



East Suffolk
Drainage Board

BIODIVERSITY ACTION PLAN

April 2018



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Water Vole; Deben Estuary

FOREWORD

This Biodiversity Action Plan (Second Edition) has been prepared by the East Suffolk Internal Drainage Board, in accordance with the commitment to the Implementation Plan of the DEFRA Internal Drainage Board Review, requiring IDBs to produce their own Biodiversity Action Plans by April 2010. As such, the original version was published in January 2010. This revised version aims to continue to align the East Suffolk IDB with biodiversity policy and more specifically, the Biodiversity document for England, "*Biodiversity 2020: A strategy for Englands' Wildlife and Ecosystem Services*" and build on the Government's 25 Year Environmental Plan; *A Green Future*. In doing so, the document strives to demonstrate the Board's commitment to fulfilling its duty as a public body under the Natural Environment and Rural Communities Act 2006, to conserve biodiversity.

Many of the Board's activities have benefits and opportunities for biodiversity, not least its water level management and watercourse maintenance work. It is hoped that this Biodiversity Action Plan will help the Board to maximise the biodiversity benefits from its activities and demonstrate its contribution to the targets as part of the Biodiversity 2020 strategy and achieve wider environmental improvement within its catchments.

The Board has adopted the Biodiversity Action Plan as one of its policies and subject to available resources is committed to its implementation. It will review the plan periodically and update it as appropriate.

Mr Richard Pipe
Chairman - East Suffolk Internal Drainage Board

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ABBREVIATIONS AND ACRONYMS USED WITHIN THIS DOCUMENT

AOEP	Alde and Ore Estuary Partnership
AONB	Area of Outstanding Natural Beauty
BAP	Biodiversity Action Plan
BARS	Biodiversity Action Reporting System
BCP	Broadland Catchment Partnership
CWS	County Wildlife Site
DEFRA	Department for the Environment, Food and Rural Affairs
DEP	Deben Estuary Partnership
EA	Environment Agency
FWAG	Farming and Wildlife Advisory Group
GIS	Geographic Information Systems
Ha	Hectare
IDB	Internal Drainage Board
LA	Local Authority
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
MMO	Marine Management Organisation
NBRC	Suffolk Biological Records Centre
NCA	National Character Areas
NE	Natural England
NERC	Natural Environment and Rural Communities
NNR	National Nature Reserve
RAMSAR	Wetland of International Importance (after Ramsar Convention 1971)
RDA	River Deben Association
SAC	Special Area for Conservation
SAP	Species Action Plan
SBRC	Suffolk Biological Records Centre
SCC	Suffolk County Council
SCF	Suffolk Coast Forum
SMART	Specific, Measurable, Achievable, Relevant and Time limited
SMO	Standard Maintenance Operations
SPA	Special Protection Area
SSG	Suffolk Saltmarsh Group
SSSI	Site of Special Scientific Interest
SWT	Suffolk Wildlife Trust
WMA	Water Management Alliance
WLMP	Water Level Management Plan
ZSL	Zoological Society of London

1. IDB BIODIVERSITY – AN INTRODUCTION

1.1 Introduction

The East Suffolk IDB has conducted a biodiversity audit of its district and identified those habitats and species that would benefit from particular management or actions by the IDB. Using this information, which is presented in later sections, the IDB's Biodiversity Action Plan has been developed. The Plan identifies objectives for the conservation and enhancement of biodiversity within the drainage district, and goes on to describe targets and actions that will hopefully deliver these objectives. The intention is to integrate, as appropriate, biodiversity into the Board's activities, such as annual maintenance programmes and capital works projects, subject to available resources which can lead to habitat improvements and population enhancement for many different species within a catchment.

The action plan will help to safeguard the biodiversity of the drainage district now and for future generations. In particular, it is hoped that implementing the plan will contribute to the achievement of improvements and increased areas of priority habitats and species. Habitats and Species which are not classified as Priority Habitats or Species as described in Section 41 of the Natural Environment and Rural Communities Act (2006) may still be locally significant for a variety of reasons and have also been considered.

The Plan is an evolving document that will be reviewed and updated on a regular basis. This document is the first revision of the original, which was published in 2010. It covers the entire drainage district of the IDB, as shown in Map 1.

1.2 What is Biodiversity?

The Convention on Biodiversity agreed at the Earth Summit in Rio de Janeiro in 1992 defined biodiversity as:

"The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."

Biodiversity can be defined simply as "the variety of life" and encompasses the whole spectrum of living organisms, including plants, birds, mammals, and insects. It includes both common and rare species, as well as the genetic diversity within species. Biodiversity also refers to the habitats and ecosystems that support these species.

1.3 The Importance of Conserving Biodiversity

Biodiversity is a vital resource and it is essential to acknowledge its importance to our lives along with the range of benefits that it produces:

- Supply of ecosystem services – water, nutrients, climate change mitigation, pollination
- Life resources – food, medicine, energy and raw materials
- Improved health and well-being
- Landscape and cultural distinctiveness

- Direct economic benefits from biodiversity resources and 'added value' through local economic activity and tourism
- Educational, recreational and amenity resources

1.4 Biodiversity – The International Context

The international commitment to halt the worldwide loss of habitats and species and their genetic resources was agreed in 1992 at United Nations Conference on the Environment and Development, commonly known as the Rio Earth Summit. Over 150 countries, including the United Kingdom, signed the Convention on Biological Diversity, pledging to contribute to the conservation of biodiversity at the global level. These states made a commitment to draw up national strategies to address the losses to global biodiversity and to resolve how economic development could go hand in hand with the maintenance of biodiversity.

The Rio Convention included a global commitment to achieve by 2010 a significant reduction in rate of loss of biodiversity at the global, regional and national level.

A World Summit on Sustainable Development in Johannesburg in 2002 subsequently endorsed this target and in 2010, over 190 countries signed an historic global agreement in Nagoya, Japan to take urgent and effective action to halt the alarming global declines in biodiversity.

1.5 Biodiversity – The National Context

Before 2010, the UK Biodiversity Action Plan (UK BAP) was the UK commitment to Article 6A of the Rio Convention on Biological Diversity. It described the UK's priority species and habitats, and sought to benefit specific priority habitats and species. It also identified other key areas for action such as the building of partnerships for conserving biodiversity and gathering vital biodiversity data.

Following on from UK BAP and the outcomes delivered by Biodiversity 2010 and the previous biodiversity strategy for England, 'Working with the grain of nature' (2002), it was decided that each UK country should have its own biodiversity strategy, as this allows for conservation approaches to be tailored to the varying conditions within different areas of the UK. The most recent England biodiversity strategy, ['Biodiversity 2020: A strategy for England's wildlife and ecosystem services'](#) was published by Defra in 2011. 'Biodiversity 2020' provides a picture of how England is implementing its international and EU commitments toward biodiversity, setting out a strategic direction for biodiversity policy for land and sea and builds on the successful work achieved by Biodiversity 2010. The England Biodiversity Strategy is chaired by Defra.

The 'Biodiversity 2020' document sets out to deliver outcomes through action in four areas:

- A more integrated large-scale approach to conservation on land and at sea
- Putting people at the heart of biodiversity policy
- Reducing environmental pressures
- Improving our knowledge

Water Management is considered to be one of a series of key sectors for the positive influence on biodiversity.

1.6 Internal Drainage Boards and Biodiversity

The Natural Environment and Rural Communities Act 2006 places a duty on IDBs to conserve biodiversity. As a public body, every IDB must have regard in exercising its functions, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.

The Act states that conserving biodiversity includes restoring or enhancing a population or habitat. In so doing, an IDB should have regard to the list published by the Secretary of State of living organisms and types of habitat that are of principal importance for the purpose of conserving biodiversity. In effect, this list comprises the Biodiversity Action Plan priority species and habitats for England.

In 2007, the Government's IDB Review Implementation Plan established a commitment that IDBs should produce their own Biodiversity Action Plans.

Since this time the East Suffolk IDB has been contributing to maintain or enhancing priority habitats and species within its catchments; complimenting the former UK Biodiversity Action Plan and Local Biodiversity Action Plans.

1.7 The Aims of the IDB Biodiversity Action Plan

The aims of this IDB BAP are:

- To positively demonstrate that the Boards water course maintenance, water level management and capital works are undertaken in a manner that, whilst reducing flood risk and managing flows, also safeguards biodiversity and, wherever possible, makes a positive contribution to the enhancement of the biodiversity and the natural environment.
- To ensure that priority habitat and species targets from the UK Biodiversity Action Plan and LBAPs are translated into effective action within the drainage district.
- To identify targets for other habitats and species of local importance within the drainage district.
- To develop effective local partnerships to ensure that programs for biodiversity conservation are maintained in the long term and at the catchment level.
- To raise awareness within the IDB and locally of the need for biodiversity conservation, and to provide guidance to landowners, occupiers and their representatives on biodiversity and inland water management.
- To ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations, and
- To monitor and report on progress in biodiversity conservation.

2. THE IDB ACTION PLAN PROCESS

2.1 The Biodiversity Audit

To produce this IDB Biodiversity Action Plan, information on the habitats and species present in the catchment was first obtained. This “Biodiversity Audit” involved the collation of existing data held by the IDB and by other biodiversity partners.

2.2 Evaluating and Prioritising Habitats and Species

The Biodiversity Audit identified those priority habitats and species that can be found in the drainage district. Additional non-BAP habitats and species deemed to be important within the drainage district were also identified.

Further habitats and species, together with revised objectives and actions, may be made in the future, as knowledge is improved and delivery of the IDB BAP is reviewed.

A range of criteria was then used to select those species and habitats that are of particular importance to the IDB – that is to say, those habitats and species that could benefit from IDB actions. The criteria used included their national and local status, the opportunities for effective IDB action and the resources available.

In line with a key outcome of the Biodiversity 2020 strategy for England the latest revision of the East Suffolk IDB Biodiversity Action Plan aims to deliver benefits to a range of species by means of the consideration and implementation of appropriate management, enhancement and protection of important habitats within the Board’s area.

2.3 Setting Objectives, Actions and Indicators

For each habitat and species identified as being important to the IDB, conservation objectives and actions have been drawn up and set out in the Plan; this includes the identification of certain species which may benefit from the Plan. The objectives express the IDB’s broad aims for benefiting a particular habitat or species. The related actions have been set to focus IDB programmes of action and to identify outcomes that can be monitored to measure achievement. For each action an indicator has been set – a measurable feature of the action that, when monitored over time, allows delivery to be assessed.

In order for this BAP to be as effective as possible the actions have been devised to be SMART (Specific, Measurable, Achievable, Relevant and Time-limited). These actions are considered to be proportionate and practicable given the resources available.

Procedural targets have also been considered. These are targets that the Board will use to measure the way in which it considers and incorporates biodiversity across the whole range of its operations. These may involve changes to administrative, management and operating procedures

2.4 Implementation

Once objectives have been set for habitats and species, it is important that the actions to deliver the Biodiversity Action Plan are described and carried out. The Plan sets out how the Board intends to implement the actions in the plan, often in partnership with other organisations or individuals.

2.5 Monitoring

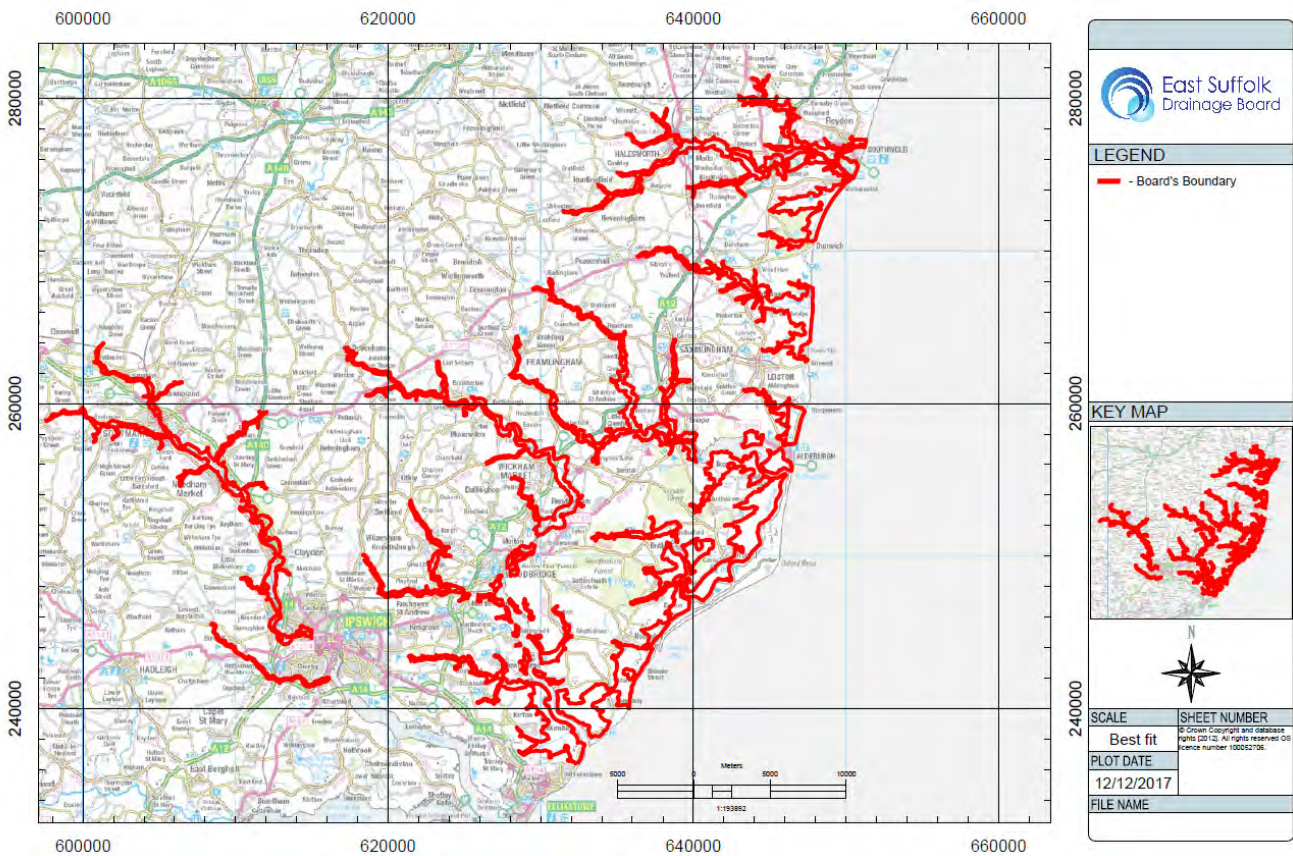
Achievement of the Plan actions will be measured by a programme of monitoring which the Board will undertake, in some instances with assistance from its partners, and the methods to be used are described in the Plan.

2.6 Reporting and Reviewing Progress

It is important to review the implementation of the BAP, assess changes in the status of habitats and species and the overall feasibility of objectives, targets and actions. In addition, it is vital that the successful achievement of targets and actions undertaken is recorded and the gains for biodiversity are registered in the public domain.

The Plan sets out the methods the IDB will be using to review the delivery of actions and to communicate progress to partner organisations and the public.

Map 1: Area of East Suffolk IDB



3. CURRENT ECOLOGICAL AND GEOLOGICAL STATUES

3.1 The Drainage District

The East Suffolk IDB covers an area of 134.14km² and contains 99km of IDB maintained watercourses and is drained by 10 pumping stations. The East Suffolk IDB serves the low-lying land within the catchments of the Rivers Blyth, Minsmere/Yox, Thorpeness Hundred, Alde/Ore, Deben and Gipping. It services a widely dispersed population and drains several towns and villages including Stowmarket, Woodbridge, Halesworth, Framlingham, Saxmundham, the outlying areas of Ipswich as well as small outlying villages and smallholdings. The area includes fine arable land and grazing marsh along with several important local, national and internationally designated wildlife sites; most notably the internationally acclaimed Minsmere-Warberswick Heaths and Marshes. The area also falls within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty. Much of the prosperity of the area is derived from agriculture. It has a thriving local economy and is a hugely popular tourist destination.

3.2 Geology

Much of Suffolk is founded on chalk, which is more obvious feature in the west of the county. It was formed as part of a sea bed between 70 and 100 million years ago. The chalk in this area has a pronounced effect on the kinds of wild plants that grow in this area and is the north-eastern extremity of the Southern England Chalk Formation. The chalk is less easily eroded than other geological features, and so forms the only significant hills in the county.

In east Suffolk, the chalk curves downwards and a wedge of younger deposits has formed on top of it. 50 million years ago Suffolk was part of a tropical sea. As the result of this, relicts of a soft sticky London clay can be found laid down in the south of the county, particularly round the Alde, Ore and Deben estuaries. Further north, the London Clay is overlain by a much younger material, known as Crag. Coralline Crag is the oldest, and found exclusively in Suffolk. It is a creamy-golden, sandy limestone full of fossil shells. Much of the coast and cliffs show part of the Norwich crag series. It extends from Orford northwards over much of eastern Suffolk and Norfolk with pale white sands.

Much of the landscape of Suffolk we see today, has been shaped by the last ice-age. The great ice-sheet reached into Suffolk, and diverted the course of an earlier river, which deposited the sands and gravels that make up so much of the soil along the coast. Ice age meltwaters eroded Jurassic clays from the area of fenland and chalk escarpment between Newmarket and Swaffham before fanning out toward the east and south-east to deposit its load of boulder clay on the county. Chalky boulder clay is a glacial deposit which forms Suffolk's gently rolling landscape and high quality farmland. Numerous chalk pebbles and scratched rocks from further a field can be found in gardens and fields on the boulder clay.

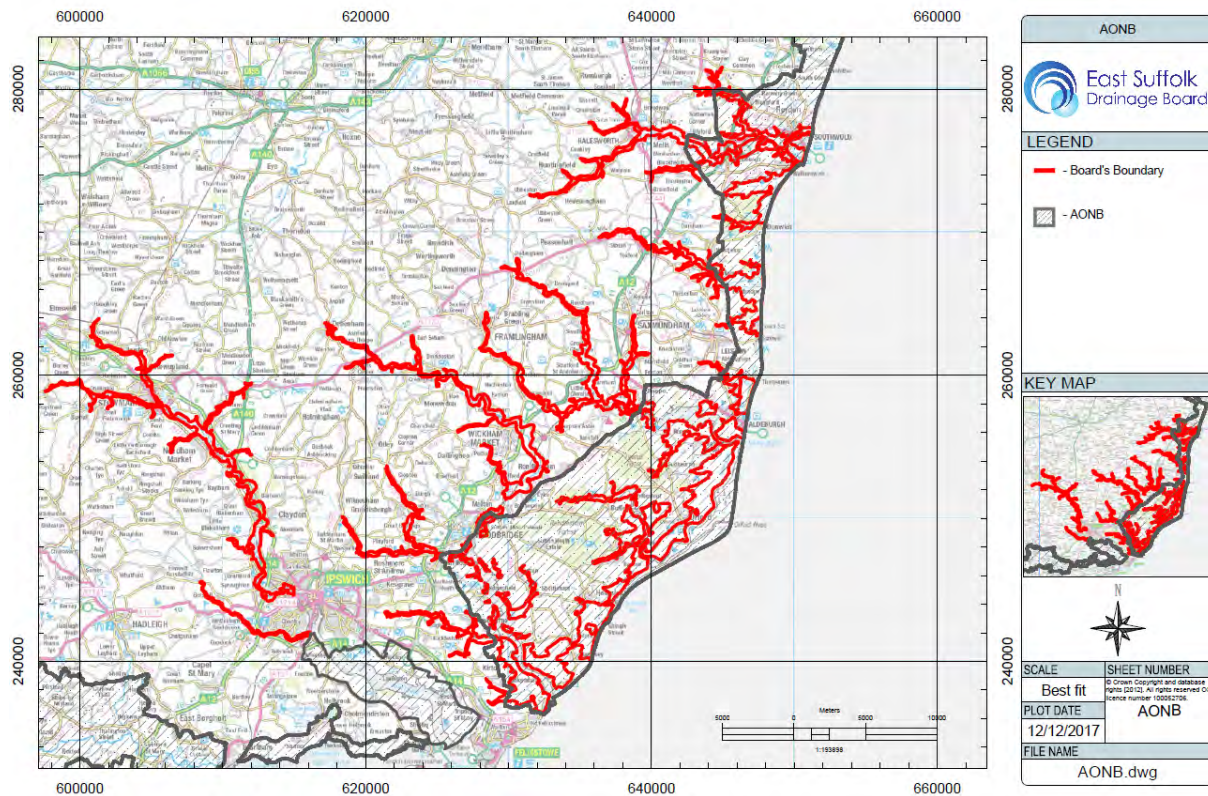
Over the past 2000 years, the coastline of Suffolk has retreated markedly. This is particularly noticeable round the village of Dunwich where an estimated 1 ½ miles of coast have been lost to the sea over the last millenium, engulfing the once thriving and prosperous medieval city and port of Dunwich.

3.3 Landscape

3.3.1 Landscape Designations

Much of the coastal area of the East Suffolk IDB falls within the Suffolk Coast and Heaths AONB (See Map 2)

Map 2: Suffolk Coast Area of Outstanding Natural Beauty



3.3.2 Landscape Character

Natural England has divided the whole of England into a number of National Character Areas (NCA) based on characteristic landforms, wildlife and land use (see Map 3). They are not designations and are not confined by traditional administrative boundaries. For each NCA, Natural England has prepared a profile that characterises the wildlife and natural features, identifies the influences that act upon those features and sets objectives for nature conservation.

The Biodiversity 2020 strategy has the aspiration for the creation and restoration of 200,000ha of priority habitat by 2020 (Outcome 1b). This aspiration has come about by using the NCAs, with the aim of creating a linkage of natural features and land-use characteristics to determine potential habitat creation and restoration areas as defined by these National Character areas.

The East Suffolk IDB falls under two of these National Character Areas, [Suffolk Coast and Heaths \(Area 82\)](#) and [South Norfolk and High Suffolk Clayland \(Area 83\)](#) The area also encompasses a small part of [South Suffolk and North Essex Clayland \(Area 86\)](#).

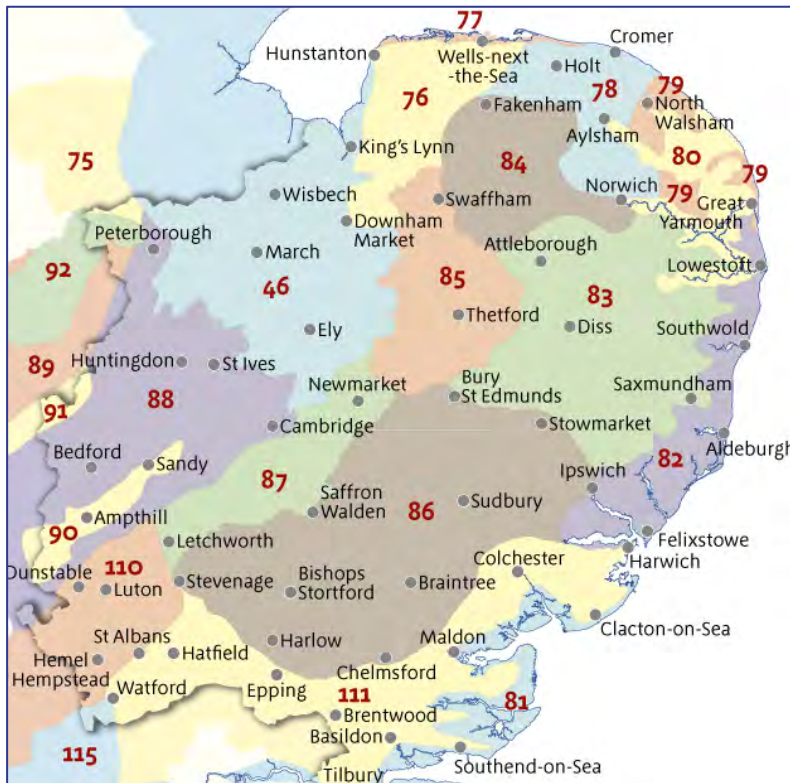
3.3.3 Sites and Monuments Records

No information for sites and monuments was obtained as part of the audit. The Board consults with English Heritage and the Suffolk County Council Archaeology Service prior to Capital works taking place or where ground breaking in areas other than general maintenance is required.

3.3.4 Tree Preservation Orders

The Board will continue to carry out searches prior to tree works, as required, to prevent any new Tree Preservation Orders being missed.

Map 3: NCA areas of the East of England



3.4 Statutory Nature Conservation Sites

3.4.1 Nationally, Internationally Designated Nature Conservation Sites and Water Level Management Plans

Within the Boards area are a number of nationally designated nature conservation sites, some of which also have international designations.

The Board was required to produce a water level management plan for all the SSSIs within their area where their activities can affect the wildlife interest. In practice this means all SSSIs where the Board manages a main drain, a structure or a pumping station which may influence the site.

The WLMP documents provide a means by which the water level requirements for a range of activities within a particular area, including agriculture, flood risk management and conservation, can be balanced and integrated.

Table 1 gives a summary of all the nature conservation sites within the ES IDB area with their national and international designations, water level management plans and UK BAP habitat.

All maps of the nationally and internationally designated nature conservation sites are shown in Appendix III.

Table 1: Nationally, Internationally Designated Nature Conservation Sites and Water Level Management Plans

Site name	National Designation	International Designation	WLMP	UK BAP Priority Habitat Description
Alde–Ore Estuary	SSSI	Alde–Ore Estuary RAMSAR, Alde–Ore Estuary SPA Orfordness- Shingle Street SAC Orfordness - Havergate NNR		Littoral sediment Neutral grassland - lowland Supralittoral sediment Fen, marsh and swamp – lowland Broadleaved, mixed and yew woodland - lowland
Deben Estuary	SSSI	Deben Estuary RAMSAR, Deben Estuary SPA		Fen, marsh and swamp – lowland Littoral sediment
Fox Fritillary Meadow, Framsden	SSSI		Fox Fritillary Meadow WLMP	Neutral grassland - lowland
Gromford Meadow	SSSI			Neutral grassland - lowland
Leiston - Aldeburgh	SSSI			Acid grassland – lowland Supralittoral sediment Fen, marsh and swamp – lowland Broadleaved, mixed and yew woodland - lowland Littoral sediment Standing open water and canals
Minsmere- Walberswick Heaths and Marshes	SSSI	Minsmere- Walberswick Heaths SAC Minsmere- Walberswick RAMSAR Minsmere- Walberswick SPA Suffolk Coast NNR	Minsmere- Walberswick WLMP	Neutral grassland – lowland Fen, marsh and swamp – lowland Broadleaved, mixed and yew woodland - lowland Dwarf shrub heath – lowland Littoral sediment Arable and horticulture Coastal lagoon Supralittoral sediment

Orwell Estuary	SSSI	Stour and Orwell Estuaries RAMSAR, Stour and Orwell Estuaries SPA	Orwell Estuary	Littoral sediment Neutral grassland – lowland Standing open water and canals
Sandlings Forest	SSSI	Sandlings SPA		Coniferous woodland
Sizewell Marshes	SSSI			Neutral grassland – lowland Fen, marsh and swamp – lowland

3.4.2 Local Nature Reserves

The following Local Nature Reserves, which are designated by local authorities under Section 21 of the National Parks and Access to the Countryside Act 1949, are found within the district.

Table 2: Local Nature Reserves

Site name	Designation	Site name	Designation
Bramford Meadows	LNR	Fen Alder Carr	LNR
Needham Lake	LNR	The Haven, Aldburgh	LNR

3.5 Non-statutory Local Sites

A large number of sites have been identified locally as being important for wildlife. Whilst these designations do not have statutory status, the sites themselves are important for their contribution to biodiversity and planning policy requires that they are given consideration. The following local sites are to be found within or bordering the drainage district. Appendix IV shows County Wildlife Sites within the ES IDB catchment and Appendix V lists all the sites found within or bordering the drainage district.

4. HABITATS

4.1 Introduction and Rational

The broad aim of the latest version of the East Suffolk IDB Biodiversity Action Plan is to shift the emphasis toward a more habitat focused plan. The rational is that by managing and enhancing habitats, there is an increased potential to provide a broad benefit to a wide range of species. The species that could potentially benefit from these Habitat Action Plans are included within the sections covering each Habitat Action Plan.

4.2 Habitat Audit Summary

This habitat audit summary lists the broad habitat types and priority habitats that occur within the IDB district as identified by the information gathering exercise. Also listed are habitats deemed to be of local importance and/or featured in the county Local Biodiversity Action Plan that occur in the IDB district. Habitats that are of potential importance for the IDB, where water level management or other IDB activities may be of benefit, are identified.

Table 3: Habitat Audit Summary

Broad Habitat Types	Priority Habitat	LBAP Habitat	Habitat of Importance for IDB
Braodleaved and Mixed Woodland	Lowland Mixed Deciduous woodland	Native woodland	
	Wet Woodland	Wet Woodland	
Coast	Coastal Shingle		
	Coastal Vegetated Shingle		
	Maritime Cliff and Slope		
	Coastal Sand Dunes		
	Saline Lagoon		
	Mudflats	Saltmarsh	Yes
Grassland	Coastal and Floodplain grazing marsh	Floodplain grazing marsh and ditch systems	Yes
	Lowland dry acidic grassland	Lowland Heathland and dry acidic grassland	
	Lowland heathland	Lowland Heathland and dry acidic grassland	
	Purple Moorgrass and Rush Pasture		
Farmland	Cereal Field Margins	Cereal Field Margins	
Fen, Marsh and Swamp	Lowland Fens	Fens	Yes
	Reedbed	Reedbed	

4.3 Habitats of Importance for the IDB

The following section provides more information on the status and location of the habitats within the drainage district that are of importance for the IDB and may benefit from water level management or other IDB activities.

- Coastal and Floodplain Grazing Marsh
- Reedbed
- Saltmarsh

The IDB have considered the actions proposed in the Suffolk LBAPs and by the former Suffolk Biodiversity Partnership and have used this as guidance in the synthesis of IDB objectives and targets for action. IDB actions are formalised within the tables below:

4.3.1 Coastal and Floodplain Grazing Marsh

Grazing marsh is defined as a periodically inundated pasture, or meadow with ditches which maintain the water level, containing standing brackish or fresh water. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds; although they may merge with fen and reed swamp communities. The mosaic of habitats within these sites provides diverse conditions, which support a wide range of plants, invertebrates, birds and animals. The ditches are often especially rich in plants and invertebrates. Grazing marshes are also of importance for both breeding and wintering bird populations.

EAST SUFFOLK IDB OBJECTIVE
A. To continue to maintain or enhance the existing extent and quality of Coastal and Floodplain Grazing Marsh within the Boards area via Capital Schemes, WLMP delivery or through Natural Flood Management solutions.

Table 4: ES IDB Coastal and Floodplain Grazing Marsh Action Plan

ACTION	PARTNERS	DATE
1. Continue to work in partnership with stakeholders to look for opportunities, to enhance grazing marshes by appropriate water level management practice.	SWT, NE, EA, RSPB and Landowners	Ongoing
2. Ensure there is no net loss of coastal grazing marsh during the implementation of flood defence strategies in Suffolk estuaries. Eg managed realignment schemes.	SWT, NE, EA Landowners, RSPB,	2018-2023
3. Where funding opportunities arise, prioritise and undertake a review of WLMPs in ESIDB SSSIs over the next 5 year period.	NE, EA, Landowners	2018 - 2023
4. Work in partnership with the Suffolk Wader Strategy	RSPB, SWS	2018 - 2023

4.3.1.1 Current Status

In Suffolk there is over 10,000ha of grazing marsh. Between 1955 and 1958 some 20% of grazing marsh in Suffolk was converted to arable. The exact extent of wet coastal grazing marsh of nature conservation importance in Suffolk is not known but approximately 2,000ha of wet grassland occurs in SSSIs and County Wildlife Sites and livestock grazes most of this grassland. This represents 20% of the total potential area of grazing marsh in Suffolk.

Most of the botanically rich grazing marshes, with the exception of significant areas at Sizewell and Minsmere are located away from the coast. The seasonal inundation of water gives the vegetation a distinct composition, with species such as Orange Foxtail (*Alopecurus aequalis*), Creeping Bent (*Agrostis stolonifera*), Southern Marsh Orchid (*Dactylorhiza praetermissa*), and Lesser Spearwort (*Ranunculus flammula*). Many improved grazing marshes have regionally important dyke systems such as at Kessingland.

Important components of the grazing marsh ecosystem are the ditches that often form the field boundaries. These can support a variety of marginal and aquatic plant species, including Water Soldier (*Stratiotes aloides*), Arrowhead (*Sagittaria sagittifolia*), Frogbit (*Hydrocharis morsus-ranae*) and Water Violet (*Hottonia palustris*). These ditches also support a variety of animals including Water Vole (*Arvicola amphibious*) and invertebrates such as the Norfolk Hawker Dragonfly (*Aeshna isosceles*). The grazing marshes in Suffolk are also particularly important for wading birds, breeding birds, passage and overwintering birds.

Typically, breeding birds of grazing marsh are waders including Redshank (*Tringa tetanus*), Avocet (*Recurvirostra avosetta*), Snipe (*Gallinago gallinago*) and Lapwing (*Vanellus vanellus*). Rarer species like Ruff (*Philomachus pugnax*) also breed on these areas. Internationally important populations of wintering wildfowl also occur including Wigeon (*Anas penelope*) and Shoveler (*Anas clypeata*).

4.3.1.2 Priority Species benefiting from the Lowland and Floodplain Grazing Marsh Habitat Action Plan (Table 4)

- Water Vole
- Barn Owl
- Kestrel
- Overwintering bird population
- Breeding Waders eg: Redshank, Avocet and Lapwing

4.3.1.3 Threats in Suffolk

- Neglect through decline in levels and extent of traditional grazing, including grazing of marginal vegetation.
- Fragmentation of grazing marshes.
- Impacts of drought and ground water abstraction.
- Ecologically insensitive flood defence.
- Saltwater intrusion from periodic inundation allowing brackish habitat.
- Agricultural intensification, including over grazing, 'over-efficient' dredging of dykes, maintenance of low water levels and spray drift from surrounding agricultural land.
- Coastal squeeze impacts upon grazing marsh in instances where managed realignment takes place, grazing marsh may be lost.

4.3.1.4 Legal Status

Some 800ha of grazing marshes are designated as SSSI in Suffolk and most of these are also protected through such international designations as SPA and Ramsar sites. About 90ha are also designated as SACs. Water Level Management Plans are required for all SSSIs.

The Suffolk River Valleys ESA and the Broads ESA currently provides the principle mechanism for encouraging the management of grazing marsh. Countryside Stewardship is able to support grazing marsh outside the ESA area.

The Environment Agency, Water Companies, Inland Drainage Boards and Local Authorities have a statutory duty to further conservation where consistent with purposes of enactment relating to their functions.

4.3.2 Reedbed

Reedbed is a rare habitat and dominated by stands of Common Reed (*Phragmites australis*), where the water table is at or above ground level for most of the year. They also incorporate areas of open water or ditches. Reedbeds are of great conservation value, supporting birds such as bittern and the marsh harrier.

EAST SUFFOLK IDB OBJECTIVE

B. To maintain, enhance and expand the area of reedbed within the Boards' district.

Table 5: ES IDB Reedbed Habitat Action Plan

ACTION	PARTNERS	DATE
5. Map areas of reedbed and reed fringe within the ES IDB area.		2018
6. Identify potential sites for habitat restoration and expansion within the ES IDB area and consider future management planning of these sites during this process	SRT, NE, EA, SWT, RSPB and Landowners	2018-2023
7. Maintain reedbed fringe habitat on the Boards main drains		2018-2023
8. Explore opportunities to create new reedbeds and link with other reedbed projects to create corridors for wildlife.	SRT, NE, EA, SWT, Landowners, RSPB	2018-2023

4.3.2.1 Current Status

In the UK it is estimated that there are 12000 ha over 1000 sites, with the majority of sites being less than 20ha. East Anglia contains the majority of the reedbeds that remain in the UK. The three largest reedbeds in England are all on the Suffolk coast. Reedbeds are characterised by a dominance of Reeds *Phragmites australis* and occur in a wide range of permanently and periodically waterlogged habitats.

The RSPB Reedbed Inventory suggests there are over 840 ha of reedbeds in Suffolk – which equates to almost 15% of the UK resource

4.3.2.2 Priority Species benefiting from the Reedbed Habitat Action Plan (Table 5):

- Birds - Bittern, Bearded Tit, Marsh Harrier, Savi's Warbler
- Mammals - Otter, Water Shrew, Harvest Mouse
- Moths - White Mantled Wainscot

4.3.2.3 Threats in Suffolk

- The three largest reedbeds in Suffolk are threatened by coastal erosion and increasingly frequent saline incursion. The Suffolk Coastal Habitat Management Plan predicts that 445 hectares (over half of Suffolk's reedbed, and 72% of that within reach of the sea) will be lost in the next 30-100 years. At Benacre Broad, this has already led to a substantial reduction in the size and quality of the reedbed.
- Lack of biological information, particularly concerning reedbed invertebrates, hinders adoption of appropriate management. Sites or parts thereof are still being lost to agricultural improvement, particularly the more vulnerable County Wildlife Sites. Current payment rates for established agri-environment and other grant schemes usually underestimate the expense of managing fen sites.
- Lack of appropriate management of some existing reedbeds leading to dehydration, scrub encroachment, and loss of open water (which is a vital component of the reedbed ecosystem for many of its key species). In particular, the wetter parts of reedbed systems are quickly lost if not actively managed.
- Lack of hydrological information which leads to inappropriate water level management as well as impacts from water abstraction and fluvial flooding which both threaten key species either through direct losses (desiccation and drowning), or by impairing management operations.
- Threat to species within some reedbeds from both drying out and fluvial flooding, either through direct losses or by impairing management operations.

4.3.2.4 Legal Status

Reedbed habitat is legally protected within the nationally and internationally protected sites within the catchment.



4.3.3 Saltmarsh

Saltmarshes are areas of intertidal land colonised by halophytic plants ie. plants adapted to high salinities and able to withstand immersion in seawater. Species which are highly salt tolerant will be present along the lower pioneering edge of the marsh and will help to trap sediment. Further inland in the mid - upper marsh zone, more complex, species rich communities can develop. At the upper limits of the saltmarsh, transition communities may occur whose characteristics depend on the habitat type adjacent to the marsh. Saltmarshes have traditionally been grazed and where this occurs vegetation will be shorter and dominated by grasses.

EAST SUFFOLK IDB OBJECTIVE
<p>C. To maintain and enhance existing salt marsh within and adjacent to the Boards' area through restoration approaches over the next 20 years.</p>
<p>D. To create new saltmarshes through managed realignment or regulated tidal exchange approaches where there are willing landowners and unsustainable flood embankments as part of estuary plan and shoreline management plan outcomes.</p>

Table 6: ES IDB Saltmarsh Habitat Action Plan

ACTION	PARTNERS	DATE
9. Explore the potential for enhancing the saltmarsh in the vicinity of King's Fleet Outfall, and others, to ensure that the outfall can be used sustainably. Apply for Natural Flood Risk Management Funding.	SCC, DEP, RDA NE and EA	2018
10. Using lessons learned from the Waldringfield (Deben) saltmarsh restoration scheme, advise others of our monitoring outputs and undertake monitoring as per the project monitoring programme.	SCT, SSG, DEP, RDA and Waldringfield residents	Annually
11. Work with partners to identify suitable sites for saltmarsh restoration partnership projects and support grant applications for landowners and community groups.	SCF, SSG, Estuary partnerships and Landowners	2018-2023
12. Work with landowners who wish to explore managed realignment options e.g. Iken and Benacre and support/lead business case development and partnership funding opportunities where required	AOEP, EA, NE, Kessingland Parish Council and Landowners	2019- 2020
13. Share our expertise with partners and the public through attendance at meetings and presentations where appropriate and raise awareness of the importance of this habitat locally.	SCF and SSG	2018-2020
14. Ensure coastal defence or other construction works carried out by the IDB, avoid any disruption of coastal or other natural processes which might lead to the loss of saltmarsh.	EA, NE and MMO	2018-2023

15. Maintain or where possible increase area of saltmarsh.	SCC, NE, EA and MMO	2018-2023
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4.3.3.1 Current Status

EA and NE reports to support the Suffolk Estuarine Plans state that Suffolk has approx. 1000 ha of saltmarsh remaining, which accounts for around 2% of the national resource. Between 1971-1998, 296ha of saltmarsh are known to have been lost around the Suffolk coast. The Deben Estuary has the largest remaining extent of marsh, of around 400ha.

4.3.3.2 Priority Species benefiting from the Saltmarsh Habitat Action Plan (Table 6)

- Birds – Avocet, Dark Bellied Brent Goose, Common Redshank and other waterbird assemblages.

4.3.3.3 Threats in Suffolk

- Sea level rise and isostatic tilt is predicted to occur at a rate too rapid for saltmarsh formation to keep pace with.
- Coastal squeeze - required saltmarsh retreat is prevented in many areas by embankments and floodbanks, which lead to a gradual squeeze of these habitats.
- Coastal defence works and dredging of shipping lanes maybe affecting sediment cycles, vital to the build up of saltmarsh.
- Port development and dredging, particularly on the River Stour have affected saltmarsh. These activities affect habitat directly but also sediment budgets and may cause loss of habitat though erosion.
- Un-managed realignment schemes may increase river flow locally and downstream, cause potential for further erosion and alteration of sediment deposition.
- Pollution from agricultural runoff and sewage discharges can cause nutrient enrichment. Concern has been raised about industrial discharges in the Brantham area of Stour Estuary and their effects on local saltmarshes. Oil pollution has been implicated in saltmarsh die-back and this may be a threat in the more industrialised Orwell and Stour Estuaries.
- Common cord grass (*Spartina anglica*) readily colonises mudflats and has been planted in the past to aid their stabilisation. This often produces extensive monoculture swards of little intrinsic value to wildlife and is considered a threat to bird feeding areas.
- Recreational activities can disturb wader and wildfowl populations using the habitat.

4.3.3.4 Legal Status

Fen habitat is legally protected where it is present within the SSSI, SAC, SPA and RAMSAR sites. The Environment Agency (EA) and local authorities have a statutory duty to further conservation where consistent with purposes of enactments relating to their functions.

All the Suffolk saltmarshes fall within Sites of Special Scientific Interest (SSSIs), and are also protected under RAMSAR, Special Protection Area (SPA), EU Birds Directive (1979). In addition, parts of Alde & Ore Estuarine saltmarsh are located within the Orfordness - Shingle Street, Special Area of Conservation (SAC), a National Nature Reserve (NNR) around Havergate Island and the Orfordness spit. The estuaries and their saltmarsh habitats are part of the Suffolk Coast and Heaths Area of Outstanding Natural Beauty.

5. SPECIES

5.1 Introduction and Rationale

The ES IDB area supports many species of local and national conservation value. As previously discussed, appropriate habitat management plans can fulfil the requirements of many of these species. A small number of species have particular importance within the drainage board's area and are relevant within the appropriate management of the previously listed habitats. The following section provides more information on the status and location of these species within the drainage district that are of importance for the IDB, and may benefit from water level management or other IDB activities. The information is taken for the most part, from the Norfolk Biodiversity Action Plan and has the IDB objectives and actions identified for each species.

5.2 Species Audit Summary

Appendix V lists the BAP priority species that occur within the ES IDB district as identified by the species audit. Also listed are species deemed to be of local importance and/or identified in the county Local Biodiversity Action Plan that occur in the IDB district. Species that are of potential importance for the IDB, where water level management or other IDB activities may be of benefit, are also identified.

5.3 Species of Importance for the IDB

The following section provides more information on the status and location of the species within the drainage district that are of importance for the IDB and may benefit from water level management or other IDB activities.

- Water Vole
- Eel
- Breeding Wader
- Non Native Invasive Species

The IDB have considered the actions proposed in the Suffolk LBAPs and by the former Suffolk Biodiversity Partnership and have used this as guidance in the synthesis of IDB actions. IDB Objectives and Actions are formalised and highlighted in green and are collated within a table. Where there is no LBAP then information on species has been obtained from other sources and IDB actions formulated as appropriate.

5.3.1 Water Vole

This is the largest of the British vole species. It is not particularly well adapted to the aquatic environment, but it rarely ventures far from the waterside. It is herbivorous and eats a huge variety of emergent plant species. They are a colonial species and breeding occurs between March – September. They do not hibernate as such in winter, but they do spend a large proportion of time below ground within a series of burrows. Water Voles show a preference for steep grassy banks rising from margins fringed with reeds and other emergent plants along slow to moderately flowing watercourses.

EAST SUFFOLK IDB OBJECTIVES
<p>E. To ensure the appropriate sensitive management of watercourses and wetlands which will facilitate the maintenance and enhancement of the current distribution and abundance of the Water Vole in the IDB District.</p> <p>F. To facilitate control of American Mink the IDB District.</p>

Table 8: ES IDB Water Vole Action Plan

ACTION	PARTNERS	DATE
16. Ensure compliance with the IDB SMO by auditing an identified number of maintenance works jobs annually, to ensure they are being carried out sensitively and to an agreed standard across the Board.		2018 - 2023
17. Send Water Vole survey records to the Suffolk Biodiversity Records Centre.	SBIS	2018 - 2023
18. Continue to work in partnership on the Suffolk Mink Control Project.	SWT	2018 - 2023
19. Investigate post-extraction management of gravel workings and flood-plain restoration schemes, to develop new reedbeds and broad reed-dominated pool margins, as a means of developing new populations away from the coast.	NE, EA and landowners	2020-2022
20. Take opportunities to enhance Water Vole habitat where appropriate during Capital or river/wetland restoration schemes.	NE, EA, SWT and Landowners	2018 - 2023

5.3.1.1 Current Status

Once a common species, the Water Vole has suffered a long-term decline since 1900 with an estimated decline in the UK population in 1998 estimated as 89% decline when looking at areas where they had previously been recorded in 1989-90 (Strachan et al, 2000). This decline is representative of a declining number of sites and numbers of individuals per colony.

It is thought that the current strongholds for the species are in Southern and Eastern England and that the East Anglian Region as a whole supports 20% of the British population of the species and 37% of the entire English population (Strachan et al, 2000).

5.3.1.2 Priority Habitats within the ES IDB area beneficial to Water Vole

- Coastal and Floodplain Grazing marsh
- Reedbed

5.3.1.3 Threats in Suffolk

- Damage to and loss of habitats due to insensitive routine maintenance of the channel and bankside, culverting or piling.
- Development within the floodplain that result in direct loss of habitat.
- Fluctuation in water level, where burrows are set during the active winter months can leave entrances wide open as water levels are lowered during winter. This leaves the hole open to predation.
- Population fragmentation leaves colonies remote from their neighbours and results in genetic restriction and susceptibility to disease.
- Predation particularly by Mink.
- Persecution Water Voles are often mistaken as a brown rat.
- The threat to reedbeds from sea level rise.

5.3.1.4 Legal Status

It has legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 9 where it is an offence to kill, injure or take (section 9 (1)); intentionally damage, destroy, or obstruct access to any structure or place that water voles use for shelter or protection and to disturb Water Voles whilst they are using this place (Section 9 (4)). The displacement of Water Vole for flood defence works is now a Natural England licenced activity for IDBs.



5.3.2 European Eel

The European Eel travels to freshwater as a glass Eel from its spawning site in the Sargasso Sea in the Atlantic Ocean. On arrival into freshwater in the summer, the tiny unpigmented Eel must travel upstream to find appropriate habitat where it will feed and mature through the elver and yellow Eel stage, living in some cases up to 15 years, before changing physiologically and returning to the ocean from which it spawned, as a Silver Eel.

5.3.2.1 Eel Management Plan

The Eel became a priority BAP species in 2007. There is currently no Eel BAP for the UK or Suffolk. There is however an Eel Management Plan (EMP) for the UK, published in December 2008 which divides the UK into different River Basin Districts (RBD). Suffolk falls under the Anglian River Basin District. This document aims to describe the current status of Eel populations in the Anglian RBD, assess compliance with the EU Council Regulation 1100/2007 and detail management measures to increase silver Eel escapement.

BROADS IDB OBJECTIVE

G. To contribute toward the Eel Regulations (2009) and the Eel Management Plan.

Table 9: East Suffolk IDB Eel Action Plan

ACTION	PARTNERS	DATE
21. Work in Partnership with the Environment Agency to assess the current status of Eel populations within the Board's Area.	EA and ZSL	2018-2023
22. Work in Partnership with the Environment Agency to identify barriers to migration in the Board's Area and assess options for overcoming these.	EA and ZSL	2018-2023

5.3.2.2 Current Status

The Eel is thought to be of huge economic and ecological significance to UK waters. It has been estimated that Eel recruitment has fallen by 70% in the UK and by 95% in other EU countries in since the 1980's. Prior to 1930, East Anglia had undergone hundreds of years of drainage for agriculture and habitation. It was only post 1940 that more intensive drainage programmes were introduced in order to optimise the high grade agricultural land to feed the populous both during and after World War II.

During this time a wide scale loss of aquatic habitat took place. However, it was in response to the saline surge and floods of 1953 that emphasis was placed on defending the East Anglian coast from the North Sea. The "passability" of these hugely important tidal defence schemes, tidal flaps and pumping stations is being investigated by the Environment Agency as to their role in the successes or non-successes in the life history of the migratory Eel in East Anglia.

5.3.2.3 Priority Habitats within the East Suffolk IDB area beneficial to European Eel

- Coastal and Floodplain Grazing marsh
- Reedbed

5.3.2.4 Threats in Suffolk

- Problems with Glass Eel recruitment, due to the blockage of Glass Eel passage into watercourses by means of tidal flaps, sluice gates and pumping stations.
- Problems with Silver Eel escapement into main river and the sea by means of tidal flaps, sluice gates and pumping stations.
- Parasites – *Anguillicolloides crassus* a nematode worm effects the ability of the Eel to alter buoyancy during swimming by attaching to the swim bladder of the animal.
- Water quality.
- Illegal commercial fishing.

5.3.2.5 Legal Status

The Salmon and Freshwater Fisheries Review (2000) recommended new legislation to improve fish passage in England and Wales to improve fish passage on all rivers, not just those containing salmon and sea trout.

The Fish Passage (England and Wales) Regulations (2009) will increase the circumstances in which fish passes will be required to be built or screened and will provide a more robust fish pass authorisation scheme.

The European Eel Regulation (2007) (EU Council regulation 1100/2007) states that the UK must hope to achieve a 40% silver Eel escapement relative to best estimates, with no anthropogenic. A failure to achieve this target will result in a 50% reduction in fishery effort for all life stages.



5.3.3 Breeding Waders

Breeding wader species are characteristic of lowland wet grasslands such as those found in the Suffolk Marshes. These marshes have an appropriate flooding or water regime with an abundance of lower growing grasses, rushes and sedges which require regular management through cutting or grazing. Wet grasslands are frequently of high nature conservation value and support a wide range of invertebrate, plant, reptile, amphibian and bird species and communities.

EAST SUFFOLK IDB TARGET

H. To work in partnership to enhance wet grassland for breeding waders within the East Suffolk IDB area.

Table 10: East Suffolk IDB Breeding Waders Action Plan

ACTION	PARTNERS	DATE
23. Continue to work in partnership with stakeholders and the Suffolk Wader Strategy to look for opportunities, where appropriate, to enhance grazing marshes by appropriate water level management practice.	RSPB, Suffolk Wader Strategy, SWT	Ongoing
24. Where funding opportunities arise, prioritise and undertake a review of WLMP in East Suffolk IDB SSSI's over 5 years.	RSPB, SWT, NE, EA	2018-23
25. Look for opportunities to create scrapes on wetland SSSI's or coastal grazing marsh. One per year.	RSPB, SWT Suffolk Wader Strategy,	2018-23
26. Look for opportunities when undertaking Coastal Capital schemes to improve coastal grassland for wading birds.	Suffolk Wader Strategy, RSPB, NE, SWT,	2018-2023

5.3.3.1 Current Status

It has been recognised that waterbirds in the UK have been declining for some time and were estimate to be 15% lower than they were in 1975. Populations of the many wading bird species that breed on wet grasslands have historically undergone severe reductions in number and distribution, primarily as a result of this habitat loss and degradation.

In Europe, breeding waders have also been undergoing dramatic population declines in recent decades. For example, Snipe *Gallinago gallinago*, (61% decline) Curlew *Numenius arquata* (40% decline), Lapwing *Vanellus vanellus* (38% decline) and Redshank *Tringa tonatus* (29% decline) all declined in England and Wales between 1982 and 2002 (Eggington,2008).

The recent European Red List of Birds has listed both Blacktailed Godwit *Limosa limosa* and Ruff *Philomachus pugnax* as Endangered (EN), while Eurasian Oystercatcher, Northern Lapwing *Vanellus vanellus*, Eurasian Curlew *Numenius arquata* and Common Redshank *Tringa totanus* have been listed as Vulnerable (VU).

Suffolk is home to three important populations of waders: lapwing, redshank and Avocet. However, DEFRA data from 2014 indicates that since 2008, populations of Lapwing have declined by 5.32% per year and Redshank by 3.19% per year.

5.3.3.2 *Priority Habitats within the East Suffolk IDB area beneficial to Breeding Waders*

- Coastal and Floodplain Grazing marsh
- Fens

5.3.3.3 *Threats in Suffolk*

- Inappropriate water level management
- Agricultural practices; overstocking and/or timing of introducing animals to the marshes, nutrient enrichment, compaction of soils
- Lack of open areas of wet mud near to suitable nesting sites.

5.3.3.4 *Legal Status*

Areas for Birds or internationally designated wetland habitats (RAMSAR sites). These sites are protected under the Conservation of Habitats and Species Regulations (2017). The East Suffolk IDB is responsible for the Water Level management and the production of Water Level Management Plans for each of these SSSI sites.

All breeding birds are covered generally by the Wildlife and Countryside Act (1981) as amended by the CROW Act 2000.



Above image: Redshank and Avocet © Amy Felce

5.3.5 Non Native Invasive Species

A non-native invasive species is a species which has been moved outside its natural range with the aid of humans, is spreading rapidly and is causing problems for the local environment and economy. At a global level, invasive non-native species are now believed to be one of the most significant causes of biodiversity loss. The impacts particularly of freshwater and riparian non-native plant species are of concern at a local level to the hydrological engineer, due to the ease and speed at which many plants can spread and grow, causing major problems by blocking watercourses. The low-lying nature of much of Suffolk and its abundance of watercourses and wetland habitats means that it is particularly at risk from colonisation by these plants.

Table 11: Non-native Invasive Species of Significance to Suffolk

Common Name	Group	Scientific Name
Signal Crayfish	Crustacean	<i>Pacifastacus leniusculus</i>
Japanese Knotweed	Vascular plant	<i>Fallopia japonica</i>
Floating Pennywort	Vascular plant	<i>Hydrocotyl ranunculoides</i>
Giant Hogweed	Vascular plant	<i>Heracleum mantegazzianum</i>
Himalayan Balsam	Vascular plant	<i>Impatiens glandulifera</i>
Australian Swamp Stonecrop	Vascular plant	<i>Crassula helmsii</i>
Parrots Feather	Vascular plant	<i>Myriophyllum aquaticum</i>

Floating Pennywort, a highly problematic, prolific and economically draining species can currently be found growing in the close by Waveney catchment. It was thought that this species had been eradicated by control efforts in 2014, however it was reported once more in the Waveney in 2016. A partnership approach to its monitoring, control and eradication is being coordinated by the Norfolk Non Native Species Initiative.

In recent years, many of the waterways in nearby Broadland have become infested by the Killer Shrimp (*Dikerogammarus villosus*). This species is of particular concern from the biodiversity perspective as it is a voracious predator and can kill other invertebrates and fish fry; seriously impacting on the ecology of river and lake systems.

All precautions should be undertaken to keep these and other Non native invasive species out of East Suffolk watercourses to prevent a huge economic outlay on their control.

EAST SUFFOLK IDB OBJECTIVE

- I. To prevent the spread of Non Native Invasive Species during IDB operations.
- J. To promote the prevention, control and eradication of Non Native Invasive Species.

Table 12: ES IDB Non Native Invasive Species Action Plan

ACTION	PARTNERS	DATE
27. Continue to contribute to and work in Partnership with the Suffolk Non-Native Invasive on Invasive control projects.	SWT	2018-2023
28. Maintain records for all species of concern using "That's Invasive!" app.	SWTI, Staff and Contractors	2018-2023
29. Train staff regularly in key non-native species identification.	SWT, Staff and Contractors	2018-2023
30. Ensure availability and regular review of identification guides developed for key non-native species to be used by officers, staff and contractors on site.	SWT, Staff and Contractors	2019 and 2022
31. Regularly review and ensure robust biosecurity measures are being maintained across the Board.	Staff and Contractors	2018 and 2021
32. Explore funding opportunities with partner organisations to establish a Non Native Project Officer for Suffolk.	SWT, EA and NE	2020-2022



Above images clockwise: American Mink; Floating Pennywort; Signal Crayfish; Parrots Feather; Himalyan Basalm; Japanese Knotweed © Roger Kidd

14) 5.3.5.1 *Priority Habitats benefiting from Non-Native Invasive Species Action Plan (Table*

- Wet woodland
- Lowland Mixed deciduous woodland
- Chalk rivers
- Ponds
- Reedbed
- Fen
- Coastal and floodplain grazing marsh
- Lowland Calcareous grassland
- Lowland Meadow and Pasture
- Lowland Heathland and dry acidic grassland
- Lowland Heathland and dry acidic grassland
- Arable Field Margins
- Hedgerows

5.3.6.2 *Financial Risk*

The approach to the invasive problem should be reactive when the species is manageable and relatively cheap to control. This should hopefully prevent the problem from manifesting into a much larger more expensive control strategy. The key to this is communication and knowing where the invasives are nearby, on IDB land or on landowner controlled land, so that an integrated partnership approach may be established.

The Board has a duty under the Wildlife and Countryside Act (1981) to prevent the spread of non-native invasives and therefore it would not simply be a matter of removing large areas of invasives during the maintenance period, as often the processes of flailing strimming or mowing of the species will subsequently result in its continual spread of a plant.

This will occur particularly readily with Floating Pennywort, Australian Swamp Stonecrop, Parrots Feather and Japanese Knotweed, as they all reproduce via an asexual, vegetative means. It is likely that the problem will continue on site from small pieces of material left behind from the mechanical operation, but will result in an additional problem of waterborne material causing a further infestation downstream.

All precautions should be undertaken to keep these and other non-native invasive species out of East Suffolk IDB watercourses to prevent a huge economic outlay on their control. There is no doubt that if an infestation, particularly of the aquatic non-native invasive species, is left to grow the cost to the board will be considerable.

6. PROCEDURAL ACTION PLAN

A number of procedural targets and actions have been established within this Procedural Action Plan. These are intended to integrate biodiversity considerations into IDB practices and procedures.

ACTION	OUTPUTS / OUTCOME	DATE	PARTNERS
Ensure compliance to standard for biodiversity and protected species surveys	All works assessed using agreed standards of information to ensure that appropriate mitigation is delivered for capital / maintenance works and projects to ensure no net loss of biodiversity. Environmental staff to undertake regular training.	Ongoing	NE, EA
Ensure compliance to Boards Standard Maintenance Operations	Assess an annual agreed percentage of maintenance works, to be carried out to an agreed standard and delivered across the whole board and integrated within the Quality Management System ISO14001. Regular review on SMO to ensure compliance with updated guidelines and regulation.	Ongoing	NE, EA
Land Drainage consent and Bylaws	Through the application of Land Drainage Consents and Bylaws, seek to ensure that natural features of conservation interest and habitat importance are maintained or enhanced.	Ongoing	SCC, EA
Attend Local Biodiversity Forums and Meetings	Communication and network opportunities with other organisations to facilitate actions for BAP Species and Habitats. PR and lifting profile of Board	Ongoing	
Raising awareness	Biodiversity training days organised for staff and board members	Ongoing	
Recording	Develop and populate a recording system for IDB priority species and habitats within the Board area, in conjunction with the Engineering team watercourse surveys	Ongoing	SBRC, SWT
Communication	A new Environment and Biodiversity section on the website. Share successes with media and promote public awareness.	Ongoing Ongoing	
Monitoring	Continue to develop the WMA's record base and continue to work internally and in partnership with other organisations to ensure that we have up to date information on species to help inform future works.	Ongoing	SBRC

7. IMPLEMENTATION AND MONITORING

Planning for maintenance, capital and non-regular maintenance work will all take into consideration the Boards Biodiversity Action plan targets.

The Board, as part of the Water Management Alliance, has adopted the Environmental Management System ISO 14001, which also helps to integrate the Biodiversity Action Plan within the systems and work of the organisation.

A simple process will be put into place to record actions and help with the reporting. Any new data on habitats and species will be shared with the Suffolk Biological Record Centre.

8. REVIEWING AND REPORTING PROGRESS

The Board recognises the importance of reviewing the implementation of the Biodiversity Action Plan to assess changes in the status of habitats and species and the overall feasibility of objectives and actions. In addition, they recognise the benefit of recording successful achievements and reporting on those achievements.

A comprehensive review of the plan will take place after five years.

The Board, through the Water Management Alliance, will continue to work in partnership with other organisations to ensure the targets and objectives are attained.

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10. APPENDICES

Appendix I: Biodiversity Action Plan Objectives

EAST SUFFOLK IDB BIODIVERSITY ACTION PLAN OBJECTIVES	
A.	To continue to maintain enhance and expand the existing extent and quality of Coastal and Floodplain Grazing Marsh within the Board's area via Capital Schemes, WLMP delivery or through Natural Flood Management solutions.
B.	To maintain, enhance and expand the area of reedbed within the Boards district.
C.	To maintain and enhance existing salt marsh within and adjacent to the Boards' area through restoration approaches over the next 20 years.
D.	To create new saltmarshes through managed realignment or regulated tidal exchange approaches where there are willing landowners and unsustainable flood embankments as part of estuary plan and shoreline management plan outcomes.
E.	To ensure the appropriate sensitive management of watercourses and wetlands which will facilitate the maintenance and enhancement of the current distribution and abundance of the Water Vole in the IDB District.
F.	To facilitate control of American Mink the IDB District.
G	To contribute toward the Eel Regulations (2009) and the Eel Management Plan.
H.	To work in partnership to enhance wet grassland for breeding waders within the East Suffolk IDB area.
I.	To prevent the spread of Non Native Invasive Species during IDB operations.
J.	To promote the prevention, control and eradication of Non Native Invasive Species.

Appendix II: Habitats and Species Action Plan

ACTION		PARTNERS	DATE
COASTAL AND FLOODPLAIN GRAZING MARSH			
1.	Continue to work in partnership with stakeholders to look for opportunities, to enhance grazing marshes by appropriate water level management practice.	SWT, NE, EA, RSPB and Landowners	Ongoing
2.	Ensure there is no net loss of coastal grazing marsh during the implementation of flood defence strategies in Suffolk estuaries. Eg managed realignment schemes.	SWT, NE, EA Landowners, RSPB,	2018-2023
3.	Where funding opportunities arise, prioritise and undertake a review of WLMPs in ESIDB SSSIs over the next 5 year period.	NE, EA, Landowners	2018 - 2023
4.	Work in partnership with the Suffolk Wader Strategy	RSPB, SWS	2018 - 2023
REEDBED			
5.	Map areas of reedbed and reed fringe within the ES IDB area.		2018
6.	Identify potential sites for habitat restoration and expansion within the ES IDB area and consider future management planning of these sites during this process	SRT, NE, EA, SWT, RSPB and Landowners	2018-23
7.	Maintain reedbed fringe habitat on the Boards main drains		2018-23
8.	Explore opportunities to create new reedbeds and link with other reedbed projects to create corridors for wildlife.	SRT, NE, EA SWT, Landowners, RSPB	2018-23
SALTMARSH			
9.	Explore the potential for enhancing the saltmarsh in the vicinity of King's Fleet Outfall, and others, to ensure that the outfall can be used sustainably. Apply for Natural Flood Risk Management Funding.	SCC, DEP, RDA NE and EA	2018

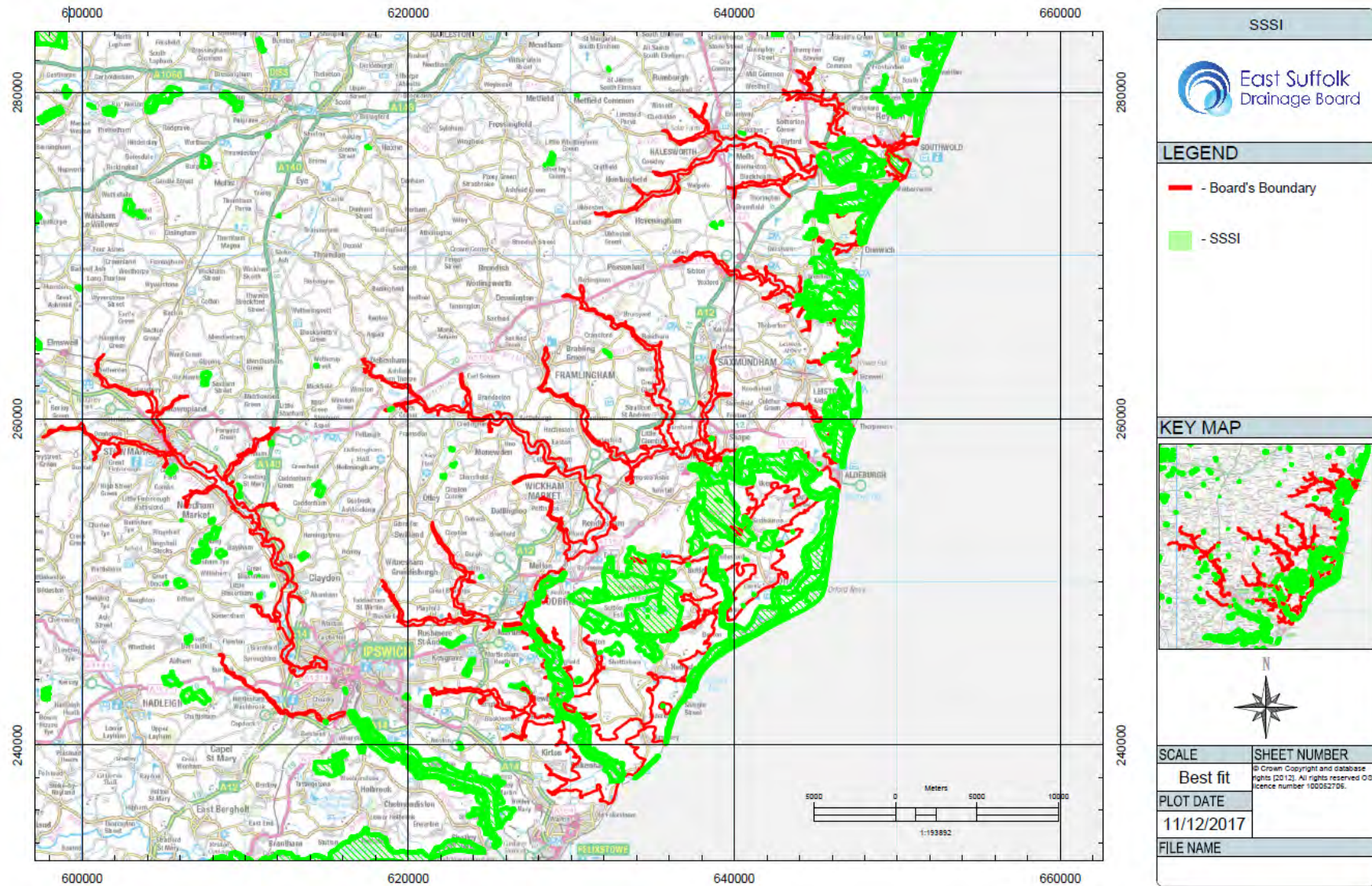
10.	Using lessons learned from the Waldringfield (Deben) saltmarsh restoration scheme, advise others of our monitoring outputs and undertake monitoring as per the project monitoring programme.	SCT, SSG, DEP, RDA and Waldringfield residents	Annually
11.	Work with partners to identify suitable sites for saltmarsh restoration partnership projects and support grant applications for landowners and community groups.	SCF, SSG, Estuary partnerships and Landowners	2018-23
12.	Work with landowners who wish to explore managed realignment options e.g. Iken and Benacre and support/lead business case development and partnership funding opportunities where required	AOEP, EA, NE, Kessingland Parish Council and Landowners	2019- 20
13.	Share our expertise with partners and the public through attendance at meetings and presentations where appropriate and raise awareness of the importance of this habitat locally.	SCF and SSG	2018-20
14.	Ensure coastal defence or other construction works carried out by the IDB, avoid any disruption of coastal or other natural processes which might lead to the loss of saltmarsh.	EA, NE and MMO	2018-23
15.	Explore the potential for enhancing the saltmarsh in the vicinity of King's Fleet Outfall, and others, to ensure that the outfall can be used sustainably. Apply for Natural Flood Risk Management Funding.	SCC, DEP, RDA, NE and EA	2018
WATER VOLE			
16.	Ensure compliance with the IDB SMO by auditing an identified number of maintenance works jobs annually, to ensure they are being carried out sensitively and to an agreed standard across the Board.		2018 - 23
17.	Send Water Vole survey records to the Suffolk Biodiversity Records Centre.	SBIS	2018 - 23
18.	Continue to work in partnership on the Suffolk Mink Control Project.	SWT	2018 - 23
19.	Investigate post-extraction management of gravel workings and flood-plain restoration schemes, to develop new reedbeds and broad reed-dominated pool margins, as a means of developing new populations away from the coast.	NE, EA and landowners	2020-22

ACTION		PARTNERS	DATE
20.	Take opportunities to enhance Water Vole habitat where appropriate during Capital or river/wetland restoration schemes.	NE, EA, SWT and Landowners	2018 - 23
EEL			
21.	Work in Partnership with the Environment Agency to assess the current status of Eel populations within the Board's Area.	EA and ZSL	2018-23
22.	Work in Partnership with the Environment Agency to identify barriers to migration in the Board's Area and assess options for overcoming these.	EA and ZSL	2018-23
BREEDING WADERS			
23.	Continue to work in partnership with stakeholders and the Suffolk Wader Strategy to look for opportunities, where appropriate, to enhance grazing marshes by appropriate water level management practice.	RSPB, Suffolk Wader Strategy, SWT	Ongoing
24.	Where funding opportunities arise, prioritise and undertake a review of WLMP in East Suffolk IDB SSSI's over 5 years.	RSPB, SWT, NE, EA	2018-23
25.	Look for opportunities to create scrapes on wetland SSSI's or coastal grazing marsh. One per year.	RSPB, SWT Suffolk Wader Strategy,	2018-23
26.	Look for opportunities when undertaking Coastal Capital schemes to improve coastal grassland for wading birds.	Suffolk Wader Strategy, RSPB, NE, SWT,	2018-23
NON NATIVE INVASIVE SPECIES			
27.	Continue to contribute to and work in Partnership with the Suffolk Non-Native Invasive on Invasive control projects.	SWT	2018-23
28.	Maintain records for all species of concern using "That's Invasive!" app.	SWTI, Staff and Contractors	2018-23
29.	Train staff regularly in key non-native species identification.	SWT, Staff and Contractors	2018-23

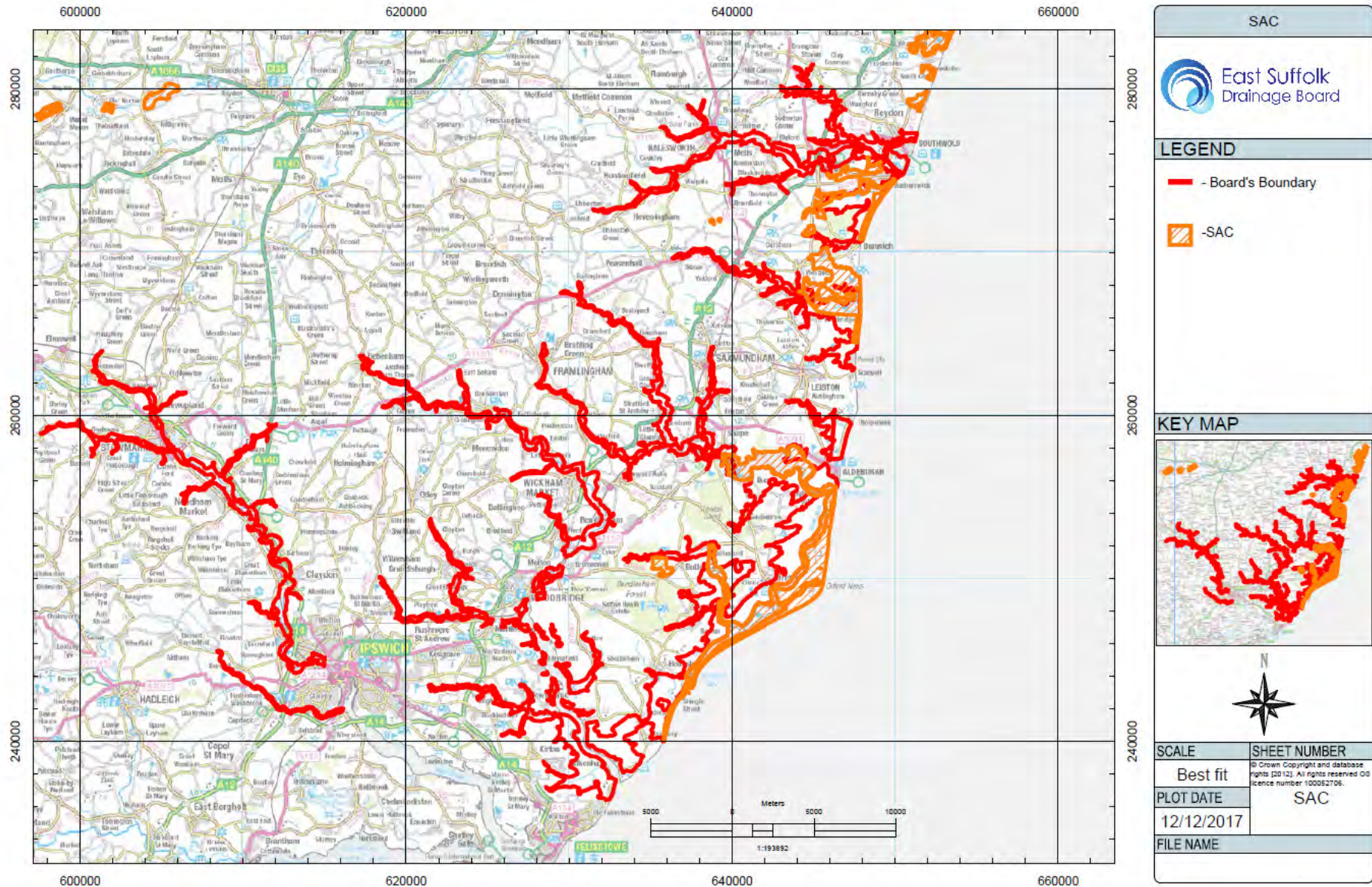
30.	Ensure availability and regular review of identification guides developed for key non-native species to be used by officers, staff and contractors on site.	SWT, Staff and Contractors	2019 & 2022
31.	Regularly review and ensure robust biosecurity measures are being maintained across the Board.	Staff and Contractors	2018 & 2021
32.	Explore funding opportunities with partner organisations to establish a Non Native Project Officer for Suffolk.	SWT, EA and NE	2020-22

Appendix III: Nationally and Internationally Designated Nature Conservation Sites

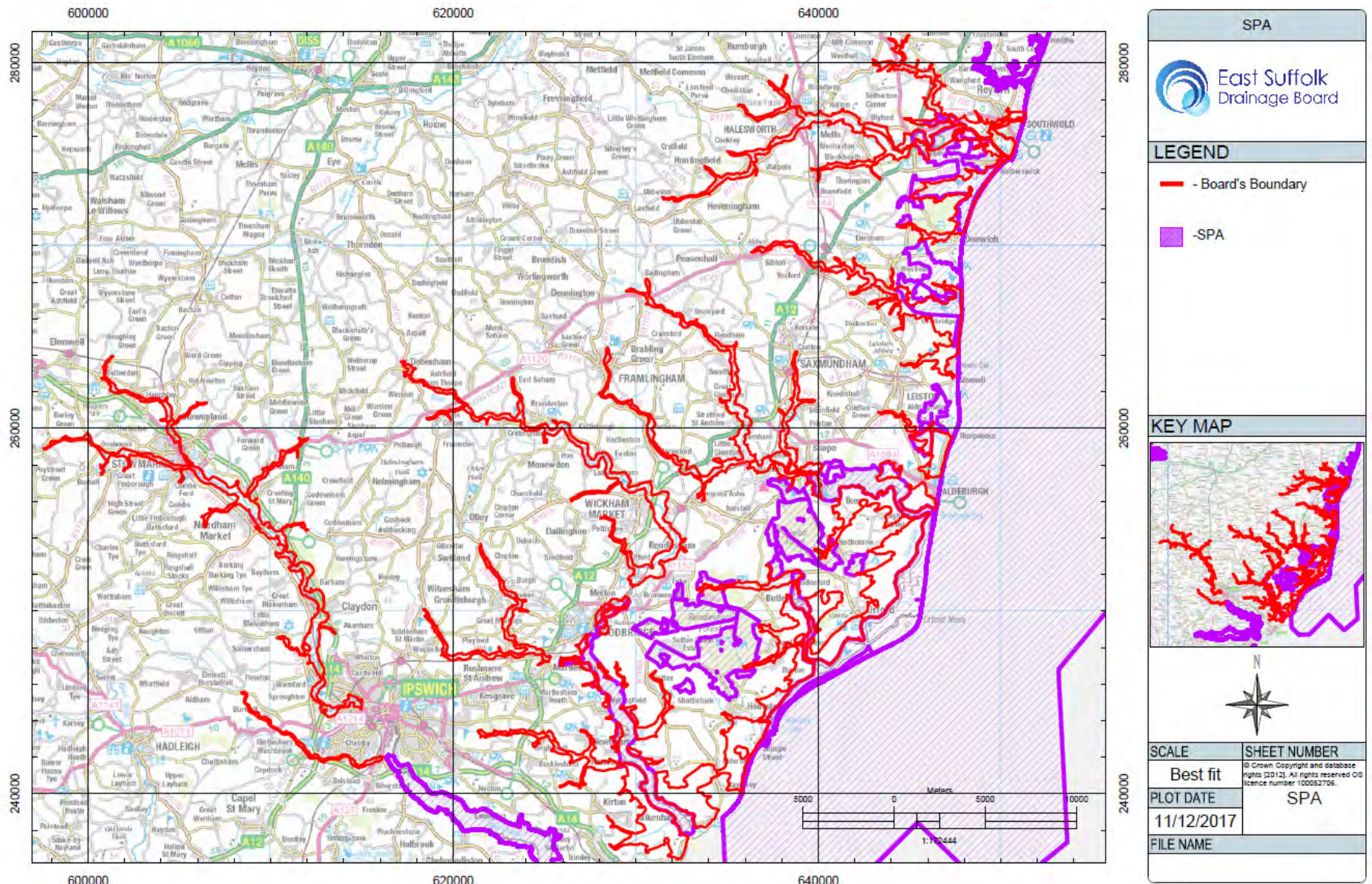
i. Map of Sites of Special Scientific Interest.



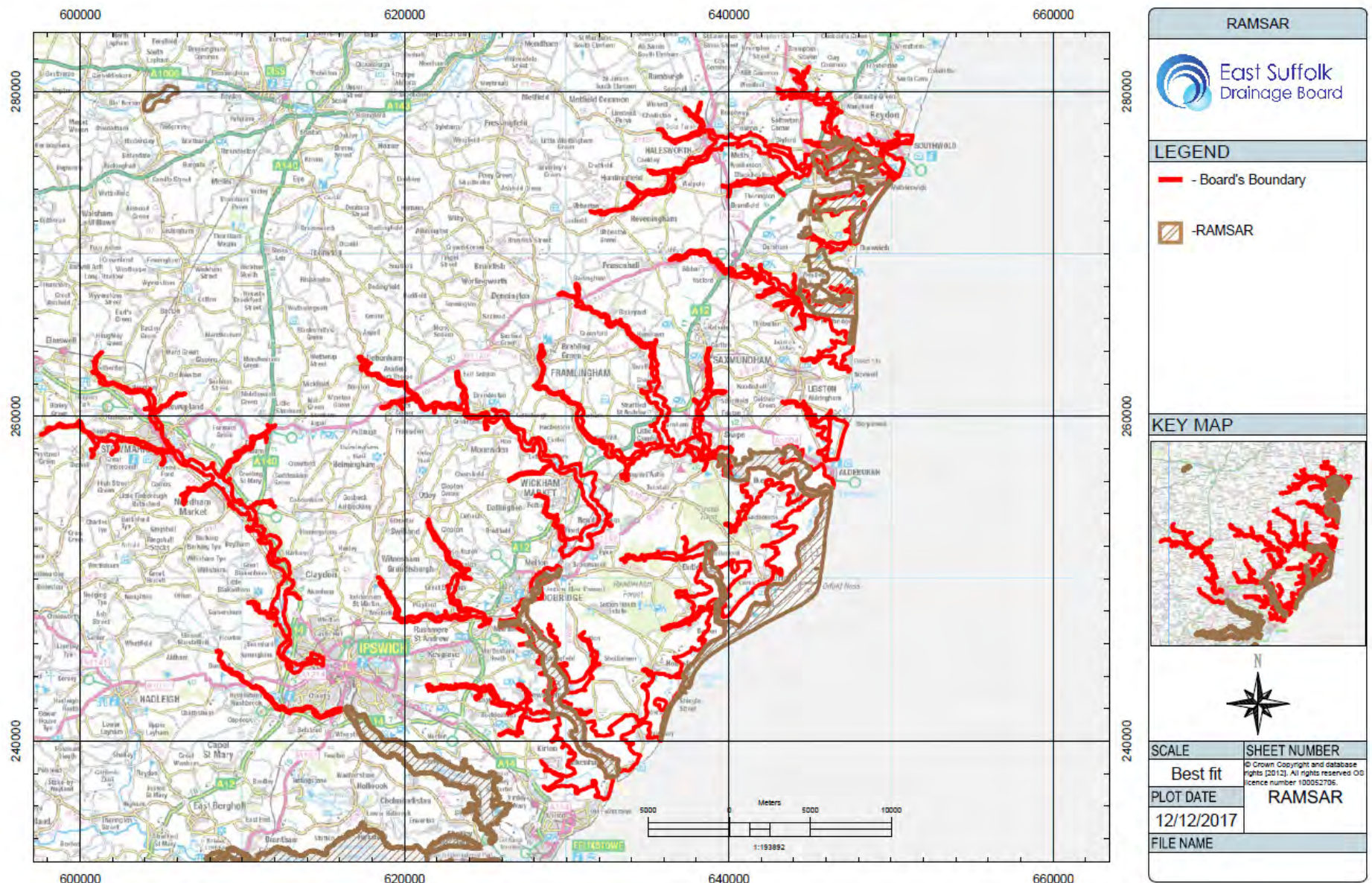
ii. Map of Special Areas of Conservation



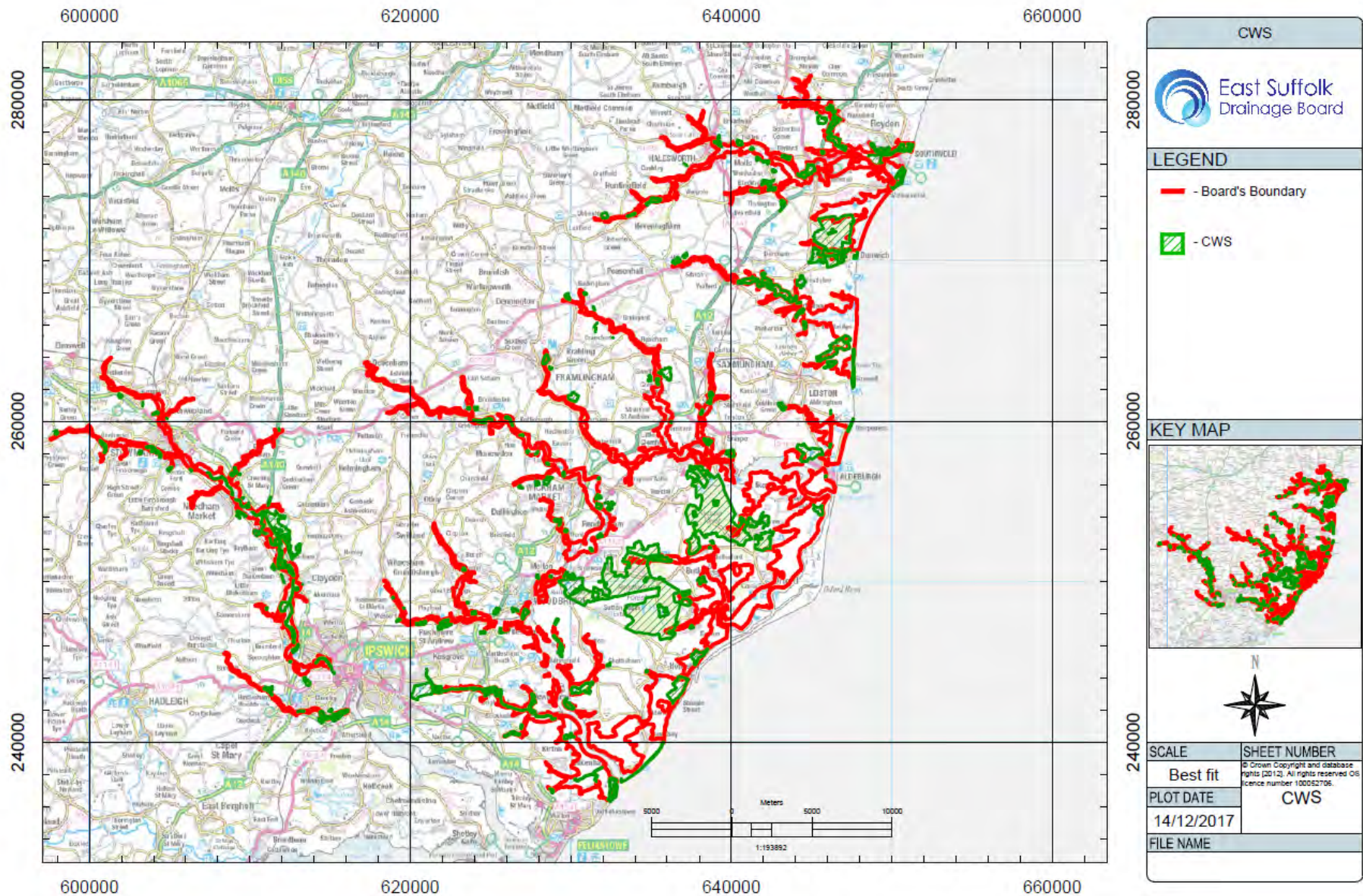
iii. Map of Special Protection Areas



iv. Map of RAMSAR sites



APPENDIX IV: NON-STATUTORY LOCAL SITES – MAP OF COUNTY WILDLIFE SITES



APPENDIX V: SPECIES AUDIT SUMMARY

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
MAMMALS				
Hedgehog	<i>Erinaceus europaeus</i>	Yes	Yes	
Noctule	<i>Nyctalus noctula</i>	Yes	Yes	
55 Khz Pipistrelle	<i>Pipistrellus pipistrellus 55kHz</i>	Yes	Yes	
Barbastelle bat	<i>Barbastella barbastellus</i>	Yes	Yes	
Brown Long-Eared Bat	<i>Plecotus auritus</i>	Yes	Yes	
Brown Hare	<i>Lepus capensis</i>	Yes	Yes	
Red Squirrel	<i>Sciurus vulgaris</i>	Yes	Yes	
Water Vole	<i>Arvicola terrestris</i>	Yes	Yes	Yes
Water Shrew	<i>Neomys fodiens</i>	No	No	Yes
Harvest Mouse	<i>Micromys minutus</i>	Yes	No	
Common Dormouse	<i>Muscardinus avellanarius</i>	Yes	Yes	
Otter	<i>Lutra lutra</i>	Yes	Yes	Yes
BIRDS				
Kestrel	<i>Falco tinnunculus</i>	No	No	
Barn Owl	<i>Tyto alba</i>	No	Yes	
Balearic Shearwater	<i>Puffinus mauretanicus</i>	Yes	No	
Lesser Redpoll	<i>Carduelis cabaret</i>	Yes	No	
Black-Throated Diver	<i>Gavia arctica</i>	Yes	No	
Bittern	<i>Botaurus stellaris</i>	Yes	Yes	
Bewick's Swan	<i>Cygnus columbianus</i>	Yes	No	
European White-Fronted Goose	<i>Anser albifrons albifrons</i>	Yes	No	
Greenland White-Fronted Goose	<i>Anser albifrons flavirostris</i>	Yes	No	
Dark-Bellied Brent Goose	<i>Branta bernicla bernicla</i>	Yes	No	
Scaup	<i>Aythya marila</i>	Yes	No	
Common Scoter	<i>Melanitta nigra</i>	Yes	No	
Black Grouse	<i>Tetrao tetrix</i>	Yes	No	
Grey Partridge	<i>Perdix perdix</i>	Yes	Yes	

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
Corncrake	<i>Crex crex</i>	Yes	No	
Stone-Curlew	<i>Burhinus oedicnemus</i>	Yes	Yes	
Lapwing	<i>Vanellus vanellus</i>	Yes	No	
Black-Tailed Godwit	<i>Limosa limosa</i>	Yes	No	
Curlew	<i>Numenius arquata</i>	Yes	No	
Red-Necked Phalarope	<i>Phalaropus lobatus</i>	Yes	No	
Arctic Skua	<i>Stercorarius parasiticus</i>	Yes	No	
Turtle Dove	<i>Streptopelia turtur</i>	Yes	Yes	
Cuckoo	<i>Cuculus canorus</i>	Yes	No	
Nightjar	<i>Caprimulgus europaeus</i>	Yes	Yes	
Wryneck	<i>Jynx torquilla</i>	Yes	No	
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	Yes	No	
Woodlark	<i>Lullula arborea</i>	Yes	Yes	
Skylark	<i>Alauda arvensis</i>	Yes	Yes	
Tree Pipit	<i>Anthus trivialis</i>	Yes	No	
Yellow Wagtail	<i>Motacilla flava flavissima</i>	Yes	No	
Dunnock	<i>Prunella modularis</i>	Yes	No	
Ring Ouzel	<i>Turdus torquatus</i>	Yes	No	
Song Thrush	<i>Turdus philomelos</i>	Yes	Yes	
Grasshopper Warbler	<i>Locustella naevia</i>	Yes	No	
Savi's Warbler	<i>Locustella luscinioides</i>	Yes	No	
Marsh Warbler	<i>Acrocephalus palustris</i>	Yes	No	
Spotted Flycatcher	<i>Muscicapa striata</i>	Yes	Yes	
Marsh Tit	<i>Parus palustris</i>	Yes	No	
Willow Tit	<i>Parus montanus</i>	Yes	No	
Red-Backed Shrike	<i>Lanius collurio</i>	Yes	No	
Starling	<i>Sturnus vulgaris</i>	Yes	No	
House Sparrow	<i>Passer domesticus</i>	Yes	No	
Linnet	<i>Carduelis cannabina</i>	Yes	Yes	
Twite	<i>Carduelis flavirostris</i>	Yes	No	

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
Bullfinch	<i>Pyrrhula pyrrhula</i>	Yes	Yes	
Hawfinch	<i>Coccothraustes coccothraustes</i>	Yes	No	
Yellowhammer	<i>Emberiza citrinella</i>	Yes	No	
Reed Bunting	<i>Emberiza schoeniclus</i>	Yes	Yes	
Corn Bunting	<i>Miliaria calandra</i>	Yes	Yes	
REPTILES				
Grass snake	<i>Natrix natrix</i>	Yes	No	
Slow-Worm	<i>Anguis fragilis</i>		Yes	
Adder	<i>Vipera berus</i>	Yes	No	
Common Lizard	<i>Lacerta vivipara</i>	Yes	No	
AMPHIBIANS				
Natterjack Toad	<i>Bufo calamita</i>	Yes	No	
Common Toad	<i>Bufo bufo</i>	Yes	No	Yes
Great Crested Newt	<i>Triturus cristatus</i>	Yes	No	
FISH				
Eel	<i>Anguilla anguilla</i>	Yes	No	Yes
BUTTERFLIES AND DRAGONFLIES				
Norfolk Hawker	<i>Aeshna isosceles</i>	Yes	No	
Grayling	<i>Hipparchia semele</i>	Yes	No	
White Letter Hairstreak	<i>Satyrium w-album</i>	Yes	No	
Silver-Studded Blue	<i>Plebejus argus</i>	Yes	Yes	
White Admiral	<i>Ladoga camilla</i>	Yes	No	
Wall	<i>Lasiommata megera</i>	Yes	No	
Small Heath	<i>Coenonympha pamphilus</i>	Yes	No	
MOTHS				
Ghost Moth	<i>Hepialus humuli</i>	Yes	No	
Goat Moth	<i>Cossus cossus</i>	Yes	No	
Pale Eggar	<i>Trichiura crataegi</i>	Yes	No	
Lackey	<i>Malacosoma neustria</i>	Yes	No	
Oak Hook-Tip	<i>Drepana binaria</i>	Yes	No	

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
Small Emerald	<i>Hemistola chrysoprasaria</i>	Yes	No	
Blood-Vein	<i>Timandra griseata</i>	Yes	No	
Mullein Wave	<i>Scopula marginepunctata</i>	Yes	No	
Oblique Carpet	<i>Orthonama vittata</i>	Yes	No	
Dark-Barred Twin-Spot Carpet	<i>Xanthorhoe ferrugata</i>	Yes	No	
Shaded Broad-Bar	<i>Scotopteryx chenopodiata</i>	Yes	No	
Dark Spinach	<i>Pelurga comitata</i>	Yes	No	
Spinach	<i>Eulithis mellinata</i>	Yes	No	
Small Phoenix	<i>Ecliptopera silaceata</i>	Yes	No	
Pretty Chalk Carpet	<i>Melanthia procellata</i>	Yes	No	
Streak	<i>Chesias legatella</i>	Yes	No	
Broom-Tip	<i>Chesias rufata</i>	Yes	No	
Latticed Heath	<i>Semiothisa clathrata</i>	Yes	No	
August Thorn	<i>Ennomos quercinaria</i>	Yes	No	
Dusky Thorn	<i>Ennomos fuscantaria</i>	Yes	No	
September Thorn	<i>Ennomos erosaria</i>	Yes	No	
Brindled Beauty	<i>Lycia hirtaria</i>	Yes	No	
Figure Of Eight	<i>Diloba caeruleocephala</i>	Yes	No	
Garden Tiger	<i>Arctia caja</i>	Yes	No	
White Ermine	<i>Spilosoma lubricipeda</i>	Yes	No	
Buff Ermine	<i>Spilosoma luteum</i>	Yes	No	
Cinnabar	<i>Tyria jacobaeae</i>	Yes	No	
Lunar Yellow Underwing	<i>Noctua orbona</i>	Yes	No	
Double Dart	<i>Graphiphora augur</i>	Yes	No	
Autumnal Rustic	<i>Paradiarsia glareosa glareosa</i>	Yes	No	
Paradiarsia glareosa	<i>Paradiarsia glareosa</i>	Yes	No	
Small Square-Spot	<i>Diarsia rubi</i>	Yes	No	
Heath Rustic	<i>Xestia agathina</i>	Yes	No	
Bordered Gothic	<i>Heliophobus reticulata marginosa</i>	Yes	No	

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
Dot Moth	<i>Melanchra persicariae</i>	Yes	No	
Broom Moth	<i>Ceramica pisi</i>	Yes	No	
Hedge Rustic	<i>Tholera cespitis</i>	Yes	No	
Feathered Gothic	<i>Tholera decimalis</i>	Yes	No	
Shoulder-Striped Wainscot	<i>Orthosia gracilis</i>	Yes	No	
Minor Shoulder-Knot	<i>Mythimna comma</i>	Yes	No	
Sprawler	<i>Brachylomia viminalis</i>	Yes	No	
Deep-Brown Dart	<i>Brachionycha sphinx</i>	Yes	No	
Sword-Grass	<i>Aporophyla lutulenta</i>	Yes	No	
Green-Brindled Crescent	<i>Xylena exsoleta</i>	Yes	No	
Dark Brocade	<i>Allophyes oxyacanthae</i>	Yes	No	
Flounced Chestnut	<i>Mniotype adusta</i>	Yes	No	
Brown-Spot Pinion	<i>Agrochola helvola</i>	Yes	No	
Sallow	<i>Xanthia icteritia</i>	Yes	No	
Dusky-Lemon Sallow	<i>Xanthia gilvago</i>	Yes	No	
Grey Dagger	<i>Acronicta psi</i>	Yes	No	
Knotgrass	<i>Acronicta rumicis</i>	Yes	No	
Mouse Moth	<i>Amphipyra tragopoginis</i>	Yes	No	
White-Spotted Pinion	<i>Cosmia diffinis</i>	Yes	No	
Dusky Brocade	<i>Apamea remissa</i>	Yes	No	
Large Nutmeg	<i>Apamea anceps</i>	Yes	No	
Rosy Minor	<i>Mesoligia literosa</i>	Yes	No	
Fenn's Wainscot	<i>Photedes brevilinea</i>	Yes	No	
Ear Moth	<i>Amphipoea oculea</i>	Yes	No	
Rosy Rustic	<i>Hydraecia micacea</i>	Yes	No	
Crescent	<i>Celaena leucostigma</i>	Yes	No	
White-Mantled Wainscot	<i>Archanara neurica</i>	Yes	Yes	
Rustic	<i>Hoplodrina blanda</i>	Yes	No	
Mottled Rustic	<i>Caradrina morpheus</i>	Yes	No	
Small Square-Spot	<i>Diarsia rubi</i>	Yes	No	

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
BETLES				
Stag Beetle	<i>Lucanus cervus</i>	Yes	Yes	
Oil Beetle	<i>Meloe proscarabaeus</i>	Yes	No	
ANTS, BEES & WASPS				
Fen Mason Wasp	<i>Odynerus simillimus</i>	Yes	No	
5-Banded Tailed Digger Wasp	<i>Cerceris quinquefasciata</i>	Yes	No	
Large garden bumblebee	<i>Bombus ruderatus</i>	Yes	No	
Brown-Banded Carder Bee	<i>Bombus humilis</i>	Yes	No	
Bombus muscorum	<i>Bombus muscorum</i>	Yes	No	
Red-Tailed Carder Bee	<i>Bombus ruderarius</i>	Yes	No	
FLYS				
Cranefly	<i>Lipsothrix nervosa</i>	Yes	Yes	
Campsicnemus magius	<i>Campsicnemus magius</i>	Yes	No	
SPIDERS				
Haplodrassus dalmatensis	<i>Haplodrassus dalmatensis</i>	Yes	Yes	
Arctosa fulvilineata	<i>Arctosa fulvilineata</i>	Yes	No	
Baryphyma duffeyi	<i>Baryphyma duffeyi</i>	Yes	No	
Centromerus prudens	<i>Centromerus prudens</i>	Yes	No	
CRUSTACEA				
White Clawed Crayfish	<i>Austropotamobius pallipes</i>	Yes	Yes	
Lagoon Sand Shrimp	<i>Gammarus insensibilis</i>	Yes	No	
MOLLUSC				
Narrow Mouthed Whorl Snail	<i>Vertigo angustior</i>	Yes	Yes	
FUNGUS				
Hericium coralloides	<i>Hericium coralloides</i>	Yes	No	
Sandy Stilt Puffball	<i>Battarraea phalloides</i>	Yes	Yes	
MOSESSES, LICHEN & LIVERWORTS				
Lecania chlorotiza	<i>Lecania chlorotiza</i>	Yes	No	
Stereocaulon symphycheilum	<i>Stereocaulon symphycheilum</i>	Yes	No	
Usnea articulata	<i>Usnea articulata</i>	Yes	No	

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
Orange-Fruited Elm-Lichen	<i>Caloplaca luteoalba</i>	Yes	Yes	
Tortula vahliana	<i>Tortula vahliana</i>	Yes	No	
Thatch moss	<i>Leptodontium gemmascens</i>	Yes	No	
Sphaerocarpos texanus	<i>Sphaerocarpos texanus</i>	Yes	No	
Caloplaca virescens	<i>Caloplaca virescens</i>	Yes	No	
VASCULAR PLANTS				
Corn Buttercup	<i>Ranunculus arvensis</i>	Yes	No	
Pheasant's Eye	<i>Adonis annua</i>	Yes	No	
Pedunculate Sea-Purslane	<i>Atriplex pedunculata</i>	Yes	No	
Fine-Leaved Sandwort	<i>Minuartia hybrida</i>	Yes	No	
Marsh Stitchwort	<i>Stellaria palustris</i>	Yes	No	
Annual Knawel	<i>Scleranthus annuus</i>	Yes	No	
Small-Flowered Catchfly	<i>Silene gallica</i>	Yes	Yes	
Tower Mustard	<i>Arabis glabra</i>	Yes	Yes	
Cotswold pennycress	<i>Thlaspi perfoliatum</i>	Yes	No	
Shepherd's needle	<i>Scandix pecten-veneris</i>	Yes	Yes	
Greater water-parsnip	<i>Sium latifolium</i>	Yes	Yes	
Tubular Water-Dropwort	<i>Oenanthe fistulosa</i>	Yes	No	
Slender Hare's-Ear	<i>Bupleurum tenuissimum</i>	Yes	No	
Thorow-Wax	<i>Bupleurum rotundifolium</i>	Yes	No	
Caraway	<i>Carum carvi</i>	Yes	No	
Spreading Hedge-Parsley	<i>Torilis arvensis</i>	Yes	No	
Basil Thyme	<i>Clinopodium acinos</i>	Yes	No	
Corn Cleavers	<i>Galium tricornutum</i>	Yes	No	
Broad-fruited corn-salad	<i>Valerianella rimosa</i>	Yes	No	
Cornflower	<i>Centaurea cyanus</i>	Yes	Yes	
Lamb's Succory	<i>Arnoseris minima</i>	Yes		
Red-Tipped Cudweed	<i>Filago lutescens</i>	Yes	Yes	
Broad-Leaved Cudweed	<i>Filago pyramidata</i>	Yes	No	
Flat-Sedge	<i>Blysmus compressus</i>	Yes	No	

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL LBAP SPECIES	NON-BAP SPECIES IMPORTANT TO IDB
Divided Sedge	<i>Carex divisa</i>	Yes	No	
Borrer's Saltmarsh-Grass	<i>Puccinellia fasciculata</i>	Yes	No	
Purple Marram	<i>x Calammophila baltica</i>	Yes	No	
Sea Barley	<i>Hordeum marinum</i>	Yes	No	
Small Cord-Grass	<i>Spartina maritima</i>	Yes	No	
Townsend's Cord-Grass	<i>Spartina x townsendii</i>	Yes	No	
Grape-Hyacinth	<i>Muscari neglectum</i>	Yes	No	
Man Orchid	<i>Aceras anthropophorum</i>	Yes	Yes	
Fly Orchid	<i>Ophrys insectifera</i>	Yes	No	

This Biodiversity Action Plan is a public statement by the Board of its biodiversity objectives and the methods by which it intends to achieve them.

We would welcome appropriate involvement in the delivery of the Plan from interested organisations, companies, and individuals.


You can contact us about this Biodiversity Action Plan by emailing info@wlma.org.uk or writing to the following address:

East Suffolk Internal Drainage Board
Kettlewell House
Austin Fields Industrial Estate
East Suffolk
Norfolk
PE30 1PH

Further information is available on the Board's website: <http://www.wlma.org.uk/east-suffolk-idb>



CONTACT US

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