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development (perhaps summarised as sensitivity maps and matrices for the SIP area). Difficult issues include:

- (a) Assessing the cumulative effects of numerous, small and often 'non-standard' developments
- (b) Development outside the SPA/SAC boundaries can have negative impacts, particularly on the estuaries' birds
- (c) Assessing the indirect, 'knock-on' effects of proposals
- (d) Pressure to relax planning conditions on existing 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>
4A	Extend the collation and spatial analysis of available data outlined for issue 2 (Public Access/ Disturbance) to include: <ul style="list-style-type: none"> • SAC interest features • variables related to types of development or other activities with potentially adverse effects on SAC or SPA interest features, whether as a result of disturbance or other causes. Summarise and disseminate the results to delivery partners, in particular local planning authorities, in user-friendly formats, such as sensitivity maps and matrices. Identify important knowledge gaps that need to be addressed.	£30,000	2015-18	Investigation / Research / Monitoring	Not yet determined	Natural England	Colchester Borough Council, Environment Agency, Essex County Council, Maldon District Council, Rochford District Council, Southend-on-Sea Borough Council, Tendring District Council

<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	Develop more detailed national guidance for the assessment of potential impacts on SPA waterbirds of new types of development and development pressure close to wetland SPAs (such as solar farms and winter occupancy of caravan parks) and on cumulative and indirect effects.	£2,000	2015-16	Investigation / Research / Monitoring	Not yet determined	Natural England	n/a

5 Changes in species distributions

Declines in the numbers of some of the waterbird species using the Essex Estuaries SIP area may be due to changes in their distributions or population levels at a national or continental scale, possibly linked to climate change. For example, milder winters may be allowing birds to overwinter closer to their northern breeding grounds, or changes on the breeding grounds may be reducing breeding success. When assessing SPA condition, distinguishing these types of large-scale effect from effects produced by changes within the site itself is important.

<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	For SPA species showing declines that British Trust for Ornithology (BTO) Wetland Bird Surveys (WeBS) Alerts (or other readily available information) suggest are at least partly due to site-level effects, analyse any additional evidence on factors likely to be affecting the species within and beyond the Essex Estuaries SIP area in order to assess more accurately the role of site-level changes and identify possible remedial action.	£30,000	2015-18	Investigation / Research / Monitoring	Not yet determined	Natural England	RSPB, British Trust for Ornithology (BTO)

6 Invasive species

An increase in Pacific oyster *Crassostrea gigas* settlement and colonisation within the European Marine Site (EMS) may result in areas of foreshore being covered in such numbers as to make them difficult to access and utilise as feeding grounds for overwintering birds. The importance of Pacific oysters for the local shellfish industry is recognised, however we would not like to see an overall increase in the extent of foreshore across the EMS populated by Pacific oysters. Other non-native invasive species such as the American whelk tingle *Urosalpinx cinerea* and Slipper limpet *Crepidula fornicata* are known to occupy subtidal muddy habitats, potentially impacting native communities through competition for resources and predation.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
6A	Investigate the impacts of Pacific oysters <i>Crassostrea gigas</i> on features and subfeatures of the European Marine Site (EMS), paying particular attention to effects outside historically farmed areas. Other sites affected by Pacific oysters could be included in the study. Other marine non-native invasive species may also be of concern and require investigation. The risk of invasive species transfer by shipping and small boats should be considered.	£22,000	2015-18	Investigation / Research / Monitoring	Natural England	Natural England	Kent and Essex Inshore Fisheries Conservation Authority (IFCA)
Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
6B	Where investigation shows an impact to the condition of site features, management should be investigated with appropriate monitoring put in place.	£30,000	2018-20	Invasive Control Plan: Invasive Species Control Programme	Natural England, GB Non-native Species Secretariat (NNNS)	Natural England	Essex County Council, Essex Wildlife Trust, Ports And Harbour Authority(ies), RSPB, Shellfish Association of Great Britain (SAGB)

7 Fisheries: Recreational marine and estuarine

Recreational bait digging may impact waterbirds by reducing prey availability and creating disturbance in intertidal feeding areas. It could also damage the intertidal mudflats and sandflats and associated sub-features and communities, such as eelgrass beds. The extent of the activity and potential impacts on site features are not currently well understood.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
7A	Investigate the impact of bait digging on the features and subfeatures of the European Marine Site (EMS). This will require determining the extent of bait digging within the EMS and investigate management at a site level if required, placing emphasis on a voluntary code of conduct if possible.	£22,000	2015-20	Investigation / Research / Monitoring	Not yet determined	Essex County Council	Kent and Essex Inshore Fisheries Conservation Authority (IFCA), Local Authority(ies), Natural England

8 Fisheries: Commercial marine and estuarine

Bottom towed fishing gear (i.e. any fishing instrument designed to take sea fisheries resources from the seabed) has been categorised as a 'Red' for the interest features listed, specifically the seagrass beds *Zostera spp*, a sub-feature of the SAC, as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS). Appropriate management measures will be implemented and enforced by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) who have put in place the 'Bottom Towed Fishing Gear Byelaw' within the SAC to prohibit the above fishing gear being used over the majority of known seagrass beds.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
8A	Introduce a byelaw	Nil, part of the IFCA's Statutory work	2015	Regulation: Creation / amendment of byelaws	Not yet determined, Inshore Fisheries Conservation Authority (IFCA)	Kent and Essex Inshore Fisheries Conservation Authority (IFCA)	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>
8B	Ensure compliance with the byelaw 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.	Nil, part of the IFCA's Statutory work	2015-20	Enforcement: Byelaws	Not yet determined, Inshore Fisheries Conservation Authority (IFCA)	Kent and Essex Inshore Fisheries Conservation Authority (IFCA)	Natural England

9 Fisheries: Commercial marine and estuarine

Marine fisheries carried out under private rights, or under management defined in Several or Hybrid Orders, fall outside Defra's revised approach to commercial fisheries management in EMSs. A variety of fishing gears are used in these fisheries (e.g. Hydraulic and non hydraulic dredging and shore based activities (e.g. shellfish collection)) which may be applying pressure to site features, including abrasion of the seabed, visual disturbance, and habitat structure changes. Potential impacts need to be better understood and assessed with potential management introduced if required.

<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	Investigate the impacts of private fisheries on the features and subfeatures on the EMS.	Nil, part of the IFCA's Statutory work	2015-16	Investigation / Research / Monitoring	Inshore Fisheries Conservation Authority (IFCA)	Kent and Essex Inshore Fisheries Conservation Authority (IFCA)	Crown Estate (Marine), Essex Wildlife Trust, Local Authority(ies), Natural England, Landowner/occupier
9B	Where assessments indicate management is required in private fisheries, work with Relevant Authorities, site owners and occupiers to investigate and introduce appropriate regulation and ensure compliance.	Nil, part of the IFCA's Statutory work	2015-20	Regulation: Other - obtain appropriate permissions	Inshore Fisheries Conservation Authority (IFCA)	Kent and Essex Inshore Fisheries Conservation Authority (IFCA)	Natural England

10 Invasive species

The invasive Common cord-grass *Spartina anglica* occurs widely within this site, as well as native Small cord-grass *Spartina maritima* in certain locations, and the site is designated for H1320 *Spartina* swards. There is a need to improve understanding of the dynamics of *S.anglica* on the site in order to determine if changes in the species' distribution adversely affect other species and habitats, including feeding and roosting areas of SPA bird species.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
10A	Set up a monitoring scheme for <i>Spartina</i> species on the site. Use the monitoring results and information from previous studies to assess the effects of changes in <i>S.anglica</i> distribution on the site's SAC and SPA interest features.	£10,000	2015-18	Investigation / Research / Monitoring	Not yet determined	Natural England	Environment Agency
Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
10B	Where monitoring results and information from previous studies indicate a negative impact to EMS features appropriate management should be introduced.	Not yet determined	2018-20	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Natural England	Environment Agency

11 Air Pollution: risk of atmospheric nitrogen deposition

Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a man-made cockle-shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
11A	Further investigate potential atmospheric nitrogen impacts on the site based on application of guidance from Chief Scientist Group Nitrogen Task and Finish Group.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Not yet determined	Not yet determined

Site details

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

Qualifying features

#UK Special responsibility

Blackwater Estuary (Mid-Essex Coast Phase 4) SPA

A137(B) *Charadrius hiaticula*: Ringed plover

A141(NB) *Pluvialis squatarola*: Grey plover

Waterbird assemblage

A149(NB) *Calidris alpina alpina*: Dunlin

A195(B) *Sterna albifrons*: Little tern

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

A082(NB) *Circus cyaneus*: Hen harrier

A046a(NB) *Branta bernicla bernicla*: Dark-bellied brent goose

A059(B) *Aythya ferina*: Common pochard

Colne Estuary (Mid-Essex Coast Phase 2) SPA

A137(B) *Charadrius hiaticula*: Ringed plover

Waterbird assemblage

A195(B) *Sterna albifrons*: Little tern

A162(NB) *Tringa totanus*: Common redshank

A082(NB) *Circus cyaneus*: Hen harrier

A046a(NB) *Branta bernicla bernicla*: Dark-bellied brent goose

A059(B) *Aythya ferina*: Common pochard

Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA

Waterbird assemblage

Dengie (Mid-Essex Coast Phase 1) SPA

A046a(NB) *Branta bernicla bernicla*: Dark-bellied brent goose

A141(NB) *Pluvialis squatarola*: Grey plover

Waterbird assemblage

A143(NB) *Calidris canutus*: Red knot

A082(NB) *Circus cyaneus*: Hen harrier

A046a(NB) *Branta bernicla bernicla*: Dark-bellied brent goose

Essex Estuaries SAC

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

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

H1310 Salicornia and other annuals colonising mud and sand

H1320 Spartina swards (*Spartinion maritimae*)

H1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

Foulness (Mid-Essex Coast Phase 5) SPA

A137(B) *Charadrius hiaticula*: Ringed plover

A141(NB) *Pluvialis squatarola*: Grey plover

Waterbird assemblage

A143(NB) *Calidris canutus*: Red knot

A191(B) *Sterna sandvicensis*: Sandwich tern

A195(B) *Sterna albifrons*: Little tern

A193(B) *Sterna hirundo*: Common tern

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

A162(NB) *Tringa totanus*: Common redshank

A082(NB) *Circus cyaneus*: Hen harrier

A130(NB) *Haematopus ostralegus*: Eurasian oystercatcher

A132(B) *Recurvirostra avosetta*: Pied avocet

A046a(NB) *Branta bernicla bernicla*: Dark-bellied brent goose

Site location and links

Blackwater Estuary (Mid-Essex Coast Phase 4) SPA

Area (ha) **4395.15** Grid reference **TL978100** [Map link](#)

Local Authorities Essex

Site Conservation Objectives [European Site Conservation Objectives for Blackwater Estuary \(Mid-Essex Coast Phase 4\) SPA](#)

European Marine Site conservation advice [n/a](#)

Regulation 33/35 Package [n/a](#)

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

Colne Estuary (Mid-Essex Coast Phase 2) SPA

Area (ha) **2701.43** Grid reference **TM040172** [Map link](#)

Local Authorities Essex

Site Conservation Objectives [European Site Conservation Objectives for Colne Estuary \(Mid-Essex Coast Phase 2\) SPA](#)

European Marine Site conservation advice [n/a](#)

Regulation 33/35 Package [n/a](#)

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

Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA

Area (ha) **1735.58** Grid reference **TQ881970** [Map link](#)

Local Authorities Essex

Site Conservation Objectives [European Site Conservation Objectives for Crouch & Roach Estuaries \(Mid-Essex Coast Phase 3\) SPA](#)

European Marine Site conservation advice [n/a](#)

Regulation 33/35 Package [n/a](#)

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

Dengie (Mid-Essex Coast Phase 1) SPA

Area (ha) **3127.23** Grid reference **TM045033** [Map link](#)

Local Authorities Essex

Site Conservation Objectives [European Site Conservation Objectives for Dengie \(Mid-Essex Coast Phase 1\) SPA](#)

European Marine Site conservation advice [n/a](#)

Regulation 33/35 Package [n/a](#)

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

Essex Estuaries SAC

Area (ha) **46140.82** Grid reference **TM103048** [Map link](#)

Local Authorities Essex

Site Conservation Objectives [European Site Conservation Objectives for Essex Estuaries SAC](#)

European Marine Site conservation advice [Essex Estuaries EMS](#)

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

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

Foulness (Mid-Essex Coast Phase 5) SPA

Area (ha) **10968.9** Grid reference **TR024902** [Map link](#)

Local Authorities Essex

Site Conservation Objectives [European Site Conservation Objectives for Foulness \(Mid-Essex Coast Phase 5\) SPA](#)

European Marine Site conservation advice [n/a](#)

Regulation 33/35 Package [n/a](#)

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.

Blackwater Estuary (Mid-Essex Coast Phase 4) SPA

River basin	Anglian RBMP
WFD Management catchment	Combined Essex
WFD Waterbody ID (Cycle 2 draft)	GB105037033800, GB105037041160

Colne Estuary (Mid-Essex Coast Phase 2) SPA

River basin	Anglian RBMP
WFD Management catchment	Combined Essex
WFD Waterbody ID (Cycle 2 draft)	GB105037034170, GB105037034200, GB105037041310

Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA

River basin	Anglian RBMP
WFD Management catchment	Combined Essex
WFD Waterbody ID (Cycle 2 draft)	GB105037028560, GB105037028570

Dengie (Mid-Essex Coast Phase 1) SPA

River basin	Anglian RBMP
WFD Management catchment	Combined Essex
WFD Waterbody ID (Cycle 2 draft)	n/a

Essex Estuaries SAC

River basin	Anglian RBMP
WFD Management catchment	Combined Essex
WFD Waterbody ID (Cycle 2 draft)	GB105037028560, GB105037028570, GB105037033800, GB105037034170, GB105037034200, GB105037041160, GB105037041310

Foulness (Mid-Essex Coast Phase 5) SPA

River basin	Anglian RBMP
WFD Management catchment	Combined Essex

WFD Waterbody ID (Cycle 2 draft)

n/a

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Blackwater Estuary (Mid-Essex Coast Phase 4) SPA	Blackwater Estuary SSSI
Colne Estuary (Mid-Essex Coast Phase 2) SPA	Upper Colne Marshes SSSI Colne Estuary SSSI
Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA	Crouch & Roach Estuaries SSSI
Dengie (Mid-Essex Coast Phase 1) SPA	Crouch & Roach Estuaries SSSI Dengie SSSI
Essex Estuaries SAC	Upper Colne Marshes SSSI Blackwater Estuary SSSI Foulness SSSI Crouch & Roach Estuaries SSSI Dengie SSSI Colne Estuary SSSI
Foulness (Mid-Essex Coast Phase 5) SPA	Foulness SSSI
National Nature Reserve (NNR)	
Blackwater Estuary (Mid-Essex Coast Phase 4) SPA	Blackwater Estuary NNR
Colne Estuary (Mid-Essex Coast Phase 2) SPA	Colne Estuary NNR
Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA	Dengie NNR
Dengie (Mid-Essex Coast Phase 1) SPA	Dengie NNR
Essex Estuaries SAC	Blackwater Estuary NNR Colne Estuary NNR Dengie NNR
Foulness (Mid-Essex Coast Phase 5) SPA	n/a
Ramsar	

Blackwater Estuary (Mid-Essex Coast Phase 4) SPA	Blackwater Estuary (Mid Essex Coast Phase 4)
Colne Estuary (Mid-Essex Coast Phase 2) SPA	Colne Estuary (Mid Essex Coast Phase 2) n/a
Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA	Crouch & Roach Estuaries (Mid Essex Coast Phase 3)
Dengie (Mid-Essex Coast Phase 1) SPA	Dengie (Mid Essex Coast Phase 1) Crouch & Roach Estuaries (Mid Essex Coast Phase 3) Dengie (Mid Essex Coast Phase 1)
Essex Estuaries SAC	Blackwater Estuary (Mid Essex Coast Phase 4) Colne Estuary (Mid Essex Coast Phase 2) Crouch & Roach Estuaries (Mid Essex Coast Phase 3) Dengie (Mid Essex Coast Phase 1) Foulness (Mid Essex Coast Phase 5)
Foulness (Mid-Essex Coast Phase 5) SPA	Foulness (Mid Essex Coast Phase 5)

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

Blackwater Estuary (Mid-Essex Coast Phase 4) SP	Essex Estuaries SAC
Colne Estuary (Mid-Essex Coast Phase 2) SPA	Essex Estuaries SAC
Crouch & Roach Estuaries (Mid-Essex Coast Phas	Essex Estuaries SAC
Dengie (Mid-Essex Coast Phase 1) SPA	Essex Estuaries SAC
Essex Estuaries SAC	Foulness (Mid-Essex Coast Phase 5) SPA Dengie (Mid-Essex Coast Phase 1) SPA Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA Colne Estuary (Mid-Essex Coast Phase 2) SPA Blackwater Estuary (Mid-Essex Coast Phase 4) SPA
Foulness (Mid-Essex Coast Phase 5) SPA	Essex Estuaries SAC

<i>Version</i>	<i>Date</i>	<i>Comment</i>
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