Broads
Drainage Board

Broads Internal Drainage Board

Biodiversity Action Plan

2023-2028

Cover Photo: Berney Windmill taken by RSPB

1. Statement

This Biodiversity Action Plan (BAP) has been prepared by the Broads Internal Drainage Board in accordance with the commitment in the Implementation Plan of the Defra Internal Drainage Board Review of 2007 for internal drainage boards (IDBs) to produce their own Biodiversity Action Plans. It demonstrates the Board's commitment to fulfilling its duty as a public body to conserve and enhance biodiversity under various legislation and policy including, but not limited to, the Environment Act 2021, the Natural Environment and Rural Communities Act 2006, the 25 Year Environment Plan and Water Framework Directive.

Importantly, it reflects the Board's aspiration to maximise the support it provides to biodiversity, particularly priority UK species and habitats, and the wider environment in general through its day to day activities, by setting clear objectives, actions and targets.

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

…… Date ……..

Robin Buxton

Chairman of the Board

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 writing to the following address:

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Further information is available on the Board's website: https://www.wlma.org.uk/broads-idb/home/

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Executive Summary:

Contributing to biodiversity is an important part of an Internal Drainage Board's role as a modern public authority. Never has there been greater focus on protecting and enhancing our biodiversity as there is today. Through the Broads IDB water level management activities, the Board is uniquely placed to conserve and improve freshwater and wetland habitats, and to forge partnerships with organisations and landowners, to ensure sustainable water level management in lowland areas is undertaken in line with the Natural Environment and Rural Communities Act (2006) and the Environment Act (2021).

Biodiversity Action Plans (BAPs) provide IDBs with a formal mechanism to demonstrate and record their biodiversity contributions . The IDB BAP approach remains the most suitable tool to help IDBs meet their statutory conservation duties under the legislation, where some new approaches are being undertaken to protect and enhance our natural environment.

The Biodiversity Action Plan 2023-2028 although very similar in many respects to its two predecessors, but it now also represents a document which has been reviewed and updated to contain the most up to date legislation and policy. New objectives and action targets have been set following an audit of species and habitats within the internal drainage district, (as provided by the local records centre), to conserve and enhance biodiversity, whilst contributing to the Government's 25 Year Environment Plan and meeting the new legislative requirements.

The Biodiversity Action Plan 2023-2028 summarises the targets, objectives and actions for the following habitats and species, respectively:

- *Coastal and Floodplain Grazing Marsh, Reedbed, Fen, Rivers Canals and Drains, Wet Woodland.*
- *Barn Owl and Kestrel, Breeding Waders, Eel, Grass Snake, Water Vole, Bats, Grass-Wrack Pondweed, Floating Water Plantain, Water Plant Assemblages, Non-Native Invasives.*

2. Introduction

2.1. What is Biodiversity and why is it important?

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.

Biodiversity is part of our natural capital, a vital resource providing:

- Supply of ecosystem services including water, nutrients, climate change mitigation, flood mitigation, carbon storage and pollination;
- Life resources including 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.

This Biodiversity Action Plan is part of a much larger biodiversity framework that encompasses international, national and local levels of legislation and policy and which also include ecosystem services and climate change.

2.2. Legislative Background

When carrying out its functions, an IDB must pay particular regard to the effect on the environment. Some environmental legislation relates specifically to maintaining or restoring the condition of protected sites or protecting certain species, but there are also statutory duties for IDBs to conserve and enhance biodiversity in and alongside the watercourses they manage and the wider landscape.

The Natural Environment and Rural Communities Act 2006 places a duty on IDBs to conserve biodiversity. The Environment Act 2021, when enacted, extends this duty on IDBs to also enhance biodiversity and report periodically on its actions. Therefore, as a public authority, every IDB must consider what action it can take, consistently with the proper exercise of its functions, to further the conservation and enhancement of biodiversity in England.

Below is a list of key environmental legislation (by no means an exhaustive list) relevant to the work of IDBs:

- The Environment Act 2021
- Conservation of Habitats and Species Regulations 2017
- Eels (England and Wales) Regulations 2009

- Water Environment (Water Framework Directive) (England and Wales) Regulations 2003
- Natural Environment and Rural Communities Act 2006 (Section 40)
- The Environmental Impact Assessment (Land Drainage Improvement Works) (Amendment) Regulations 2017
- Land Drainage Act 1994
- Wildlife and Countryside Act 1981 (as amended)
- The Countryside and Rights of Way Act 2000
- The Protection of Badgers Act 1992
- Flood and Water Management Act 2010
- Salmon and Freshwater Fisheries Act 1975

2.3. Policy & Strategic Background

In 1992 at the United Nations Conference on the Environment and Development, commonly known as the Rio Earth Summit, the UK signed the Convention on Biological Diversity which pledged its commitment to contribute towards halting the worldwide loss of habitats and species and their genetic resources. At the 2010 biodiversity summit in Nagoya, Japan, the UK re-affirmed this commitment and the "Biodiversity 2020" white paper was developed setting out how those commitments would be put into action.

The 2010 report by Sir John Lawton "Making Space for Nature" set out that ecological networks were required in order to halt and reverse the declines seen in many threatened species and habitats. The report succinctly made clear that these ecological networks needed to be bigger, more frequent, better in quality, and more joined up in order to be successful in their ambitions.

The concept of Nature Recovery Networks featured in the Government's Biodiversity 2020 strategy (2011) and 25 Year Environment Plan (2018). The Environment Act 2021 and the development of Local Nature Recovery Strategies (LNRS) expands this concept by also take into account the value of the ecological services provided by non-priority species and habitats such as the carbon sequestration of wetlands, the flood alleviation of tree-planting in the uplands and the wellbeing benefits brought about by green space. As such, this BAP presents the actions planned by the IDB to support both priority and non-priority species.

International reports such as by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) have found that climate change in particular is considered to be one of the biggest threats to our biodiversity now, and in the future. Supporting the continuity, connectivity and quality of habitat through management, restoration and expansion may help even the less mobile species to adapt more easily to climate change. This BAP presents the actions the IDB can take to support climate resilience for biodiversity.

2.4. Purpose

This BAP has been produced to demonstrate how the IDB fulfils its legal obligations to conserve and enhance biodiversity and sets out targets and actions that contribute to local, national and international strategies and policies.

While the IDB has a statutory duty to have regard for the environment whilst carrying out their functions, for example on or within drainage assets such as watercourses and their banks, the IDB has also to give consideration to how they can contribute to the enhancement of the wider environment.

It is not within the scope of this document to set out the IDBs' objectives and actions in relation to wider environmental topics, such as reducing carbon emissions or reducing waste. However, strategies to address such topics may be mentioned in connection to the enhancement of habitats and species, such as peatland restoration and carbon sequestration.

The opportunity to work together to support and enhance biodiversity in partnership with other organisations is sought wherever possible, as the IDB recognises the additional value working in such ways can bring to the overall objectives.

The intention is that biodiversity is fully integrated into the Board's activities, policies and procedures such as annual maintenance programmes, capital works projects, training and communications.

2.5. Vision

The IDB's vision is:

A drainage district where thriving wildlife is an integral part of delivering efficient and effective water-level management

2.6. Aims

The aims of this 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 makes a positive contribution to the enhancement of the biodiversity and the natural environment;
- To ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations;
- To ensure that Priority species and habitats receive effective action within defined targets within the drainage district;
- To identify targets and appropriate actions for other habitats and species of local importance within the drainage district. This includes invasive non- native species;
- To enable more effective monitoring and report on progress in biodiversity conservation.
- To contribute to local environmental partnerships such as the Local Nature Partnership to ensure that programmes and priorities for biodiversity conservation are aligned and

maintained in the long term;

- To contribute to the Local Nature Recovery Strategy and Local Nature Recovery Partnerships;
- To raise awareness within the IDB and locally of the need for biodiversity conservation, and to communicate with the local and wider community what actions the IDB are undertaking to support biodiversity.
- To ensure that the Broads IDB BAP document remains current and up to date as priority species and habitats change within the IDD and with regards to climate change. The board can agree changes more frequently when appropriate.

3. The IDB BAP Process

3.1. The Biodiversity Audit

The Broads IDB has conducted a biodiversity audit of its drainage district (Figure 1) and identified those habitats and species that would benefit from particular management or actions by the IDB.

This BAP focuses on nationally important priority habitats and species, that is to say those that have been deemed of 'principal importance' in England under the NERC Act 2006. However, those that are not priority species or habitats, but may be locally significant for a variety of reasons have also been considered. Invasive non-native species have also been included.

The information gathered, which is presented in later sections, has been used to develop this IDB's Biodiversity Action Plan.

3.2. Objectives, Targets and Actions

For each relevant habitat and species, conservation objectives have been identified. The action plan then details individual actions required to achieve the objectives, and associated monitoring and reporting of progress and impact.

In order for this BAP to be as effective as possible the targets and actions have been devised to be SMART (Specific, Measurable, Achievable, Relevant and Time-limited).

Procedural targets and actions have also been considered allowing the Board 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.

3.3. Monitoring and Reporting

Monitoring is the on-going process of regularly collecting and analysing relevant information to make sure the actions within the Plan are positively contributing towards the targets and to capture any additional benefit achieved. The Plan sets out how and when this monitoring will take place for example, to regularly review the progress of actions against the plan at Board meetings throughout the life of the plan.

The frequency and type of information reported is also defined by the Plan and includes the publication of progress reports in the public domain via the IDB's website and in accordance with the duty set out in the Environment Act 2021.

The overall plan will be updated at least every 5 years but as this is a dynamic document it may change more frequently. For example, in the light of routine monitoring, changes may be necessary to ensure an objective can be met.

4. The Biodiversity Audit

4.1. The Broads Internal Drainage District

The Broads (2006) IDB has a catchment area of 456.02km^2 and contains 326km of IDB-maintained watercourses. The area includes some of the countries finest grazing marshes, arable land, several hugely important local, national and internationally designated wildlife sites and the Broads Authority Executive area, which belongs to the family of National Parks. Much of the local economy in the area is derived from agriculture and the thriving tourist and eco-tourist industry created in this internationally acclaimed wildlife haven.

The drainage board district services a largely rural population, with the area having approximately 50,000 people. It drains several large villages such as Hickling, Upton and Sutton, the towns of Acle and Caister as well as small outlying villages and smallholdings. The drainage district is bounded by the dune system and sandstone cliffs bordering the North Sea to the north east, and by the River Yare to the south. Large areas of farm and marshland have been reclaimed from the sea and a large proportion of the catchment lies below sea level. Salt water inundation can be a problem at certain times of year in the Rivers Bure, Thurne and Yare.

Appropriate water level and watercourse management for all stakeholders is critical to the Broads Internal Drainage Board. Achieving the correct balance between the needs of the environment and defending agricultural land and property in this area is critical. The needs of the ratepayer are achieved by 37 pumping stations, 62 water level control structures and a good working relationship with landowners and conservation bodies alike.

The following outlines the key details of the District:

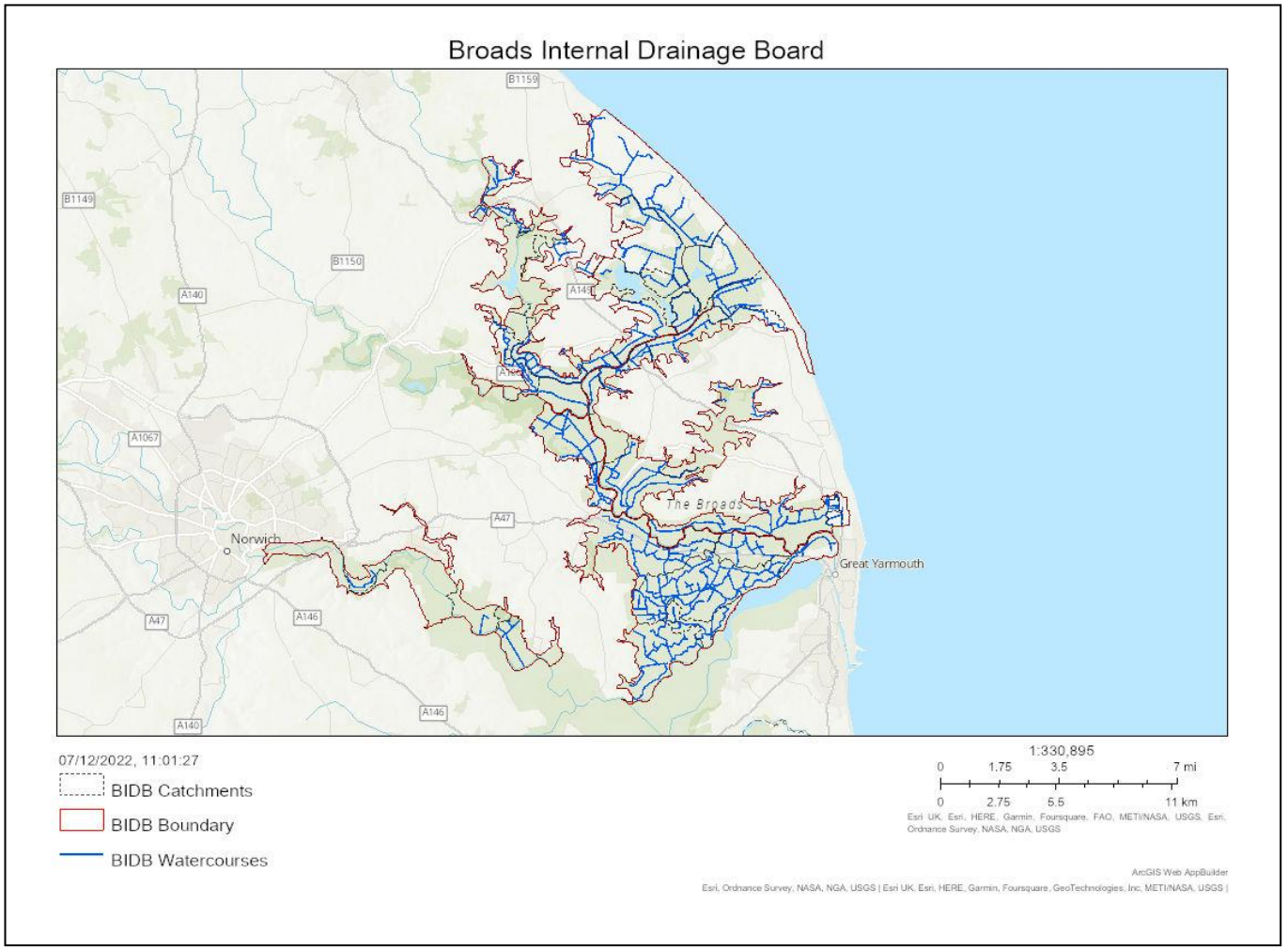
- Total area of the drainage district: **19.052 ha**
- Catchment area draining to and including the District: **45,602 ha**
- Area of agricultural land: **16,139 ha**
- Area of other (non-agricultural) land: **2,913 ha**

Assets for which the Board has operational responsibility:

- Water level control structures: **62**
- Watercourses (maintained): **340 km**
- Raised embankments: 6 **km**
- Reservoirs: **0** ha
- Sustainable drainage systems (SuDS): unknown
- Pumping Stations: **37**
- Culverts: unknown

4.2. Map of Audit Area (Drainage District)

Figure 1. Broads Internal Drainage District (*OS Licence : 100047016*)



4.3. Geology

The chalk formations of the Cretaceous period are important to Broadland, as much of the region's rivers are derived from the groundwater aquifers within it. However, the chalk layer itself is set deeper at Great Yarmouth as opposed to Norwich or Wroxham owing to tilting caused by movements of the earth's crust.

Norwich crag was laid down over the chalk in Broadland during the Pleistocene when the area was a shallow sea and consists mainly of iron-rich sands, clays and gravels.

As the ice retreated after the Anglian glaciation, chalky boulder clay was laid down covering much of the southern and eastern parts of Broadland. As sea levels rose as the glaciers retreated, the once forested floor of the north sea was submerged; inland the floodplains widened and reed swamp and fen communities prevailed and the beginnings of the organic peat layers were set around 9000 years ago. Various changes in sea level have occurred over time and tidal penetration occurred laying down clay layers inland and between the organic peats.

From an estimated 1000 years a fishing port has been established at Great Yarmouth and the peat laid down in the middle and upper sections of the Broadland river valleys was exploited as a source of fuel by this and other settlements. Some of these extractions were cut deeply into the peat layers laid down between 2000-5000 years ago resulting in some excavations being up to 10m deep. These deep pits later flooded to become the Broads as we know them today. Peat continued to be cut from extensive shallow workings in the fen until the 1920s.

4.4. 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. For each NCA, there is a prepared profile that characterises the wildlife and natural features, identifies the influences that act upon those features and sets objectives for nature conservation. A map displaying the NCA's can be found in appendix 1.

<u>The Broads- 80</u>
The northern area of the drainage district which includes the Lower Yare and the Waveney Valley downstream of Bungay to Great Yarmouth is within the Broads NCA. The character of the Broads is very mixed, consisting predominantly of a contrast between large, open, grazing marshes and low-lying wetland which is made up of an intricate mix of Broads (flooded former peat diggings), waterways, reed swamp, fen and carr woodland. In the upper reaches of the river valleys, deciduous woodland, copses and hedgerows give an intimate pastoral character which is more akin to the small valleys incised into the East Anglian glacial till.

4.5. Landscape Designations

The Broads IDB has two landscape designations within its drainage district.

The North Norfolk Coast AONB:
The North Norfolk Coast Area of Outstanding Beauty covers intertidal, coastal and agricultural land with a total area of over 450km2. The AONB stretches from the silt expanses of the Wash in the west through the coastal marshes, soft cliffs and hinterland of North Norfolk, to the dune system at Winterton in the east.

The Broads:
The Broads are made up of flooded peat pits dug in medieval times that are now reed fringed lakes, many of which are connected to the five rivers that flow through the Broads by Dykes. The Broads consists of fens, slow, winding waterways, wet, tangled woodlands, and acres of marches. They extend from Norwich to Lowerstoft and total over 201km of navigation waters, covering an area of some 300km2. It is the largest protected wetland and third largest inland waterway in the UK.

4.6. Sites and Monuments

The Board holds some information on Sites and Monuments. The Board will continue to carry out searches prior to work, as required, to prevent any Sites or Monuments being missed. Relevant information on Sites and Monuments within the Broads IDB catchment can be found on the Norfolk Heritage Explorer at https://www.heritage.norfolk.gov.uk/map-search

4.7. Tree Preservation Orders

The Board hold some information on Tree Preservation Orders (TPO's). The Board will continue to carry out searches prior to work, as required, to prevent any new Tree Preservation Orders being missed. Relevant information on TPO's within the Broads IDB catchment can be found on the relevant District Council websites as follows:

North Norfolk District Council – http://maps.north-norfolk.gov.uk/wmlpublic9/Map.aspx?MapName=TPO
South Norfolk District Council – https://www.southnorfolkandbroadland.gov.uk/trees-hedges/protected-trees/2
Broadland District Council – https://www.southnorfolkandbroadland.gov.uk/trees-hedges/protected-trees/2
Great Yarmouth District (B) - https://gybc.maps.arcgis.com/apps/webappviewer/index.html?id=bd2241fbbf204151a72cedacacc22aa9

4.8. Statutory Nature Conservation Sites

4.8.1 Internationally Designated Sites

The following internationally-designated conservation sites, relevant to the water level management* and/or maintenance activities of the IDB, are found within or adjacent to the drainage district. Maps displaying the internationally designated sites within the IDD can be found in Appendix 2.

Table 1. Internationally designated sites within or adjacent to the IDB boundary

Site name	Designation	Associated WLMP*	Features Relevant to IDB
Broadland	Ramsar, SPA	Horning, Ludham Bridge East, Chaplefield, Sutton, Wayford Bridge and East Ruston, Hemsby and Muckfleet, Brograve, Lower Yare Fourth, Halvergate, Horsefen, Potter Heigham, Thurne, Repps, Somerton, Catfiled, Martham, Upton, Lower Yare First	Mosaic of wetland habitats including open water, reedbeds, carr woodland, grazing marsh and fen meadow. International importance for a variety of wintering and breeding raptors and waterbirds, including Bittern, Marsh Harrier, Lapwing and Redshank.
Breydon Water	Ramsar, SPA	Halvergate	Inland tidal estuary at the mouth of the River Yare and its confluence with the Rivers Bure and Waveney and an adjacent area of drained floodplain. Extensive areas of mudflats that are exposed at low tide and these form the only tidal flats on the east coast of Norfolk. An area of lowland wet grassland and is internationally important for wintering waterfowl.
The Broads	SAC	Horning, Ludham Bridge East, Chaplefield, Sutton, Wayford Bridge and East Ruston, Hemsby and Muckfleet, Brograve, Lower Yare Fourth, Halvergate, Horsefen,	Mosaic of wetland habitats including open water, reedbeds, carr woodland, grazing marsh and fen meadow. Important for a variety of plants and macrophytes including Fen Orchid, Stoneworts, Pondweeds, Water-milfoil and Water-lily.

		Potter Heigham, Thurne, Repps, Somerton, Catfiled, Martham, Upton, Lower Yare First	
Winterton – Horsey Dunes	SAC	Horsey, Somerton	An extensive dune system supporting acidic plant communities. It contains well-developed areas of dune heath, slacks and dune grassland merging into grazing marsh and downy birch woodland, and some base-rich areas that are associated with the areas ponds.

*Further information regarding Water Level Management Plans (WLMPs) are given later in the document

4.8.2 Nationally Designated Sites

The following nationally-designated conservation sites, relevant to water level management and/or maintenance activities of the IDB, are found within the drainage district. Maps displaying the internationally designated sites within the IDD can be found in Appendix 3.

Table 2. Nationally designated sites within or adjacent to the drainage district

Site name	Designation	Component of an International Site	Associated WLMP*	Features Relevant to IDB
Alderfen Broad	SSSI, NNR	Broadland SPA & Ramsar Broads SAC	Horning	Broadleaved, mixed and yew woodland – lowland Fen, marsh and swamp – lowland Standing open water and canals
Ant Broad and Marshes	SSSI, NNR (Ant Broads and Marshes & How Hill)	Broadland SPA & Ramsar Broads SAC	Ludham Bridge East, Chaplefield, Sutton	Broadleaved, mixed and yew woodland – lowland Fen, marsh and swamp – lowland Standing open water and canals
Breydon Water	SSSI	Breydon SPA, Breydon Water RAMSAR	Lower Bure and Halvergate	Littoral sediment Neutral grassland - lowland Salt Marsh
Broad Fen, Dilham	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Wayford Bridge and East Ruston	Fen, marsh and swamp – lowland Standing open water and canals

Bure Broads and Marshes	SSSI, NNR	Broadland SPA, Broads SAC, Broadland RAMSAR		Broadleaved, mixed and yew woodland – lowland Fen, marsh and swamp – lowland Standing open water and canals
Burgh Common and Muckfleet Marshes	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Hemsby and Muckfleet Marshes	Standing open water and canals Fen, marsh and swamp - lowland
Calthorpe Broad	SSSI, NNR	Broadland SPA, Broads SAC, Broadland RAMSAR	Brograve Upper Thurne	Acid grassland - lowland Broadleaved, mixed and yew woodland – lowland Fen, marsh and swamp – lowland
Cantley Marshes	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Lower Yare Fourth	Standing open water and canals Broadleaved, mixed and yew woodland – lowland Floodplain Grazing Marsh
Damgate Marshes, Acle	SSSI	Broadland SPA, Broads SAC,	Lower Bure and Halvergate	Standing open water and canals
Decoy Carr, Acle	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Lower Bure and Halvergate	Broadleaved, mixed and yew woodland – lowland Floodplain Grazing Marsh
Hall Farm Fen, Hemsby	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Hemsby and Muckfleet Marshes	Fen, marsh and swamp – lowland
Halvergate Marshes	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Lower Bure and Halvergate	Standing open water and canals Broadleaved, mixed and yew woodland – lowland Floodplain Grazing Marsh
Ludham – Potter Heigham Marshes	SSSI, NNR	Broadland SPA, Broads SAC, Broadland RAMSAR	Horsefen Potter Heigham Upper Thurne	Standing open water and canals Fen, marsh and swamp – lowland Acid grassland - lowland Broadleaved, mixed and yew woodland – lowland

Priory Meadows, Hickling	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Hickling	Acid grassland - lowland
Shallam Dyke Marshes, Thurne	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Thurne Repps	Boundary and linear features Standing open water and canals Floodplain Grazing Marsh
Trinity Broads	SSSI	Broads SAC,	Hemsby and Muckfleet Marshes	Broadleaved, mixed and yew woodland – lowland, Fen, marsh and swamp - lowland , Standing open water and canals
Upper Thurne Broads and Marshes	SSSI, NNR (Hickling Broad & Martham Broad)	Broadland SPA, Broads SAC, Broadland RAMSAR	Hickling Horsey Heigham Holmes Potter Heigham Catfield Martham Brograve Somerton Upper Thurne	Standing open water and canals, Broadleaved, mixed and yew woodland – lowland, Fen, marsh and swamp – lowland
Upton Broad and Marshes	SSSI	Broadland SPA, Broads SAC, Broadland RAMSAR	Upton	Fen, marsh and swamp – lowland, Broadleaved, mixed and yew woodland – lowland, Standing open water and canals
Winterton – horsey Dunes	SSSI, NNR	Winterton to Horsey Dunes SAC	Horsey Somerton	Supralittoral sediment Lowland Dune system
Yare Broads and Marshes	SSSI, NNR	Broadland SPA, Broads SAC, Broadland RAMSAR	Lower Yare Fourth Lower Yare First	Fen, marsh and swamp – lowland, Broadleaved, mixed and yew woodland – lowland, Standing open water and canals.

4.8.3 Local Nature Reserves

The following Local Nature Reserves are relevant to the activities of the IDB are found within the drainage district.

Table 3. Local Nature Reserves within the drainage district

Site name	Associated WLMP*	Features Relevant to IDB
Breydon Water	Halvergate	Consists of the Breydon Water estuary and saltmarsh. Important for breeding waders and overwintering birds.
Brundall Church Fen		Consisting of fen and alder carr, bordered by the river Yare, Brundall Broad, and a railway line.
South Walsham Fen		Consisting of semi-improved grassland and species rich hedges, and areas of ancient woodland.

4.8.4 Non-statutory Nature Conservation Sites

A number of sites have been identified locally as being important for wildlife. Whilst these designations do not have statutory status, the sites are important for their contribution to biodiversity and planning policy requires that they are given consideration by the LPA in forming any decision. The following relevant Local Wildlife Sites are to be found within or bordering the drainage district. Maps displaying the Non-statutory Nature Conservation sites within the IDD can be found in Appendix 4.

Table 4. Non-Statutory sites within the drainage district

Site name	Site name	Site name
Alder Carr & Guttermere Bridge	Ash Carr and West of Dovehouse Plantation	Birch Grove & Dawling's Wood
Brick Kiln Coverts	Brickstone Carr	Buttle Marsh
Calthorpe Broad Wood	Carey's Meadow	Commissioner Grassland
Cow Plantation	Cremer's Meadow	Damgate Wood
Decoy Wood & South Wood	Dunham Carr	East of Bure Broads and Marshes
Eastfield Wood	Eye Farm Wood	Farm Carr
Highnoon Farm, Braydeston	Home Plantation	Ingham Fen
Knacker's Wood	Lacon Covert	Lambridge Covert
Land adj. Witton Lane	Land adjacent to Horse Fen	Land near French's Farm
Land south of Hempstead Marshes	Land south of Potter Heigham	Long Gore Marsh
Long Meadow, Buckenham Carrs	Manor House Wood	Marram Hills
Marshes at Horse's Head, Upton	Marshes at Irstead Street	Marshes North of Marsh Road
Marston's Wood (Lound Alder Carr)	New Cut	North of Horning Hall
North Wood	Poor Allotment & Cotton's Marsh	Postle's Plantation & Meadow
Stalham Fen	Surlingham Meadow	Sutton Meadows

Site name	Site name	Site name
The Carr	Waxham Sands Holiday Park	West Coverts & Home Broad
Whinmere Plantation	Whitlingham Fen	Whitlington Marsh
Winterton PCC Land	Wood near Berry Hall	

4.9. Habitat Audit Summary

This habitat audit summary lists the UK priority habitats that occur within the drainage district and are identified as likely to be influenced by the Board's activities. Also listed are habitats deemed to be of local importance and/or featured in local nature strategies that occur in the drainage district. Finally, brief notes are included on the potential for the IDB to maintain, restore or expand its important habitats. Not all habitats listed in the table below are taken to action plans, but are still relevant to the IDD.

Table 5. Habitat Audit Summary

National Priority Habitat	National Status & Extent	Local Priority Habitat	Local Status and Extent	Habitat of Importance for IDB	Extent, status and Location of Habitat of Importance within drainage district	IDB Potential for Maintaining, Restoring or Expanding Habitat (high/medium/low)
Coastal and Floodplain Grazing Marsh	The exact extent of grazing marsh in the UK is not known but it is possible that there may be a total of 300,000 ha. England holds the largest proportion with an estimate in 1994 of 200,000 ha.	Coastal and floodplain grazing marsh	Grazing marsh is an extensive habitat within Norfolk, estimated to cover some 29,500 ha. Individual blocks vary greatly in size, from 10 ha rising to 2,642 ha for Halvergate Marshes.	Grazing marsh and associated ditch systems	Throughout District	**High** IDB potential to maintain and improve condition through sensitive management, and landowner partnerships for extending areas.
Fen, Marsh and Swamp	It is proposed that the total extent of the Purple moor grass and rush pastures habitat in the UK is approximately 56,000ha	Purple Moor Grass and Rush Pastures	Unknown	Purple Moor Grass and Rush Pastures	Surlingham, Buckenham, Cantley, Wickhampton, Tunstall, Upton, Fleggburgh, Sea Palling	**High** IDB potential to maintain and improve condition through sensitive management and landowner partnerships for maintain and restoring areas.
Lowland Fens	The UK is thought to host a large	Fens	Norfolk is particularly rich in fen habitats,	Lowland Fens	Yare First and Fourth, Tunstall, Fleggburgh, Horsey, Potter	**High** IDB potential to maintain and improve

	proportion of fen surviving in Europe. As in other parts of Europe, fen vegetation has declined dramatically in the past century.		supporting a large proportion of the UK total for some types. The Broads natural area possesses some 5,000 ha of rich-fen habitat, mostly of the floodplain type, with some examples of valley fen.		Heigham, Hickling, Wayford, Irstead, Catfield and Sutton Fen	condition through sensitive management and landowner partnerships for maintain and restoring areas.
Lowland Meadows	It is estimated that only 10,521 ha of species-rich neutral grassland survive today in the UK.	Lowland meadows and pastures	East Anglia contains a small percentage (21%) of land occupied by permanent pasture and rough grazing (Roberts and Smyth, 1990).	Lowland Meadows	Whitlingham, Poor Allotment and Cottons Marsh CWS (Hickling)	**High** IDB potential to maintain condition through sensitive management
Reedbeds	A scarce habitat. The RSPB Reedbed Inventory suggests over 1,540 ha in Norfolk - almost 30% of the UK resource.	Reedbeds	A rare habitat. Approximately 1,540 ha of reedbeds exist in Norfolk.	Reedbeds	Throughout the River valleys, including the Yare, Thurne, Ant, Bure	**High** IDB potential to maintain and improve condition through maintaining condition through sensitive management, landowner partnership for extending area.
Rivers and Streams	This habitat type includes a very wide range of types, encompassing all natural and near-natural running waters in the UK.	Rivers, canals and drains	Numerous Rivers and Streams flow through Norfolk	Rivers, canals and drains	Throughout District	**High** IDB potential to maintain condition through sensitive management, and landowner partnerships for extending areas.
Wet Woodland	There are no precise data on the total extent of wet woodland in the UK, but in the	Alder Carr Weet Woodland	The woodland in both the Broads and that found on valley fen/mires is a European priority feature under the Conservation	Wet Woodland	Throughout District	**Medium** IDB potential to maintain or restore condition though sensitive management

	late 1980s the Nature Conservancy Council estimated the total extent of this type in ancient semi-natural woodland to be about 25,000–30,000ha. Thus a crude estimate of the total wet woodland area in the UK is 50,000–70,000ha.		(Natural Habitat) Regulations 1994 and has been listed as a feature in both the Broads SAC and Norfolk Valley Fens SAC.			
Arable Field Margins	There is an estimated 400,000km of cereal field margin in the UK and if all boundaries included a 6m managed margin, this would increase the conservation value for wildlife on farmland by 200,000 ha.	Cereal Field Margins	Unknown	Arable Field Margins	Throughout District	**Low** IDB potential to maintain or restore condition
Coastal Sand Dunes	There are approximately 11,897 ha of Coastal Sand Dunes across England.	Coastal Sand Dunes	The exact extent of Coastal Sand Dunes in Norfolk is unknown, but is estimated at approximately 1,200 ha.	Coastal Sand Dunes	Winterton on Sea, Horsey, Waxham, West Caister	**Low** IDB potential to maintain or restore condition

Low Mix Deciduous Woodland	In the 1980s, the Nature Conservancy Council estimated the total extent of this type to be 250,000 ha. It is believed to have declined in extent by 30- 40% over the last 50 years.	Lowland Mixed Deciduous Woodland	In Norfolk, there are no precise measurements of the extent of this habitat. Many are ancient woods and they include the classic examples of ancient woodland studied by Rackham (1980) and Peterken (1981) in East Anglia and the East Midlands.	Deciduous Woodland	Throughout District	**Low** IDB potential to maintain or restore condition
Lowland Heathland	The UK has approximately 95,000 ha of lowland heathland, 58,000 ha of this is within England.	Lowland Heathland and Dry Acid Grassland	It is estimated that Norfolk holds approximately 7,878 ha of lowland heathland.	Lowland heathland	Potter Heigham, Winterton	**Low** IDB potential to maintain or restore condition
Ponds	The current number of ponds in the UK has been estimated around 400,000 (excluding garden ponds), with approximately 60% of these in lowland Britain. Declining slowly	Ponds, lakes and reservoirs	It is estimated that Norfolk hold approximately 23,000 ponds, mainly located on farmland. The Norfolk Brecklands also holds over 100 ‘pingo ponds’, ancient ponds formed during the last great ice age.	Ponds	Throughout District	**Low** Ponds are not on our IDB owned land, so it will be inhibited by funding.
Traditional Orchards	Of the 35,557 ha or orchards in England, only 14% are managed as traditional orchards.	Traditional Orchards	In decline.	Traditional Orchards	Surlingham, Billockby, Filby, Thurne, Horning, Sea Palling, Waxham, East Somerton	**Low** IDB potential to maintain or restore condition

4.10. Species Audit Summary

This species audit summary will include priority and other species including INNS that occur within the drainage district and are identified as likely to be influenced by the Board's activities. Also listed are species deemed to be of local importance and/or identified by local nature strategies. Finally, brief notes are included on the potential for the IDB to improve the status of the species in the drainage district. Not all species listed in the table below are taken to action plans, but are still relevant to the IDD. A full list of BAP Priority Species that occur within the BIDD as identified by the species audit, can be found in Appendix 5. Also listed are Section 41 species and species deemed to be of local importance and/or identified in the county Local Biodiversity Action Plan that occur within the IDD.

Table 6. Species Audit Summary

Common & scientific name	National Status	Local Status	Location of Species of Importance within drainage district	IDB Potential for Maintaining or Increasing Species Population or Range (High/medium/low)
AMPHIBIANS				
Great Crested Newt (Triturus cristatus)	The British population of great crested newt is among the largest in Europe but has suffered a decline in recent years and is in unfavourable conservation status. The great crested newt is listed on Annexes II and IV of the EC Habitats Directive, Appendix II of the Bern Convention, and Schedule 5 of the Wildlife and Countryside Act 1981.	The newt is locally common/frequent through south and mid Norfolk and Breckland and has suffered a major decline in the Broads.	Hickling, Horsey, Somerton	**Low** IDB Potential to benefit species from Habitat enhancement
BIRDS				
Barn Owl (*Tyto alba*)	Widely distributed across the UK, barn owl has suffered declines over the past fifty years. This	The drainage district supports a significant population of barn owls, which use ditch banks,	Throughout district	**High** IDB Potential to benefit species from habitat enhancement and

	decline, fortunately, has halted in many areas and the population may now be increasing. A survey completed in 1997, indicated a breeding population of 4,000 pairs. The Barn Owl is protected under Section 1 of the WCA 1981.	pastures and margins for foraging. The population may be limited by lack of nest sites. Rough-grassland margins provided by the banks of watercourses were recognised in 1987 as a vital resource for Barn Owls.		partnerships
Bittern (*Botaurus stellaris*)	The bittern is rare and localised in the UK. It is listed on Annex I of the EC Birds Directive and Appendix II of the Berne Convention. It is protected in the UK under Schedule 1 of the WCA 1981.	Present in the Norfolk Broads and The Fens. The Norfolk Broads are thought to host approximately one eighth of the UK's breeding pairs.	Throughout District	**High** IDB Potential to benefit species from Habitat Action Plans
Breeding Waders	In decline	Present in lowland wetlands across Norfolk.		**High** IDB Potential to benefit species from Habitat Action Plans
Kestrel (*Falco tinnunculus*)	The kestrel is included on the Amber List of Birds of Conservation Concern due to the moderate decline of the UK breeding population	In Norfolk kestrel are the most common bird of prey and their numbers are stable.	Throughout District	**High** IDB Potential to benefit species from Habitat Action Plans
Reed Bunting (*Emberiza schoeniclus*)	The decrease of the reed bunting has occurred at the same time as decreases in the numbers and/or range of a suite of other farmland birds. Classified in the UK as Amber under the Birds of Conservation Concern 4: the Red List for Birds (2015) and a section 41 species. Protected in the UK under the Wildlife and Countryside Act, 1981.	Reed Bunting are recorded throughout the drainage district, which use reed fringes along the rivers, drains and ditches. The restoration and careful management of these reed fringes that are addressed by the reedbed HAP offer the opportunity of enhancing the habitat for this species throughout the district.	Throughout District	**High** IDB Potential to benefit species and enhance reedbed habitat by managing banks so as to retain a mix of mown and unmown grassland
Grasshopper Warbler (*Locustella naevia*)	In decline. Red List species Protected in the UK under the	Fairly common summer visitor and very scarce passage migrant	Throughout District	**Low** IDB Potential to benefit species from Habitat Action

	Wildlife and Countryside Act, 1981.			Plans
Hirundinidae -Sand Martin, Swallows and Swifts	In Britain, the Swallow occurs in a wide range of habitats, whereas the House Martin usually occurs near buildings, and the Sand Martin usually near water.	Common in Norfolk throughout spring and summer seasons	Throughout District	**Low** IDB Potential to benefit species from Habitat Action Plans
Kingfisher (*Alcedo atthis*)	Kingfishers are classified in the UK as Amber under the Birds of Conservation Concern 4: the Red List for Birds (2015). Protected in the UK under the Wildlife and Countryside Act, 1981	Kingfisher numbers in Norfolk have probably increased in recent years with milder winters undoubtedly enabling greater numbers to survive the winter.	Throughout District	**Low** IDB Potential to benefit species from Habitat Action Plans
Skylark (*Alauda arvensis*)	One of the most widespread birds of the British Isles, with over 2 million breeding pairs, the resident population is joined in winter by a significant proportion of the northern European population - possibly up to 25 million individuals. The skylark is protected under the EC Birds Directive and the Wildlife and Countryside Act 1981.	Skylark numbers have faced a decline in Norfolk Broads since 1980's.	Throughout District	**Low** IDB Potential to benefit species from Habitat Action Plans
Swifts (*Apus apus*)	The European swift population is 4.4 - 12 million pairs, with the UK population standing at 85,000 breeding pairs (N.B. figure from 1988-1991). Between 1994 and 2006, the UK population declined by 29%. The swift is protected under the Wildlife and Countryside Act 1981 (as amended).	According to the BTO/JNCC/RSPB Breeding Bird Survey, the swift population appears to be stable in the east of England; however, it declined by 44% in the south-east between 1995 and 2008.	Throughout District	**Low** IDB Potential to benefit species from Habitat Action Plans

Tree Sparrow (*Passer montanus*)	The tree sparrow is patchily distributed on farmland across Britain and Ireland, being scarcer in the uplands, and the far north and west. The tree sparrow is protected under the Wildlife and Countryside Act 1981, Wildlife (Northern Ireland) Order 1985 and EC Birds Directive.	Patchily distributed across the county with main concentrations in north and mid Norfolk and the Brecks (RSPB/NE/BTO/Defra Farmland Bird Database). Unobtrusive and easily over-looked. The 1986 Norfolk Bird Atlas recorded tree sparrow in 36% of 2km squares.	Previously bred in the Broads but thought to be absent at present.	**Low** IDB Potential to benefit species from Habitat Action Plans
Turtle Dove (*Streptopelia turtur*)	The Turtle Dove can mainly be found in Southern and Eastern England. The species has been on the Red List since 1996 and still faces decline at present.	Turtle Doves were once widespread across Norfolk but have faced major decline.	Scattered throughout Norfolk but declining.	**Low** IDB Potential to benefit species from Habitat Action Plans
TERRESTRIAL MAMMALS				
Bats (*Barbastella spp., Myotis spp., Eptesicus spp., Nyctalus spp., Pipistrellus spp., Plecotus spp*.)	All bats and their roosts are protected by UK law and they are also covered by the EU Conservation of Habitats and Species Regulations 2010 as European Protected Species.	The distribution of bats is throughout the drainage district.	Throughout District	**High** IDB Potential to benefit species from Habitat enhancement through erecting bat boxes across the district
Otter (*Lutra lutra*)	An estimate population size of 11,000 individuals in Great Britain.. The otter is listed on Appendix 1 of CITES, Appendix 11 of the Bern Convention and Annexes 11 and IV of the Habitats Directive. It is protected under Schedule 5 of the Wildlife and Countryside Act 1981 and Schedule 2 of the Conservation	Otters now use all major watercourses in Norfolk and populations appear to be recovering. There are significant records of otters throughout the drainage district.	Throughout District	**High** IDB Potential to benefit species from Habitat enhancement

	(Natural Habitats) Regulations 1994.			
Water Vole (*Arvicola amphibius*)	Long term decline. Declining, both in number of sites occupied and number of individuals per colony. An estimate population size of 132,000 individuals in Great Britain. GB populations are inferred to have declined very rapidly over recent years, equating to a 50% decline over 17 years. S41 species, Listed in WCA 1981	There are significant records of Water Vole throughout the drainage district.	Throughout District	**High** IDB Potential to benefit species from Habitat enhancement and appropriate management of watercourses & predator control
FISH				
European Eel (*Anguilla Anguilla*)	Priority Species under the UK Post-2010 Biodiversity Framework. Listed as Critically Endangered on the global IUCN Red List of Threatened Species.	Declines in eel populations have been noted on rivers across Norfolk but the cause is not known, potentially due to barriers limiting eel migration	Throughout District	**High** IDB Potential to benefit species from Habitat enhancement, particularly Rivers and Drains
MOLLUSCS				
Depressed river mussel (*Pseudanodonta complanata*)	In the UK since 1950 it has been recorded from 63 ten km squares in England and Wales. However the species is easily overlooked, and may be more common than thought. The evidence of recording suggests there has been a decline in distribution, though under-recording is a possibility and new populations have been found in recent years.	Recorded in the Norfolk Broads	Throughout the Yare First and Fourth	**Low** IDB Potential to benefit species from Habitat enhancement
Desmoulin's whorl snail (*Vertigo*	In the UK, Desmoulin's whorl snail is known from a series of	Present in the Broads	Sparsely distributed throughout District	**Low** IDB Potential to benefit species from Habitat

moulinsiana)	sites stretching in a broad band from Dorset to Norfolk. This snail is listed on Annex II of the EC Habitats Directive, and is listed as rare in the GB Red List. National decline of this species is difficult to assess as targeted surveys over the last 15 years have resulted in many additional sites being discovered, but this is not considered to be due to the spread of the species.			enhancement
Shining ram's-horn snail (*Segmentina nitida*)	In Britain, it has shown a dramatic decline this century. It is now confined mainly to the Norfolk Broads and Pevensey Levels. The species is listed as endangered in the GB Red List. The most severe decline in the range of this species occurred through the 19th and 20th centuries (Kerney, 1999), but there has still been localised decline over the last 10 years.	Norfolk around the Broads	Sparsely distributed throughout District	**Low** IDB Potential to benefit species from Habitat enhancement
REPTILES				
Grass Snake (*Natrix helvetica*)	Grass snakes have become scarcer. There are still some areas where they are locally abundant, but nationally they are in decline. Protected in the UK under the Wildlife and Countryside Act, 1981. Priority Species under the UK Post-2010 Biodiversity Framework.	Widespread across Norfolk but in decline.	Throughout District	**High** IDB Potential to benefit species from Habitat enhancement and restoration (i.e. grass snake pile construction)
Adder (*Vipera berus*)	Found across the country, protected in the UK under the Wildlife and Countryside Act,	They are scarce across much of East Anglia, but there are strongholds that exist along	Ludham, Somerton, Winterton on Sea, Horsey, Hickling, Sea Palling, Waxham, Martham	**Low** IDB Potential to benefit species from Habitat Action Plans

	1981. Priority Species under the UK Post-2010 Biodiversity Framework.	coasts and heaths. Heathland habitat has declined in Norfolk and it is likely that with the loss of this habitat adders have also declined in numbers and range.		
Common Lizard (*Lacerta vivipara*)	The common lizard is the UK's most common and widespread reptile, Protected in the UK under the Wildlife and Countryside Act, 1981. Priority Species under the UK Post-2010 Biodiversity Framework.	Widespread across Norfolk.	Throughout District	**Low** IDB Potential to benefit species from Habitat Action Plans
INVERTEBRATES				
Scarce Chaser	Threatened. In decline. Localised populations in East Anglia, the East Midlands and parts of southern England from Kent to Devon.	Localised populations in Norfolk, increasing and widespread in East Norfolk.	Buckingham, Hassingham, Strumpshaw, Sutton Fen	**High** IDB Potential to benefit species from Habitat enhancement and restoration
Norfolk Hawker (*Aeshana isoceles*)	The species is of least concern. Full protection under schedule 5 of the Wildlife and Countryside Act 1981, and section 41 of the nerc Act 2006.	Seven of the eight river valleys in Norfolk are occupied by the Norfolk Hawker.	Throughout District	**Low** IDB Potential to benefit species from Habitat enhancement
Pollinators	Many species of bee, moth, butterfly, hoverfly, fly and beetle pollinate £690 million worth of crops annually. The European Red List reported that one in ten species of wild bee face extinction, and over the past 50 years, half the bee, butterfly and moth species studied in the 2013 State of Nature Report have declined.	Present throughout Norfolk	Throughout District	**Low** IDB Potential to benefit species from Habitat enhancement

VASCULAR PLANTS				
Floating Water Plantain (*Luronium natans*)	The distribution of this plant is localised in the UK, with records in Wales, West Midlands, northern England and Scotland. In total, the plant is recored at 55 sites in the UK.	In Norfolk, the plant is recorded at Potter Heigham, which is the only known current site in the county. It has previously been recorded in Calthorpe Broad.	Potter Heigham	**High** IDB Potential to benefit species from appropriate watercourse management
Grass-wrack Pondweed (*Potamogeton compressus*)	The distribution is concentrated in central England, the Welsh boarders and the Norfolk Broads.	The species is restricted to two areas within Norfolk, Upton Fen and South Walsham Marshes.	Upton Doles and South Walsham Marshes	**High** IDB Potential to benefit species from appropriate watercourse management
Great Tassel Stonewort (*Tolypella prolifera*)	This species has been identified at only a few sites in England since 1970, including Cambridgeshire, Gloucestershire and Somerset.	In Norfolk, the species was recorded at Cess Road, Martham in 2006, 2007 and 2011.	Martham	**High** IDB Potential to benefit species from appropriate watercourse management
Wider assemblage of water plants of conservation importance (greater water parsnip, tubular water-dropwort, sharp-leaved pondweed, flat-stalked pondweed, opposite-leaved pondweed, alternate-leaved water-milfoil, frogbit, tassel stonewort).	S.41 species or Eng RDB Vulnerable, Endangered, Critically Endangered	These species range from widespread to highly localised within the Broads, and some drained marsh ditch systems support large populations.	Throughout but particularly SSSI sites at Buckenham, Cantley, Halvergate, Potter Heigham.	**High** IDB Potential to benefit species from appropriate watercourse management and through water management schemes which enhance ditch habitats
Wildflowers (including Fen Orchid, Marsh Lousewort, Marsh Stitchwort)	Protected under section 13 of the Wildlife and Countryside Act (1981).	Present throughout Norfolk	Throughout District	**Low** IDB Potential to benefit species from Habitat Action Plans

4.11. Invasive Non-native Species Summary

The IDB has identified the following high risk aquatic and riparian invasive non-native species within the drainage district that are identified as likely to be influenced by, or impact upon the Board's activities.

Table 7: High risk aquatic invasive non-native species summary

Common & scientific name	Location within IDB if known	Year first recorded	Local status / Extent within drainage district	IDB potential for controlling species population or range
Floating pennywort (*Hydrocotyle ranunculoides*)	Ludham (2015) East Ruston (2020)	2015	The distribution of floating pennywort in Norfolk is largely restricted to the River Waveney, although there have been reported infestations from other isolated waterbodies in the east of the county	NNNSI management plan and control measures, provide advice and partnership working with landowners, biosecurity measures, and recording.
Parrots Feather (*Myriophyllum aquaticum*)	Hickling (2009) Sutton (2021) Irstead (2017)	2009	Parrot's feather is sparsely distributed across the whole of Norfolk, with marginally more records occurring in the east of the county.	Biosecurity measures, and recording.
Himalayan Balsam (*Impatiens glandulifera*)	Throughout district	1995	The plant is now widespread in central and eastern Norfolk and is still expanding its range. It can be seen along the banks of rivers, in wet woodland and on waste ground, often growing in large dense clumps. Widespread distribution.	Partnership working with NNNSI and landowners, provide advice to landowners, biosecurity measures, and recording.
Japanese Knotweed (*Fallopia japonica*)	Throughout district	1995	Widespread distribution.	Control measures on a case by case basis, partnership working with NNNSI and landowners, provide advice to landowners, biosecurity measures, and recording.
American Mink (*Neovison vison*)	Throughout District	2009	Mink can be found in and around many Norfolk waterways and has a widespread distribution.	Partnership working with WLRE and the Norfolk Mink Project.
Australian Swamp-Stonecrop (*Crassula*	Throughout District	2006	Australian swamp stonecrop is common across Norfolk.	Control measures on a case by case basis, partnership working with NNNSI and landowners, biosecurity measures, and recording.

helmsii)				
Water Fern (*Azolla filiculoides*)	Throughout District	1988	Water fern has a widespread distribution across Norfolk.	Control measures on a case by case basis, partnership working with NNNSI and landowners, provide advice to landowners biosecurity measures, and recording.
Giant Hogweed (*Heracleum mantegazzianum*)	Throughout District		Giant hogweed is common across Norfolk. Most records of this plant occur in the east of the county, with the area to the south-east of Norwich having a particularly high density of infestations.	Control measures on a case by case basis, partnership working with NNNSI and landowners, provide advice to landowners, biosecurity measures, and recording.
Rhododendron (*Rhododendron ponticum*)	Throughout District	2007	Rhododendron is common across Norfolk.	Recording
Quagga Mussel and Zebra Mussel (*Dreissena bugensis rostriformis; Dreissena polymorpha*)	Yare First and Fourth (2012) Norfolk Broads	2004	Quagga Mussel and Zebra Mussel are present in the Norfolk Broads	Biosecurity measures and recording.
Signal Crayfish (*Pacifastacus leniusculus*)	River Bure		Signal Crayfish are common across Norfolk in the waterways and Rivers.	Biosecurity measures and recording.
Killer Shrimp (*Dikerogammarus villosus*)	Norfolk Broads	2012	Present in the Trinity Broads and the Norfolk Broads	Biosecurity measures and recording.

4.12. Water Level Management Plans

Water Level Management Plans (WLMPs) provide a means by which the water level requirements for a range of activities in a particular area, including agriculture, flood defense and conservation, can be balanced and integrated. Guidance for the production of WLMPs by the operating authorities for sites of conservation interest was produced by MAFF/ Defra in 1992, 1999 and 2004. This guidance concentrated on SSSIs, especially those of international importance (SPA or SAC sites).

Where IDBs are the operating authority for sites, they may or may not actively manage the water levels.

The table below provides details of the Water Level Management Plans for which the IDB has some involvement within their drainage district. Appendix 6 displays a table of further details regarding the WLMP listed below, including the reason for the WLMP, WLMP partners, and site condition.

Table 8: Water Level management plans in operation within the drainage district

Site of Special Scientific Interest	Water Level Management Plan	Further Designations
Alderfen Broad	Horning	Broadland SPA Broads SAC Broadland Ramsar
Ant Broads and Marshes	Ludham Bridge East Chaplefield Sutton	Broadland SPA Broads SAC Broadland Ramsar
Breydon Water	Halvergate	Breydon Water SPA Breydon Water Ramsar
Broad Fen Dilham	Wayford Bridge and East Ruston	Broadland SPA Broads SAC Broadland Ramsar
Burgh Common and Muckfleet Marshes	Hemsby and Muckfleet	Broadland SPA Broads SAC Broadland Ramsar
Calthorpe Broad	Brograve	Broadland SPA Broads SAC Broadland Ramsar National Nature Reserve
Cantley Marshes	Lower Yare Fourth	Broadland SPA Broads SAC Broadland Ramsar Mid Yare NNR
Damgate Marshes, Acle	Halvergate	Broads SAC Broadland Ramsar
Decoy Carr	Halvergate	Broadland SPA Broads SAC Broadland Ramsar
East Ruston Common	Wayford Bridge and East Ruston	
Hall Farm Fen, Hemsby	Hemsby and Muckfleet	Broadland SPA

		Broads SAC Broadland Ramsar
Halvergate Marshes	Halvergate	Broads SAC Broadland Ramsar
Ludham – Potter Heigham Marsh	Horsefen Potter Heigham	Broadland SPA Broads SAC Broadland Ramsar National Nature Reserve
Priory Meadows	Hickling	Broadland SPA Broads SAC Broadland Ramsar
Shallam Dyke Marshes	Thurne Repps	Broadland SPA Broads SAC Broadland Ramsar
Trinity Broads	Hemsby and Muckfleet	Broads SAC
Upper Thurne and Broads Marshes	Brograve Horsey Heigham Holmes Somerton Hickling Catfield Potter Heigham Martham	Broadland SPA Broads SAC Broadland Ramsar
Upton Broads and Marshes	Upton	Broadland SPA Broads SAC Broadland Ramsar
Winterton to Horsey Dunes	Horsey Somerton	Winterton to Horsey Dunes SAC
Yare Broads and Marshes	Lower Yare Fourth Lower Yare First	Broadland SPA Broads SAC Broadland Ramsar Mid Yare NNR

5. Habitat and Species Action Plans

5.1. Introduction

Action plans comprise the objectives, targets and actions that the IDB has identified for each habitat and species to be included within the BAP. The following sections contain action plans for each of the habitats and species that have been prioritised by the IDB. The national and local targets listed in the below sections are the most up to date targets available, however, these targets will be updated as new targets are defined. The list of partners defined in the action plans includes current active partners but is not exhaustive to partners with potential involvement. A summary table of Biodiversity Action Plan Objectives can be found in Appendix 7 and a summary table of Habitat and Species Action Plans can be found in Appendix 8.

5.2. Habitat Action Plans

5.2.1 Coastal and floodplain grazing marsh

5.2.1.1 National and Local Targets

Table 9:

National Targets	Local Targets
• Maintain the existing habitat extent (300,000 ha) and quality. • Rehabilitate 10,000 ha of grazing marsh habitat which has become too dry, or is intensively managed, by the year 2000. This would comprise 5,000 ha already targeted in ESAs, with an additional 5,000 ha. • Begin creating 2,500 ha of grazing marsh from arable land in targeted areas, in addition to that which will be achieved by existing ESA schemes, with the aim of completing as much as possible by the year 2000.	• Maintain the existing habitat extent (29,500 ha) and its quality, rehabilitate 2,950ha (10% of the total resource in Norfolk) of grazing marsh.

5.2.1.2 IDB Objectives

Table 10:

IDB Objectives	
1	Continue to maintain or enhance the existing extent and quality of Coastal and Floodplain Grazing Marsh within the boards area via Capital Schemes and Watercourse enhancements.

5.2.1.3 IDB Actions

Table 11:

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	1a	Continue to work in partnership with stakeholders to look for opportunities, to enhance grazing marshes by appropriate water level management practice through maintenance or partnership working.	Area (ha) of grazing marsh enhanced	Ongoing	Environment Team	RSPB, NRT, NE, EA, Landowners
1	1b	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance grazing marshes through involvement in projects.	Area (ha) of grazing marsh enhanced	Ongoing	Environment Team	NCC, SCC

5.2.2 Reedbed

5.2.2.1 National and Local Targets

Table 9:

National Targets	Local Targets
• Identify and rehabilitate by the year 2000 the priority areas of existing reedbed (targeting those of 2 ha or more) and maintain this thereafter by active management. • Create 1200 ha of new reedbed on land of low nature conservation interest by 2010. This should be in blocks of at least 20 ha: in areas near to existing habitat; linked with existing habitat wherever possible.	• Maintain existing area and quality as a minimum. Identify and rehabilitate by the year 2010 the priority areas of existing reedbed which are not currently at favourable conservation status. • Create new reedbed to replace reedbeds likely to be lost due to changes to coastal management and create an additional 600 hectares of new reedbed safe from future threat of sea level rise within Norfolk by 2010.

5.2.2.2 IDB Objectives

Table 10:

IDB Objectives	
2	Implement restoration of reedbeds and WLMP objectives for designated sites within the boards area and identify opportunities elsewhere to restore or enhance reedbed.

5.2.2.3 IDB Actions

Table 11:

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners

2	**2a**	Continue to work in partnership with stakeholders and the Broads Plan Partnership to look for opportunities, to enhance reedbeds by appropriate water level management practice.	Area (ha) of reedbed habitat enhanced	Ongoing	Environment Team	RSPB, NWT, NE, BPP
2	**2b**	Identify potential sites for habitat restoration and expansion within the IDB area during Capital Scheme delivery and consider future management planning on these sites during this process.	Number of sites identified	Ongoing	Environment Team	NRT, NE, EA, Landowners
2	**2c**	Enhance and maintain reedbed fringe habitat on the Boards main drains.	Number of SMO audits achieved	Ongoing	IDB Ops	
2	**2d**	Explore opportunities to create new reedbeds and link with other reedbed projects to create corridors for wildlife.	Area (ha) of new reedbeds created	Ongoing	Environment Team	NRT, NE, EA, NCC, Landowners
2	**2e**	Explore opportunities to work with partners and have involvement in Paludiculture projects.	Area (ha) of reedbed enhanced	Ongoing	Environment Team	NRT, NE, EA, NCC, Landowners
2	**2f**	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance reedbeds through involvement in projects.	Area (ha) of reedbed enhanced	Ongoing	Environment Team	NCC, SCC
2	**2g**	Continue to maintain and enhance reedbed habitat through ensuring the appropriate management to water levels maintained by the board.	Water levels maintained appropriately	Ongoing	Environment Team, Ops	Landowners

5.2.3 Fens

5.2.3.1 National and Local Targets

Table 9:

National Targets	Local Targets
• Identify fen sites in critical need of, and initiate rehabilitation by 2005. All rich fen and other sites with rare communities should be considered. • Ensure appropriate water quality and water quantity for the continued existence of all SSSI fens by 2008.	• Identify Norfolk fen sites in critical need of rehabilitation by 2005, and initiate restoration by 2010. • Ensure appropriate water quality and water quantity for the continued existence of all Norfolk SSSI fens and complete restoration by 2010.

5.2.3.2 IDB Objectives

Table 10:

IDB Objectives	
3	Implement restoration of fens and WLMP objectives for the Fen priority habitat within the Broads IDB area.

5.2.3.3 IDB Actions

Table 11:

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
3	3a	Continue to work in partnership with stakeholders and the Broads Plan Partnership to look for opportunities, to enhance fen habitat by appropriate water level	Area (ha) of fen habitat enhanced	Ongoing	Environment Team	RSPB, NE, NWT, BPP, Landowners

		management practice.				
3	**3b**	Work in partnerships to implement Fen Restoration within the IDB area whilst undertaking Capital projects and whilst undertaking WLMP objectives.	Area (ha) of Fen restoration achieved	Ongoing	Environment Team	NWT, RSPB, NE, EA, Landowners
3	**3c**	Explore opportunities to work with partners to undertake Peatland restoration.	Area (ha) of restoration achieved	Ongoing	Environment Team	BA, NCC, Landowners
3	**3d**	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance fens through involvement in projects.	Area (ha) of Fen enhanced	Ongoing	Environment Team	NCC, SCC
3	**3e**	Continue to maintain fen habitat by ensuring the appropriate management to water levels maintained by the board.	Water levels maintained appropriately	Ongoing	Environment Team, Ops	Landowners

5.2.4 Rivers, Canals and Drains

5.2.4.1 National and Local Targets

Table 9:

National Targets	Local Targets
Unknown	Unknown

5.2.4.2 IDB Objectives

Table 10:

IDB Objectives	
4	Enhance and maintain habitat and species diversity on watercourses maintained by the Board.
5	Enhance and maintain the flora and fauna of the watercourses maintained by the Board.
6	Ensure compliance to Boards Standard Maintenance Operations (SMO) to maintain watercourses.
7	Implement restoration of watercourses and WLMP objectives within the IDD.

5.2.4.3 IDB Actions

Table 11:

Action Plan

Broads Internal Drainage Board – Biodiversity Action Plan

Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
4	**4a**	Work with the planning department to review the boards culverting policy.	Review undertaken	2024	Environment Team	Planning Department
4	**4b**	Continue to maintain and enhance river and drain habitat through ensuring the appropriate management to water levels maintained by the board.	Water levels maintained appropriately	Ongoing	Environment Team, Ops	Landowners
5	**5a**	Record species present in watercourses managed by the board.	Number of records submitted	Ongoing	Environment Team	NBIS
5	**5b**	Report pollution incidents within the IDD, working with the EA.	Partnership maintained	Ongoing	Environment Team, IDB Ops	EA
5	**5c**	Monitor and report Dissolved Oxygen levels around the Broads pumping stations during the summer period.	Report submitted	Annually	Environment Team	EA
5	**5d**	Protect fish populations within the IDD, working with the EA Fisheries team.	Partnership maintained	Ongoing	Environment Team, IDB Ops	EA
5	**5e**	Produce a management plan for Halvergate Marshes describing how to cope with changing salinity levels.	Management plan produced	2024	Environment Team, IDB Ops	
5	**5f**	Monitor and record water volumes and levels pumped within the IDD.	Number of records submitted	Ongoing	Environment Team, IDB Ops	EA
6	**6a**	Regularly update the Boards Standard Maintenance Document.	SMO updated	2023	Environment Team	
6	**6b**	Ensure compliance with the IDB SMO by auditing on identified number of maintenance works jobs annually, to ensure they are being carried out to an agreed standard across the whole board.	Number of maintenance works audited	Annually	Environment Team, IDB Ops	

7	**7a**	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to undertake watercourse restoration through involvement in projects.	Number of Restoration schemes delivered	Ongoing	Environment Team	NCC, SCC

5.2.5 Wet Woodland

5.2.5.1 National and Local Targets

Table 9:

National Targets	Local Targets
• Maintain the existing extent of SAC quality wet woodland (NVC communities W6 and W7). • Achieve favourable condition in 95% (be area) of SSSIs where wet woodland is a notified feature by 2010, and in 50% of total county resource by 2020.	• Maintain the total extent (50,000-70,000ha) and distribution of wet woodland. • Maintain the current area (currently estimated at 24,000-30,000ha) of ancient semi-natural wet woodlands.

5.2.5.2 IDB Objectives

Table 10:

IDB Objectives	
8	Continue to work closely with Norfolk Wildlife Trust, Natural England, the Norfolk Rivers Trust and consultants to ensure Wet Woodland is considered within the consultation process prior to maintenance, capital scheme delivery and river restoration schemes, with a view to maintain, enhance and restore the current extent of wet woodland in the Broads area.

5.2.5.3 IDB Actions

Table 11:

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners

8	**8a**	Consult Norfolk Wildlife Trust prior to work through or near County Wildlife Sites that are outside of the SMO.	NWT Consulted	Ongoing	Environment Team	NWT
8	**8b**	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance wet woodland through involvement in projects.	Area (ha) of Wet Woodland enhanced.	Ongoing	Environment Team	NCC, SCC
8	**8c**	Continue to maintain and wet woodland habitat through ensuring the appropriate management to water levels maintained by the board.	Water levels maintained appropriately	Ongoing	Environment Team, Ops	Landowners

5.3. Species Action Plans

5.3.1 Barn Owl and Kestrel

5.3.1.1 National and Local Targets

Table 15:

National Targets	Local Targets
Unknown	Unknown

5.3.1.2 IDB Objectives

Table 16:

IDB Objectives	
9	Continue to enhance the range and population of Barn Owls and Kestrels by appropriately maintaining or enhancing habitat availability and creating nesting opportunities, within the catchment area.

5.3.1.3 IDB Actions

Table 17:

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
9	**9a**	Continue to monitor nest boxes within the IDB area working in partnership with the Wildlife Conservation Partnership.	Number of boxes monitored	Ongoing	Environment Team	WCP

9	**9b**	Continue to maintain, repair or replace nest boxes appropriately in the IDB area working in partnership with the Wildlife Conservation Partnership.	Number of boxes maintained, repaired or replaced	Ongoing	Environment Team	WCP
9	**9c**	Continue to maintain sward height during IDB bankside maintenance mowing of 150mm.	Area (ha) maintained to sward height	Ongoing	IDB Ops	Staff, Contractors

5.3.2 Breeding Waders

5.3.2.1 National and Local Targets

Table 15:

National	Local
Unknown	Unknown

5.3.2.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
10	Work in partnership to enhance wet grassland for breeding waders within the Boards area.

5.3.2.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
10	**10a**	Look at opportunities to create scrapes and foot drains whilst working with landowners.	Number of scrapes created	Ongoing	Environment Team, IDB Ops	RSPB, BA, NWT
10	**10b**	Look for opportunities when undertaking Capital schemes to improve habitat for wading birds	Area (m) of habitat improved	Ongoing	Environment Team, IDB Ops	RSPB, NE, NWT

10	**10c**	Continue to maintain and enhance breeding wader habitats through ensuring the appropriate management to water levels maintained by the board.	Water levels maintained appropriately	Ongoing	Environment Team, Ops	Landowners

5.3.3 European Eel

5.3.3.1 National and Local Targets

Table 15:

National	Local
UK BAP targets = Maintain the current range & achieve an increase in range (both across 10km2 areas)	UK BAP targets = Maintain the current range & achieve an increase in range (both across 10km2 areas)

5.3.3.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
11	Contribute toward the Eel Regulations legislative requirements (2009) and the Eel Management Plan.
12	Undertake eDNA water sampling for Eel.

5.3.3.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
11	11a	Work in Partnership with the Environment Agency to assess the current status of Eel populations at pumping stations within the Boards Area.	Number of pumping stations with Eel populations reviewed	Ongoing	Environment Team	EA, ZSL

11	**11b**	Work in Partnership with the Environment Agency to identify barriers to migration in the Boards area and assess options for overcoming these.	Number of barriers to migration identified	Ongoing	Environment Team	EA, ZSL
12	**12a**	Undertake eDNA water sampling at pumping stations for fish, including Eel (As part of pumping station replacement)	Number of samples collected	Ongoing	Environment Team	EA
12	**12b**	Report eDNA results to the NBIS	Results reported	Ongoing	Environment Team	NBIS

5.3.4 Grass Snake

5.3.4.1 National and Local Targets

Table 15:

National	Local
Unknown	Unknown

5.3.4.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
13	Maintain and where possible increase the range of Grass Snake within the Board's area.

5.3.4.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
13	**13a**	Determine the extent and distribution of the existing populations at the Board's pumping stations and on key drains using ESRI maps and working in partnership with ARG UK.	Maps produced with site locations	Ongoing	Environment team	NBIS, ARG UK
13	**13b**	Using the distribution data, develop Hibernacula and egg laying sites at pumping	Number of produced egg laying sites	Ongoing	Environment team	

		stations or key locations where appropriate.				

5.3.5 Water Vole

5.3.5.1 National and Local Targets

Table 15:

National	Local
UK BAP targets = Maintain the current range & achieve an increase in range (both across 10km2 areas).	Maintain and increase current range.

5.3.5.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
14	Control mink within the IDB catchment.
15	Better understand population and extent of water voles within the Boards area.
16	Ensure the appropriate sensitive management of watercourses which will facilitate the maintenance and enhancement of the current distribution and abundance of the Water Vole in the IDB District.
17	Maintain and enhance the current distribution and abundance of the water vole in the IDB District.

5.3.5.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners

14	**14a**	Continue to contribute funding to the Water Life Recovery Trust.	Funding contributed	Annually	Environment team	Water Life Recovery Trust
14	**14b**	Continue to work with the Water Life Recovery Trust on mink eradication.	Number of steering group mink meetings attended each year.	Annually	Environment team	Water Life Recovery Trust
15	**15a**	Undertake yearly recording by operational staff and report to local biodiversity record centres.	Number and location of records collected and submitted to local biodiversity records office.	Annually	IDB Ops	NBIS
16	**16a**	Ensure compliance with the IDB SMO by auditing 4 jobs per year jobs, to ensure they are being carried out sensitively and to an agreed standard across the Board.	Number of maintenance works audited.	Annually	Environment team, IDB Ops	
17	**17a**	Take opportunities to enhance water vole habitat during Capital or river/wetland restoration schemes.	Area (ha) of habitat enhanced.	Ongoing	Environment team	NE, EA, NWT, RSPB, Landowners

5.3.6 Bats (All Species)

5.3.6.1 National and Local Targets

Table 15:

National	Local
Unknown	Unknown

5.3.6.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
18	Understand the status, distribution and ecology of bats in the IDB district.
19	Maintain and enhance the current distribution and abundance of bats within the Board's area.

5.3.6.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
18	18a	Survey and monitor bat presence around IDD as part of the BTO Norfolk Bat Survey.	Number of surveys undertaken	Ongoing	Environment Team	BTO

18	**18b**	Ensure survey training is delivered to all environment officers.	Number of officers trained	Ongoing	Environment Team	
19	**19a**	Install bat boxes and/or bat bricks for roosting and hibernation on suitable IDB structures.	Number of bat boxes/bricks installed	Ongoing	Environment Team, IDB Ops	
19	**19b**	Continue to work with consultants for capital schemes involving bat mitigation and habitat enhancements.	Number of capital schemes delivered including bat mitigation and habitat enhancements	Ongoing	Environment Team	Consultants, Landowners

5.3.7 Grasswrack Pondweed

5.3.7.1 National and Local Targets

Table 15:

National	Local
Unknown	Unknown

5.3.7.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
20	Maintain and where possible, increase the range of Grasswrack Pondweed within the Broads IDD.

5.3.7.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
20	**20a**	Continue annual monitoring of the species in South Walsham and Upton Marshes.	Surveys undertaken	Annually	Environment Team	NWT, RSPB, Consultants, Landowners

20	**20b**	Continue to manage the timings and practices for the species in an appropriate manner for the species.	Appropriate management undertaken	Annually	Environment Team	NWT, RSPB, Landowners, Contractors
20	**20c**	Continue to undertake annual turion returns activity (return of turions that are removed from the drain during weed removal) directly after drain maintenance.	Returns activity undertaken	Annually	Environment Team, IDB Ops	
20	**20d**	Work in partnership with landowners to carry out clearance works of the soke dyke and new dyke system, whilst standard maintenance is taking place in the area, to maintain the current habitat.	Partnership work undertaken	Annually	Environment Team	NWT, RSPB, Landowners

5.3.8 Floating Water Plantain

5.3.8.1 National and Local Targets

Table 15:

National	Local
•Maintain the current range of this species in the UK. •By 2010, increase connectivity of sites within two vulnerable lowland populations (Pembrokeshire and Severn Valley), through landscape scale enhancements and local improvements to habitat.	•Maintain the population at Potter Heigham. •Introduce *L natans* to at least two new sites in the Norfolk Broads by 2012 (if preparatory research shows this to be feasible and desirable).

5.3.8.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
21	Monitor and maintain the Broadlands population of Floating Water Plantain and explore opportunities to undertake translocation to other sites in the Broads IDD.

5.3.8.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
21	**21a**	Manage the Luronium dyke system, using sensitive practice, under license and supervision of NE whilst undertaking	Appropriate management undertaken	Annually	Environment Team	NE, NWT, RSPB, Landowners

		maintenance operations.				
21	**21b**	Undertake surveys to monitor the plant population at Potter Heigham.	Number of surveys undertaken	Ongoing	Environment Team	NWT, RSPB, Landowners, Consultants, NE
21	**21c**	Work in partnership to find appropriate translocation sites for the plant within the IDD.	Appropriate translocation sites identified	Ongoing	Environment Team	NWT, RSPB, NE, Landowners

5.3.9 Water Plant Assemblages

5.3.9.1 National and Local Targets

Table 15:

National	Local
Unknown	Unknown

5.3.9.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
22	Maintain and where possible, enhance water quality and habitat for current assemblages of water plants within the IDD.

5.3.9.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
22	**22a**	Identify opportunities through water management schemes (eg. changes in flow, water control, pump replacement, main drain realignment, water storage, habitat creation schemes) to enhance water quality and other ditch habitat features; and assess risk of	Number of Opportunities Identified	Annually	Environment Team	Landowners

		negative impacts of such schemes.				

5.3.10 Non Native Invasive Species

5.3.10.1 National and Local Targets

Table 15:

National	Local
Unknown	Unknown

5.3.10.2 IDB Objectives

Table 16: IDB Objectives

IDB Objectives	
23	Promote the biosecurity, control and eradication of non-native invasive species within the Board's area.
24	Raise awareness of the presence and undertake control or eradication of mink in the catchment.

5.3.10.3 IDB Actions

Table 17: Species action plan

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
23	**23a**	Establish a partnership with the NBIS to receive up to date records of Invasives within the local area.	Partnerships established	Ongoing	Environmental Team	NBIS
23	**23b**	Continue to contribute to and work in partnership with the Norfolk Non-Native Species	Partnerships maintained	Ongoing	Environment Team	NNNSI

		Initiative (E.g. Floating pennywort).				
23	**23c**	Maintain records for all species of concern using the 'iRecord' app.	Number of reviews undertaken	Ongoing	Environment Team	NNNSI, Staff, Contactors
23	**23d**	Train staff regularly in key non-native species identification.	Number of staff trained	Ongoing	Environment Team	NNNSI, Staff, Contactors
23	**23e**	Ensure availability and regular review of identification guides developed for key non-native species to be used by officers, staff and contractors on site.	Number of reviews undertaken	Ongoing	Environment Team	NNNSI, Staff, Contactors
23	**23f**	Regularly review and ensure robust biosecurity measures are being maintained across the Board.	Number of reviews undertaken	Ongoing	Environment Team	Staff, Contractors
24	**24a**	To continue to work in partnership with Mink control/eradication groups	Number of meetings per year	Ongoing	Environment team	WLRT
24	**24b**	Report number of animals caught to the WLRT	Number of catches per year, Catch per unit effort	Ongoing	Environment team	WLRT

6. Procedural Action Plan

6.1. Introduction

A number of procedural targets and actions have been established to better integrate biodiversity considerations into IDB practices and procedures.

6.2. Objectives and Targets

Table 18:

IDB Objectives	
1	Ensure compliance to standard for biodiversity and protected species surveys
2	Ensure compliance to Boards Standard Maintenance Operations
3	Land Drainage consent and Bylaws
4	Attend Local Biodiversity Forums and Meetings
5	Raising awareness
6	Recording
7	Communication
8	Monitoring

6.3. IDB Actions

Table 19:

Action Plan

Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	**1a**	All works assessed using agreed standards of information to ensure that appropriate mitigation is delivered for capital / maintenance works and projects to enhance biodiversity	License returns to NE / Number of audits undertaken	Ongoing	Ecologist	NE
1	**1b**	Environmental staff to undertake regular training to ensure competence (including survey, biosecurity and health and safety training)	Number of staff trained	Ongoing	Ecologist	NE, NWT
2	**2a**	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 ISO 14001	Number of audits undertaken / QMS audit	Annually	Ecologist	WT
2	**2b**	Regular review of SMO to ensure compliance with updated guidelines and regulations	5 year review undertaken	Ongoing		LA's
3	**3a**	Through the application of Land Drainage Consents and Bylaws, seek to ensure that natural features of conservation interest and habitat importance are enhanced	Review Planning and Bylaw strategy	2024		
4	**4a**	Communication and network opportunities with other organisations to facilitate actions for BAP Species and Habitats	Meetings attended	Ongoing		
4	**4b**	PR and lifting profile of Board	Newspaper/magazine articles	Ongoing		
5	**5a**	Biodiversity training days organised for staff and offered to board members	Number of training days organised	Ongoing		
6	**6a**	Develop and populate a recording system for IDB priority species and habitats within the Board area, in conjunction with the Engineering team and watercourse surveys	iRecord reports	Ongoing		NBIS
7	**7a**	A new Environment and Biodiversity section on the website	Environment section produced	Ongoing		
7	**7b**	Share successes with media and promote public awareness	Social media reaches, website blogs	Ongoing	ICT team, Environment Team, Ops Team	
8	**8a**	Continue to develop the WMA's species record base and	Partnership established	Ongoing		NBIS

		continue to work internally and in partnership with other organisations to ensure that we have up to date information of species to help inform future works	with NBIS			

7. Implementation

The actions within the BAP will be executed via the following means:

- 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 through quality assessment 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 Norfolk Biological Record Centre.
- Carbon Net Zero is a legislative commitment set out by the UK government to be achieved by 2050. The Broads IDB will be instigating a carbon baselining exercise with a view to setting a target for achieving Carbon Net Zero on or before this date for all its operational and day to day activities.

8. Monitoring

Appropriate indicators have been set for each of the IDB's biodiversity actions. Indicators have been chosen which provide the IDB with ways of measuring both the current status of biodiversity and also ways of measuring achievements in delivering biodiversity objectives and targets. The individual action plans set out the indicators and measurables which will be used to assess progress and execution against the plan. The IDB will routinely monitor biodiversity actions using the indicators and measurables and will review actions and indicators at least annually.

The overall plan will be updated at least every 5 years but is a dynamic document so may change more frequently for example in the light of monitoring outcomes. The board can agree changes more frequently when appropriate.

9. Reporting

The Board is responsible for ensuring that progress against the Plans' targets are routinely reported, at least annually, at Board meetings to allow the Board to discuss and review BAP activity and to modify the BAP and actions to meet the objectives where necessary.

Annual summary progress reports will detail which actions have been progressed according to the plan, any new opportunities identified, risks and issues affecting the objectives or actions, and the contribution actions have made towards achieving the objectives. Recommendations will be made in the light of the monitoring outcomes.

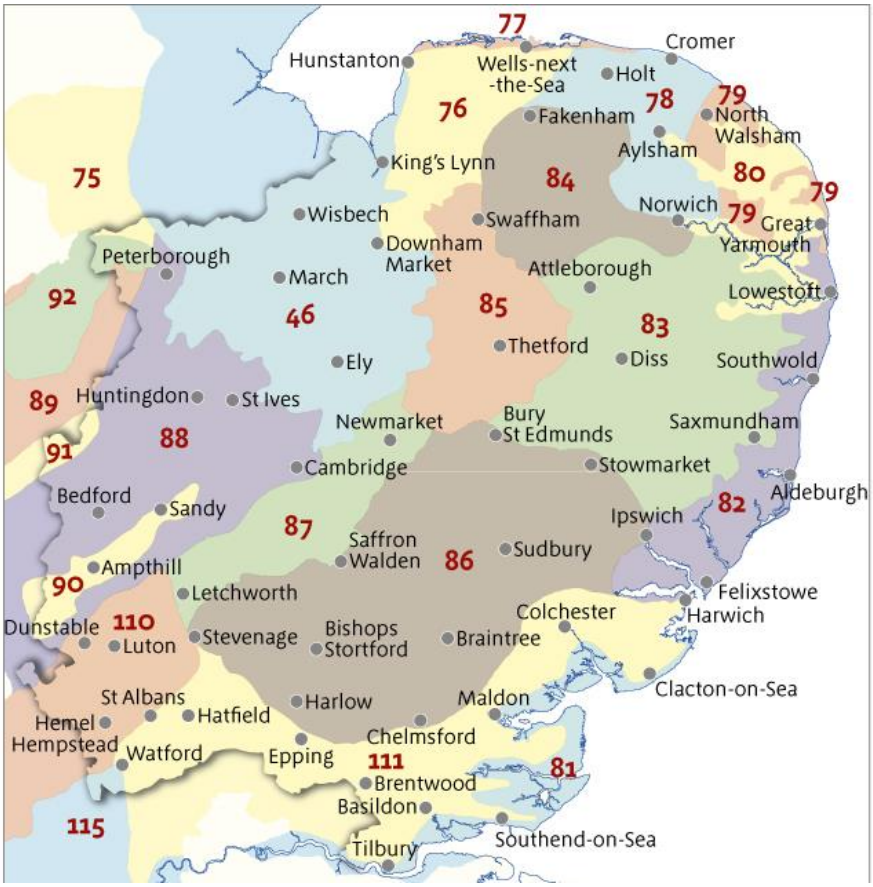
Making this information available to a wider audience is important in increasing the understanding of the importance of the Boards' actions regarding biodiversity and inspiring people about biodiversity. As such, the IDB will make the summary reports available externally in the following ways:

- In the public domain via the IDB's website;
- Provided to conservation partners to assist with further local biodiversity conservation planning;
- Provided to local authorities in order to contribute towards their legislative biodiversity reporting requirements including the NERC 2006 Act, Habitats Directive, Environment Act and the Local Nature Recovery Strategies;
- The Local Biological Records Centre.
- To the Board through a comprehensive review of the plan that will take place after five years.

10. Appendices

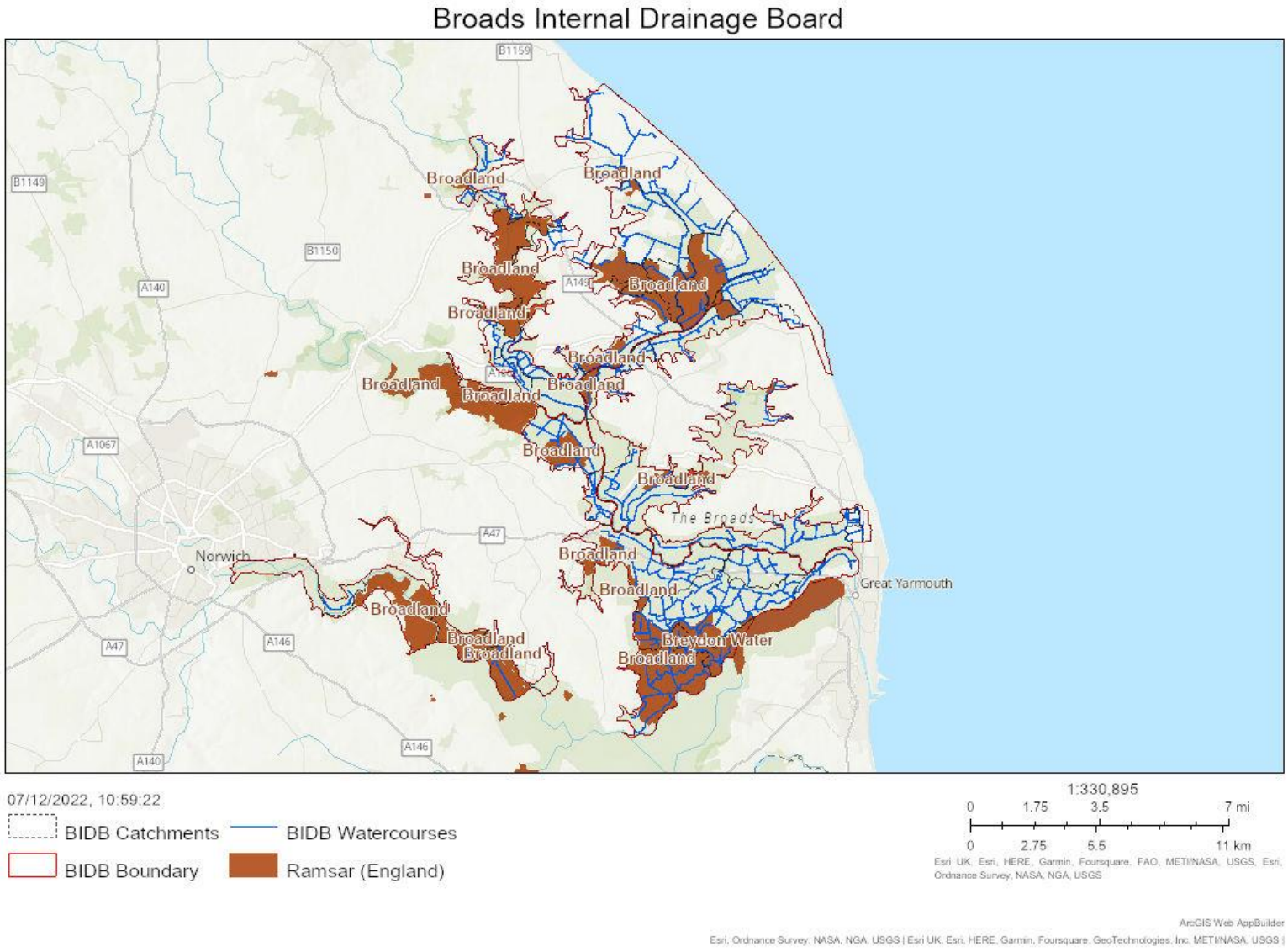
10.1. Appendix 1: Landscape Character

A map showing the limits of the National Character Areas. For the BLIDB see 80 (The Broads)

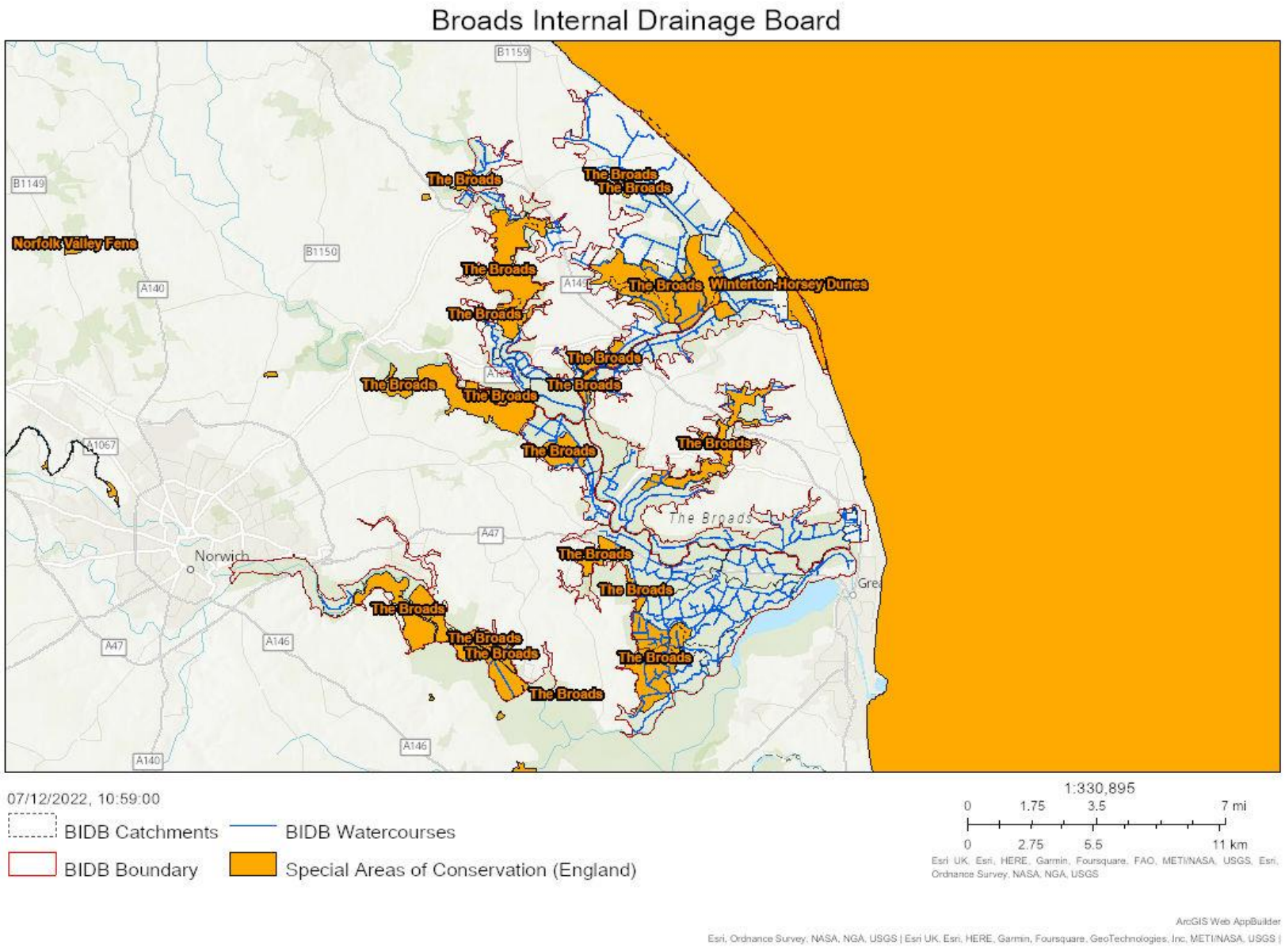


10.2. Appendix 2 : Internationally Designated Sites

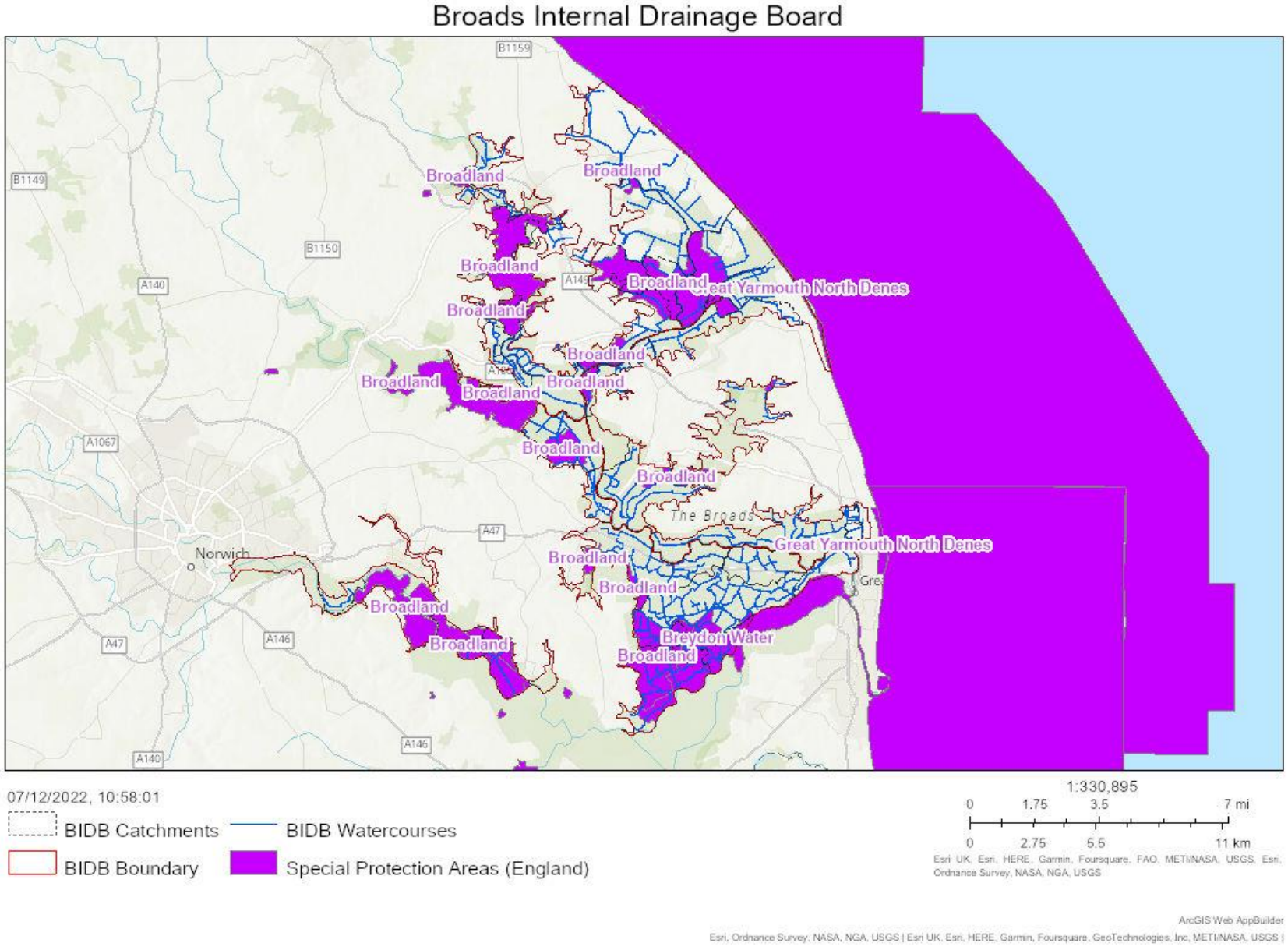
A map displaying Ramsar (England) sites within the BIDB Boundary. (*OS Licence : 100047016*)



A map displaying Special Areas of Conservation (England) within the BIDB Boundary. (*OS Licence : 100047016*)

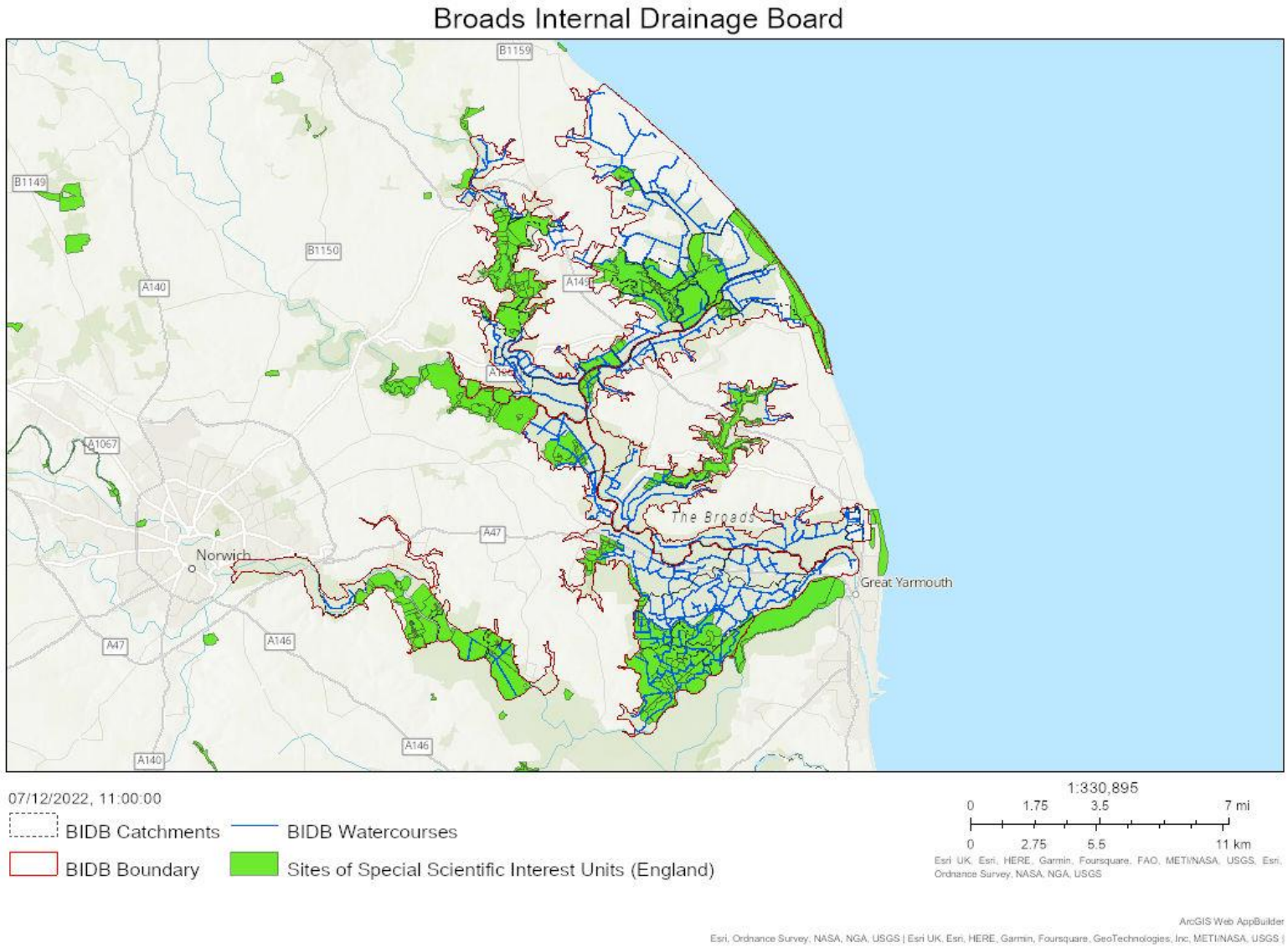


A map displaying Special Protection Areas (England) within the BIDB Boundary. (*OS Licence : 100047016*)



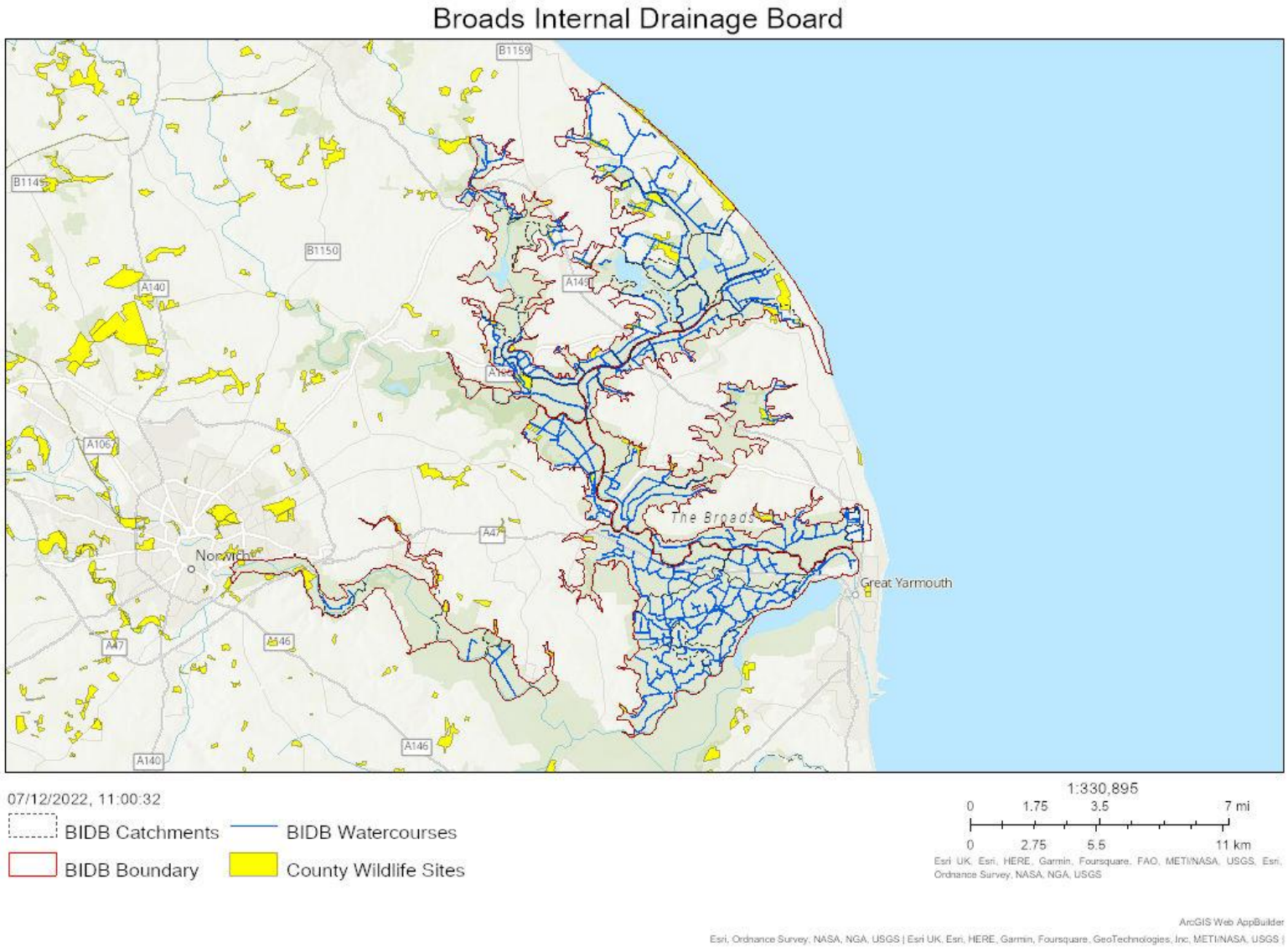
10.3. Appendix 3 : Nationally Designated Sites

A map displaying Sites of Special Scientific Interest (England) within the BIDB Boundary. (*OS Licence : 100047016*)



10.4. Appendix 4 : Non-Statutory Designated Sites

A map displaying the County Wildlife Sites within the BIDB District (*OS Licence : 100047016*)



10.5. Appendix 5 : Species Audit Summary

COMMON NAME	SCIENTIFIC NAME	BAP PRIORITY SPECIES	LOCAL BAP SPECIES	SECTION 41	NON-BAP SPECIES IMPORTANT TO IDB
AMPHIBIANS					
Common Frog	*Rana helveticus*				Yes
Common Toad	*Bufo bufo*	Yes		Yes	Yes
Great Crested Newt	*Triturus cristatus*	Yes	Yes	Yes	
Natterjack Toad	*Bufo calamita*	Yes		Yes	
Smooth Newt	*Triturus vulgaris*				Yes
BIRDS					
Barn Owl	*Tyto alba*		Yes		
Bewick's Swan	*Cygnus columbianus*	Yes		Yes	
Bittern	*Botaurinae*	Yes	Yes		
Black Tailed Godwit	*Limosa limosa*	Yes		Yes	
Bullfinch	*Pyrrhula pyrrhula*	Yes		Yes	
Cuckoo	*Cuculidae*	Yes			
Dark Bellied Brent Goose	*Branta bernicla*	Yes			
Dunnock	*Prunella modularis*			Yes	
Eurasian Curlew	*Numenius arquata*	Yes			
European Turtle Dove	*Streptopelia turtur*	Yes	Yes	Yes	
Grasshopper Warbler	*Locustella naevia*	Yes		Yes	
Greenland White-fronted Goose	*Anser albifrons*	Yes			
Grey Partridge	*Perdix perdix*	Yes	Yes	Yes	
Hen Harrier	*Circus cyaneus*			Yes	
House Martin	*Delichon urbicum*				
House Sparrow	*Passer domesticus*	Yes		Yes	
Kestrel	*Falco tinnunculus*				Yes
Kingfisher	*Alcedinidae*				Yes
Lapwing	*Vanellinae*	Yes		Yes	
Lesser Redpoll	*Acanthis cabaret*			Yes	
Lesser Spotted Woodpecker	*Dryobates minor*			Yes	
Linnet	*Linaria cannabina*			Yes	
Long Tailed Tit	*Aegithalos caudatus*				
Marsh Harrier	*Circus aeruginosus*				Yes
Marsh Tit	*Poecile palustris*	Yes		Yes	
Marsh Warbler	*Acrocephalus palustris*	Yes		Yes	
Nightjar	*Caprimulgas europaeus*	Yes	Yes	Yes	
Redshank	*Tringa totanus*				Yes
Reed Bunting	*Emberiza schoeniclus*	Yes	Yes	Yes	
Robin	*Erithacus rubecula*				
Rook	*Corvus frugilegus*				
Sand Martin	*Riparia riparia*				Yes
Savi's Warbler	*Locustella luscinioides*	Yes		Yes	
Skylark	*Alauda*		Yes	Yes	
Song Thrush	*Turdus philomelos*	Yes		Yes	
Starling	*Sturnidae*			Yes	
Stone Curlew	*Burhinidae*	Yes	Yes	Yes	
Swallow	*Hirundinidae*				
Swift	*Apodidae*		Yes		
Tree Pipit	*Anthus trivialis*			Yes	
Tree Sparrow	*Passer montanus*	Yes	Yes	Yes	
Tundra Swan	*Cygnus columbianus*			Yes	
Twite	*Linaria flavirostris*			Yes	

White-fronted Goose	*Anser albifrons*			Yes	
Yellow Hammer Tree Sparrow	*Emberiza citrinella*	Yes		Yes	
Yellow Wagtail	*Motacilla flava*	Yes		Yes	
BRYOZOANS					
Crystal Moss-animal	*Lophopus crystallinus*	Yes			
BUTTERFLIES AND MOTHS					
Grayling	*Hipparchia semele*	Yes		Yes	
Small Heath	*Coenonympha pamphilus*	Yes		Yes	
Wall	*Lasiommata megera*	Yes		Yes	
White Admiral	*Limenitis camilla*	Yes		Yes	
White-letter Hairstreak	*Satyrium w-album*	Yes		Yes	
CLUBMOSS					
Marsh Clubmoss	*Lycopodiella inundata*	Yes		Yes	
DRAGONFLIES AND DAMSELFLIES					
Scarce Chaser	*Libellula fulva*				Yes
Norfolk Hawker	*Aeshna isoceles*	Yes	Yes	Yes	
FISH					
Eel	*Anguilla Anguilla*	Yes			Yes
MAMMALS					
Barbastelle Bat	*Barbastella barbastellus*	Yes	Yes	Yes	
Brown Hare	*Lepus europeus*	Yes	Yes		
Brown Long Eared Bat	*Plecotis auritus*	Yes	Yes	Yes	
Daubentons Bat	*Myotis daubentonii*	Yes	Yes		
European Badger	*Meles meles*				Yes
European Hedgehog	*Erinaceus europeus*	Yes		Yes	
European Polecat	*Mustela putorius*	Yes		Yes	
Harvest Mouse	*Micromys minutus*	Yes		Yes	
Lesser Noctule	*Nyctalus leisleri*				
Nathusius's pipistrelle Bat	*Pipistrellus nathusii*				
Natterer's Bat	*Myotis nattereri*				
Noctule Bat	*Nyctalus noctula*	Yes	Yes	Yes	
Otter	*Lutra lutra*	Yes	Yes	Yes	
Serotine Bat	*Eptesicus serotiaus*				
Soprano Pipistrelle Bat	*Pipistrellus pygmaeus*	Yes	Yes	Yes	
Water Vole	*Arvicola terrestris*	Yes		Yes	
MOLLUSC					
Desmoulin's Whorl Snail	*Vertigo moulinsiana*	Yes	Yes	Yes	
Depressed River Mussel	*Pseudanodonta camplanata*	Yes	Yes	Yes	
Large Mouthed Valve Snail	*Valvata macrostoma*	Yes		Yes	
Shining Ramshorn Snail	*Segmentina nitida*		Yes	Yes	
REPTILES					
Adder	*Vipera berus*	Yes	No	Yes	
Common Lizard	*Lacerta vivipara*	Yes	No	Yes	
Grass Snake	*Natrix natrix*	Yes	No	Yes	
Slow Worm	*Anguis fragilis*	Yes		Yes	
VASCULAR PLANTS					
Common Mouse-Ear	*Cerastium fontanum*	Yes			
Common Scurvy Grass	*Cochlearia officinalis*	Yes			
Divided Sedge	*Carex divisa*	Yes		Yes	
Early Marsh Orchid	*Dactylorhiza incarnata*			Yes	
Fen Orchid	*Liparis loeselii*	Yes	Yes	Yes	
Floating Water Plantain	*Luronium natans*	Yes	Yes	Yes	

Grasswrack Pondweed	*Potamogeton compressus*	Yes		Yes	Yes
Greater Water Parsnip	*Sium latifolium*	Yes	Yes		
Holly Leaved Naiad	*Najas marina*	Yes	Yes	Yes	
Marsh Stitchwort	*Stellaria palustris*	Yes		Yes	
Sharp-leaved Pondweed	*Potamogeton acutifolius*	Yes		Yes	
Tassel Stonewort	*Tolypella intricata*				
True Fox Sedge	*Carex vulpina*	Yes		Yes	
Tubular Water-Dropwort	*Oenanthe fistulosa*	Yes		Yes	

10.6. Appendix 6 : Water Level Management Plans

Site Name & Designation	Reason for WLMP (state main species or habitat)	WLMP lead and other key [partners	Favorable/ unfavorable condition (related to water level management)	WLMP Last Updated
Brograve WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitatas include grazing marsh, woodland, fen and open water.	BIDB, NCC, BA, NNDC	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	2001
Brograve WLMP - Calthorpe Broad SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	The principle interest of this site is the broad itself, which is important for a range of fauna and flora. This includes alder willow-birch carr, open fen and grazing marsh and a range of uncommon marginals and aquatic plants.	BIDB, NCC, BA, NNDC	97.68% Favourable condition 2.32% Unfavourable – Recovering condition	2001
Catfield WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitatas include grazing marsh, woodland, fen and open water.	BIDB, NCC, NNDC	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	2001
Chaplefield WLMP - Ant Broads and Marshes SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	Priority habitats include Calcareous fen, eutrophic lakes and reedbeds. Important for Desmoulins Whorl Snail, Fen orchid, Otter, Bittern, Marsh Harrier, Wintering Hen Harrier, Gadwall and Shoveler.	BIDB, NCC, BA, NNDC	49.9% Favourable condition 42.81% Unfavourable – Recovering condition 7.29% Unfavourable – Declining condition	2001

Halvergate WLMP - Damgate Marshes, Acle SSSI - component site of Broadland Ramsar and The Broads, SAC	Consisting of grass marshes south of the River Bure, traditionally managed as grazing marsh. Important for Broad Leaved Pondweed, Water Violet, and Whorled Water-Milfoil.	BIDB, BA	74.73% Favourable condition 25.27% Unfavourable – Recovering condition	2000
Halvergate WLMP - Decoy Carr SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	A large area of wet carr woodland and open fen. A network of dykes and ditches intercept the site, containing various macrophytes and rare mosses.	BIDB, BA	70.21% Favourable condition 29.79% Unfavourable – Recovering condition	2000
Halvergate WLMP - Halvergate Marshes SSSI- component site of Broadland Ramsar and The Broads, SAC	An extensive area of grazing marshes with intersecting drainage ditches. It supports a wide range of aquatic plants and macrophytes and is internationally important for wintering and breeding bird populations.	BIDB, BA	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	2000
Halvergate WLMP - Breydon Water SSSI - component site of Breydon Water SPA, Breydon Water Ramsar	Grazing marshes, Arable, woodland. Important for a wide range of aquatic vegetation communities, the great silver water beetle, breeding wader species.	BIDB, BA	Full area in favourable condition	2000
Heigham Holmes WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitats include grazing marsh, woodland, fen and open water.	BIDB, NE, BA, EH, ADAS	72.75% Favourable condition 9.02% Unfavourable – Recovering condition 18.23% Unfavourable – No Change condition	1994
Hemsby and Muckfleet WLMP - Trinity Broads SSSI- component site of	Comprised of five shallow lakes, fringed with reed swamp, wet woodland and fen. The site supports a rich assemblage of aquatic plants,	BIDB, NE, BA, FRCA, NCC, NLAG, NWT	45.48% Favourable condition 41.98% Unfavourable – Recovering condition 12.54% Unfavourable – No Change condition	2000

Broadland SPA, Ramsar and The Broads, SAC	wet carr woodland, swamp communities, breeding and wintering birds and invertebrates.			
Hemsby and Muckfleet WLMP - Burgh Common and Muckfleet Marshes SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	The area is one of the most important unreclaimed wetlands in Broadland. It consists of fen meadows, tall fen vegetation and drainage dykes, and is important for numerous rare plants and invertebrate species.	BIDB, NE, BA, FRCA, NCC, NLAG, NWT	27% Favourable condition 69.57% Unfavourable – Recovering condition 3.43% Unfavourable – No Change condition	2000
Hemsby and Muckfleet WLMP - Hall Farm Fen, Hemsby SSSI- component site of Broadland, SPA, Ramsar and The Broads, SAC	Consists of an area of unimproved fen grassland with a dyke system. The site supports both acidic and calcareous species, including some hybrid species of orchids.	BIDB, NE, BA, FRCA, NCC, NLAG, NWT	Full area in favourable condition	2000
Hickling WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitats include grazing marsh, woodland, fen and open water.	BIDB, NCC, BA, NNDC	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	2001
Hickling WLMP - Priory Meadows SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	Extensive area of permanent grassland on damp, acidic peats. It supports a community of unusual acidic plants and a distinctive assemblage of aquatic plants.	BIDB, NCC, BA, NNDC	29.79% Favourable condition 70.21% Unfavourable – Recovering condition	2001
Horning WLMP - Alderfen Broad SSSI – component site of Broadland, SPA, Ramsar and The Broads, SAC	The site consists of a classic assemblage of plant communities from open water, marginal reed swamp, to carr woodland. Important site for breeding birds including Great Crested Grebe, Pochard, Water Rail,	BIDB, BA, NE, EA, FRCA	8.65% Favourable condition 91.35% Unfavourable – Recovering condition	1998

	Grasshopper Warbler and Reed Warbler.			
Horning WLMP – Ant Broads and Marshes SSSI – component site of Broadland, SPA, Ramsar and The Broads, SAC	Priority habitats include Calcareous fen, eutrophic lakes and reedbeds. Important for Desmoulins Whorl Snail, Fen orchid, Otter, Bittern, Marsh Harrier, Wintering Hen Harrier, Gadwall and Shoveler.	BIDB, BA, NE, EA, FRCA	49.9% Favourable condition 42.81% Unfavourable – Recovering condition 7.29% Unfavourable – Declining condition	1998
Horsefen WLMP - Ludham – Potter Heigham Marsh SSSI- component site of Broadland Ramsar and The Broads, SAC	Nationally important wetland site and one of the richest areas of traditionally grazed marsh and dykes in Broadland. Supports a wide range of water plants, aquatic invertebrates, dragonflies and breeding birds.	BIDB, BA, EN,FRCA	Full area in favourable condition	1999
Horsey WLMP - Winterton to Horsey Dunes SSSI- component site of Winterton to Horsey Dunes SAC	Consists of an extensive dune system, supports areas of dune heath, ‘slacks’ and dune grassland verging into grazing marsh and birch woodland, as well as a range of over-wintering and breeding birds, amphibians and butterflies.	BIDB, BA, NE, FRCA, The Horsey Estate Trust	67.92% Favourable condition 9.88% Unfavourable – Recovering condition 22.2% Unfavourable – No Change condition	2000
Horsey WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitatas include grazing marsh, woodland, fen and open water.	BIDB, BA, NE, FRCA, The Horsey Estate Trust	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	2000
Lower Yare First WLMP - Yare Broads and Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC and Mid Yare NNR	Habitat includes grazing marsh and a dyke system which supports rich flora and fauna. This includes the nationally rare Norfolk Hawker Dragonfly.	BIDB, RSPB, NE, BA, MAFF, EA	39.22% Favourable condition 11.3% Unfavourable – Recovering condition 47.27% Unfavourable – No Change condition 2.2% Unfavourable – Declining condition	2000

Lower Yare Fourth WLMP - Cantley Marshes SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	Comprised of grazing marsh, fen meadow, a small reedbed and large areas of wet woodland. The grazing marsh ditches contain a rich aquatic and bankside flora and nationally rare invertebrate species.	BIDB, RSPB		2002
Lower Yare Fourth WLMP - Yare Broads and Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC and Mid Yare NNR	Habitat includes grazing marsh and a dyke system which supports rich flora and fauna. This includes the nationally rare Norfolk Hawker Dragonfly.	BIDB, RSPB	39.22% Favourable condition 11.3% Unfavourable – Recovering condition 47.27% Unfavourable – No Change condition 2.2% Unfavourable – Declining condition	2002
Ludham Bridge East WLMP - Ant Broads and Marshes SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	Priority habitats include Calcareous fen, eutrophic lakes and reedbeds. Important for Desmoulins Whorl Snail, Fen orchid, Otter, Bittern, Marsh Harrier, Wintering Hen Harrier, Gadwall and Shoveler.	BIDB, BA, NE, FRCA	49.9% Favourable condition 42.81% Unfavourable – Recovering condition 7.29% Unfavourable – Declining condition	1999
Martham WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitatas include grazing marsh, woodland, fen and open water.	BIDB, BA, NE, DEFRA	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	2002
Potter Heigham WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitats include grazing marsh, woodland, fen and open water.	BIDB, BA, NE, FRCA	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	1999

Potter Heigham WLMP - Ludham – Potter Heigham Marsh SSSI-component site of Broadland Ramsar and The Broads, SAC	Nationally important wetland site and one of the richest areas of traditionally grazed marsh and dykes in Broadland. Supports a wide range of water plants, aquatic invertebrates, dragonflies and breeding birds.	BIDB, BA, NE, FRCA	Full area in favourable condition	1999
Repps WLMP - Shallam Dyke Marshes SSSI-component site of Broadland SPA, Ramsar and The Broads, SAC	Consists of an area of grazing marsh situated on the alluvial clays in the lower reaches of the River Thurne. Provides ideal habitat to nesting wetland birds and important area of grazing marsh for wading birds. A variety of aquatic plants are present in the dyke system.	BIDB, BA, NE, DEFRA	4.44% Favourable condition 95.56% Unfavourable – No Change condition	2002
Somerton WLMP - Winterton to Horsey Dunes SSSI-component site of Winterton to Horsey Dunes SAC	Consists of an extensive dune system, supports areas of dune heath, 'slacks' and dune grassland verging into grazing marsh and birch woodland, as well as a range of over-wintering and breeding birds, amphibians and butterflies.	BIDB, NCC, BA, GYBC, NE	67.92% Favourable condition 9.88% Unfavourable – Recovering condition 22.2% Unfavourable – No Change condition	2001
Somerton WLMP - Upper Thurne and Broads Marshes SSSI- component site of Broadland SPA, Ramsar and The Broads, SAC	A range of wetland plant communities, including rare macrophytes, and associated animals species. Habitatas include grazing marsh, woodland, fen and open water.	BIDB, NCC, BA, GYBC, NE	63.97% Favourable condition 16.65% Unfavourable – Recovering condition 4.82% Unfavourable – No Change condition 14.57% Unfavourable – Declining condition	2001
Sutton WLMP - Ant Broads and Marshes SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	Priority habitats include Calcareous fen, eutrophic lakes and reedbeds. Important for Desmoulins Whorl Snail, Fen orchid, Otter, Bittern, Marsh Harrier, Wintering Hen Harrier, Gadwall and Shoveler.	BIDB, NE, BA, DEFRA	49.9% Favourable condition 42.81% Unfavourable – Recovering condition 7.29% Unfavourable – Declining condition	2002

Thurne WLMP - Shallam Dyke Marshes SSSI-component site of Broadland SPA, Ramsar and The Broads, SAC	Consists of an area of grazing marsh situated on the alluvial clays in the lower reaches of the River Thurne. Provides ideal habitat to nesting wetland birds and important area of grazing marsh for wading birds. A variety of aquatic plants are present in the dyke system.	BIDB, BA, NE, FRCA	4.44% Favourable condition 95.56% Unfavourable – No Change condition	2000
Upton WLMP - Upton Broad and Marshes SSSI-component site of Broadland SPA, Ramsar and The Broads, SAC	The site lies in the middle of the Bure Valley and is an example of unreclaimed wetland and grazing marsh. The site is particularly important for the nationally rare aquatic plant species Grass Wrack Pondweed.	BIDB, NCC, BA, BDC, NE	7.43% Favourable condition 91.84% Unfavourable – Recovering condition 0.72% Unfavourable – No Change condition	2002
Wayford Bridge and East Ruston WLMP - Broad Fen Dilham SSSI - component site of Broadland, SPA, Ramsar and The Broads, SAC	Broad Fen occupies the basin of the former Dilham Broad and supports a mixture of fen, fen meadow, open water and carr woodland communities. Important for breeding birds including Sedge, Reed and Grasshopper Warblers, and Bitterns.	BIDB, NCC, BA, NNDC, NE	Full area in Unfavourable – Recovering condition	2001
Wayford Bridge and East Ruston WLMP - East Ruston Common SSSI	Consists of a large area of unimproved heathland and fen situated in the valley of a tributary of the River Ant. Two rare species of spider have been recorded on the site.	BIDB, NCC, BA, NNDC, NE	38.11% Favourable condition 61.89% Unfavourable – Recovering condition	2001

10.7. Appendix 7 : Biodiversity Action Plan Objectives

Broads IDB Biodiversity Action Plan Objectives	
1	Continue to maintain or enhance the existing extent and quality of Coastal and Floodplain Grazing Marsh within the boards area via Capital Schemes and Watercourse enhancements.
2	Implement restoration of reedbeds and WLMP objectives for designated sites within the boards area and identify opportunities elsewhere to restore or enhance reedbed.
3	Implement restoration of fens and WLMP objectives for the Fen priority habitat within the Broads IDB area.
4	Enhance and maintain habitat and species diversity on watercourses maintained by the Board.
5	Enhance and maintain the flora and fauna of the watercourses maintained by the Board.
6	Ensure compliance to Boards Standard Maintenance Operations (SMO) to maintain watercourses.
7	Implement restoration of watercourses and WLMP objectives within the IDD.
8	Continue to work closely with Norfolk Wildlife Trust, Natural England, the Norfolk Rivers Trust and consultants to ensure Wet Woodland is considered within the consultation process prior to maintenance, capital scheme delivery and river restoration schemes, with a view to maintain, enhance and restore the current extent of wet woodland in the Broads area.
9	Continue to enhance the range and population of Barn Owls and Kestrels by appropriately maintaining or enhancing habitat availability and creating nesting opportunities, within the catchment area.
10	Work in partnership to enhance wet grassland for breeding waders within the Boards area.
11	Contribute toward the Eel Regulations legislative requirements (2009) and the Eel Management Plan.
12	Undertake eDNA water sampling for Eel.
13	Maintain and where possible increase the range of Grass Snake within the Board's area.
14	Control mink within the IDB catchment.

15	Better understand population and extent of water voles within the Boards area.
16	Ensure the appropriate sensitive management of watercourses which will facilitate the maintenance and enhancement of the current distribution and abundance of the Water Vole in the IDB District.
17	Maintain and enhance the current distribution and abundance of the water vole in the IDB District.
18	Understand the status, distribution and ecology of bats in the IDB district.
19	Maintain and enhance the current distribution and abundance of bats within the Board's area.
20	Maintain and where possible, increase the range of Grasswrack Pondweed within the Broads IDD.
21	Monitor and maintain the Broadlands population of Floating Water Plantain and explore opportunities to undertake translocation to other sites in the Broads IDD.
22	Maintain and where possible, enhance water quality and habitat for current assemblages of water plants within the IDD.
23	Promote the biosecurity, control and eradication of non-native invasive species within the Board's area.
24	Raise awareness of the presence and undertake control or eradication of mink in the catchment.

10.8. Appendix 8: Habitats and Species Action Plans

Broads IDB Biodiversity Action Plan Actions		Partners	Date
COASTAL AND FLOODPLAIN GRAZING MARSH			
1a	Continue to work in partnership with stakeholders to look for opportunities, to enhance grazing marshes by appropriate water level management practice through maintenance or partnership working.	RSPB, NRT, NE, EA, Landowners	Ongoing
1b	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance grazing marshes through involvement in projects.	NCC, SCC	Ongoing
REEDBED			
2a	Continue to work in partnership with stakeholders and the Broads Plan Partnership to look for opportunities, to enhance reedbeds by appropriate water level management practice.	RSPB, NWT, NE, BPP	Ongoing
2b	Identify potential sites for habitat restoration and expansion within the IDB area during Capital Scheme delivery and consider future management planning on these sites during this process.	NRT, NE, EA, Landowners	Ongoing
2c	Enhance and maintain reedbed fringe habitat on the Boards main drains.		Ongoing
2d	Explore opportunities to create new reedbeds and link with other reedbed projects to create corridors for wildlife.	NRT, NE, EA, NCC, Landowners	Ongoing
2e	Explore opportunities to work with partners and have involvement in Paludiculture projects.	NRT, NE, EA, NCC, Landowners	Ongoing
2f	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance reedbeds through involvement in projects.	NCC, SCC	Ongoing
2g	Continue to maintain and enhance reedbed habitat through ensuring the appropriate management to water levels	Landowners	Ongoing

	maintained by the board.		
FENS			
3a	Continue to work in partnership with stakeholders and the Broads Plan Partnership to look for opportunities, to enhance fen habitat by appropriate water level management practice.	RSPB, NE, NWT, BPP, Landowners	Ongoing
3b	Work in partnerships to implement Fen Restoration within the IDB area whilst undertaking Capital projects and whilst undertaking WLMP objectives.	NWT, RSPB, NE, EA, Landowners	Ongoing
3c	Explore opportunities to work with partners to undertake Peatland restoration.	BA, NCC, Landowners	Ongoing
3d	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance fens through involvement in projects.	NCC, SCC	Ongoing
3e	Continue to maintain fen habitat by ensuring the appropriate management to water levels maintained by the board.	Landowners	Ongoing
RIVERS, CANALS AND DRAINS			
4a	Work with the planning department to review the boards culverting policy.	Planning Department	2024
4b	Continue to maintain and enhance river and drain habitat through ensuring the appropriate management to water levels maintained by the board.	Landowners	Ongoing
5a	Record species present in watercourses managed by the board.	NBIS	Ongoing
5b	Report pollution incidents within the IDD, working with the EA.	EA	Ongoing
5c	Monitor and report Dissolved Oxygen levels around the Broads pumping stations during the summer period.	EA	Annually
5d	Protect fish populations within the IDD, working with the EA Fisheries team.	EA	Ongoing
5e	Produce a management plan for Halvergate Marshes describing how to cope with changing salinity levels.		2024
5f	Monitor and record water volumes and levels pumped within the IDD.	EA	Ongoing

6a	Regularly update the Boards Standard Maintenance Document.		2023
6b	Ensure compliance with the IDB SMO by auditing on identified number of maintenance works jobs annually, to ensure they are being carried out to an agreed standard across the whole board.		Annually
7a	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to undertake watercourse restoration through involvement in projects.	NCC, SCC	Ongoing
WET WOODLAND			
8a	Consult Norfolk Wildlife Trust prior to work through or near County Wildlife Sites that are outside of the SMO.	NWT	Ongoing
8b	Work in partnership via the Local Nature Recovery Strategy partnerships to look for opportunities to enhance wet woodland through involvement in projects.	NCC, SCC	Ongoing
8c	Continue to maintain and wet woodland habitat through ensuring the appropriate management to water levels maintained by the board.	Landowners	Ongoing
BARN OWL AND KESTREL			
9a	Continue to monitor nest boxes within the IDB area working in partnership with the Wildlife Conservation Partnership.	WCP	Ongoing
9b	Continue to maintain, repair or replace nest boxes appropriately in the IDB area working in partnership with the Wildlife Conservation Partnership.	WCP	Ongoing
9c	Continue to maintain sward height during IDB bankside maintenance mowing of 150mm.	Staff, Contractors	Ongoing
BREEDING WADERS			
10a	Look at opportunities to create scrapes and foot drains whilst working with landowners.	RSPB, BA, NWT	Ongoing
10b	Look for opportunities when undertaking Capital schemes to improve habitat for wading birds	RSPB, NE, NWT	Ongoing
10c	Continue to maintain and enhance breeding wader habitats through ensuring the appropriate management to water levels maintained by the board.	Landowners	Ongoing

EUROPEAN EEL			
11a	Work in Partnership with the Environment Agency to assess the current status of Eel populations at pumping stations within the Boards Area.	EA, ZSL	Ongoing
11b	Work in Partnership with the Environment Agency to identify barriers to migration in the Boards area and assess options for overcoming these.	EA, ZSL	Ongoing
12a	Undertake eDNA water sampling at pumping stations for fish, including Eel (As part of pumping station replacement)	EA	Ongoing
12b	Report eDNA results to the NBIS	NBIS	Ongoing
GRASS SNAKE			
13a	Determine the extent and distribution of the existing populations at the Board's pumping stations and on key drains using ESRI maps and working in partnership with ARG UK.	NBIS, ARG UK	Ongoing
13b	Using the distribution data, develop Hibernacula and egg laying sites at pumping stations or key locations where appropriate.		Ongoing
WATER VOLE			
14a	Continue to contribute funding to the Water Life Recovery Trust.	Water Life Recovery Trust	Annually
14b	Continue to work with the Water Life Recovery Trust on mink eradication.	Water Life Recovery Trust	Annually
15a	Undertake yearly recording by operational staff and report to local biodiversity record centres.	NBIS	Annually
16a	Ensure compliance with the IDB SMO by auditing 4 jobs per year jobs, to ensure they are being carried out sensitively and to an agreed standard across the Board.		Annually
17a	Take opportunities to enhance water vole habitat during Capital or river/wetland restoration schemes.	NE, EA, NWT, RSPB, Landowners	Ongoing
BATS (ALL SPECIES)			

18a	Survey and monitor bat presence around IDD as part of the BTO Norfolk Bat Survey.	BTO	Ongoing
18b	Ensure survey training is delivered to all environment officers.		Ongoing
19a	Install bat boxes and/or bat bricks for roosting and hibernation on suitable IDB structures.		Ongoing
19b	Continue to work with consultants for capital schemes involving bat mitigation and habitat enhancements.	Consultants, Landowners	Ongoing
GRASSWRACK PONDWEED			
20a	Continue annual monitoring of the species in South Walsham and Upton Marshes.	NWT, RSPB, Consultants, Landowners	Annually
20b	Continue to manage the timings and practices for the species in an appropriate manner for the species.	NWT, RSPB, Landowners, Contractors	Annually
20c	Continue to undertake annual turion returns activity (return of turions that are removed from the drain during weed removal) directly after drain maintenance.		Annually
20d	Work in partnership with landowners to carry out clearance works of the soke dyke and new dyke system, whilst standard maintenance is taking place in the area, to maintain the current habitat.	NWT, RSPB, Landowners	Annually
FLOATING WATER PLANTAIN			
21a	Manage the Luronium dyke system, using sensitive practice, under license and supervision of NE whilst undertaking maintenance operations.	Annually	NE, NWT, RSPB, Landowners
21b	Undertake surveys to monitor the plant population at Potter Heigham.	Ongoing	NWT, RSPB, Landowners, Consultants, NE
21c	Work in partnership to find appropriate translocation sites for the plant within the IDD.	Ongoing	NWT, RSPB, NE, Landowners

WATER PLANT ASSEMBLAGES			
22a	Identify opportunities through water management schemes (eg. changes in flow, water control, pump replacement, main drain realignment, water storage, habitat creation schemes) to enhance water quality and other ditch habitat features; and assess risk of negative impacts of such schemes.	Annually	Landowners
NON NATIVE INVASIVE SPECIES			
23a	Establish a partnership with the NBIS to receive up to date records of Invasives within the local area.	Ongoing	NBIS
23b	Continue to contribute to and work in partnership with the Norfolk Non-Native Species Initiative (E.g. Floating pennywort).	Ongoing	NNNSI
23c	Maintain records for all species of concern using the 'iRecord' app.	Ongoing	NNNSI, Staff, Contactors
23d	Train staff regularly in key non-native species identification.	Ongoing	NNNSI, Staff, Contactors
23e	Ensure availability and regular review of identification guides developed for key non-native species to be used by officers, staff and contractors on site.	Ongoing	NNNSI, Staff, Contactors
23f	Regularly review and ensure robust biosecurity measures are being maintained across the Board.	Ongoing	Staff, Contractors
24a	To continue to work in partnership with Mink control/eradication groups	Ongoing	WLRT
24b	Report number of animals caught to the WLRT	Ongoing	WLRT

10.9. Appendix 9: Glossary

Abbreviation	Meaning
AONB	Area of Outstanding Natural Beauty
ARG UK	Amphibian and Reptile Groups of UK
BA	Broads Authority
BAP	Biodiversity Action Plans
BIDB	Broads Internal Drainage Board
BPP	Broads Partnership Plan
BTO	British Trust for Ornithology
CWS	County Wildlife Site
EA	Environment Agency
IDD	Internal Drainage District
LNRS	Local Nature Recovery Strategy
NBIS	Norfolk Biodiversity Information Centre
NCC	Norfolk County Council
NE	Natural England
NNNSI	Norfolk Non-Native Species Initiative
NNR	National Nature Reserve
NRT	Norfolk Rivers Trust
NWT	Norfolk Wildlife Trust
RSPB	Royal Society for the Protection of Birds
SAC	Special Areas of Conservation
SCC	Suffolk County Council
SPA	Special Protection Areas
SSSI	Sites of Special Scientific Interest
TPO	Tree Preservation order
WCP	Wildlife Conservation Partnership
WLMP	Water Level Management Plan
WLRT	Water Life Recovery Trust
ZSL	The Zoological Society of London