



Biodiversity Action Plan 2021-2026

1. Statement

This Biodiversity Action Plan (BAP) has been prepared by the Black Sluice 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 Bill (Act) 2020, 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.

Keith Casswell

Chairperson of the Board

14th June 2022

Paul Holmes

Environment Committee Chairperson

14th June 2022

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.

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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 Bill (Act) 2020, 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 Bill (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 Bill (Act) 2020 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

Black Sluice Internal Drainage Board's vision is:

To maintain a catchment 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 ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations;
- To enable more effective monitoring and reporting of progress and outcomes;
- 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 (INNS);
- To contribute to local environmental partnerships such as the Greater Lincolnshire Nature Partnership (GLNP) to ensure that programmes and priorities for biodiversity conservation are aligned and maintained in the long term;
- 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.

3. The IDB BAP Process

3.1 The Biodiversity Audit

The Black Sluice 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 (Bill) Act 2020.

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 Black Sluice Internal Drainage District Overview

The drainage district covers an area of approximately 61,000 ha and contains 760km of IDB maintained watercourse along with 148 km of main river.

It is located in the Lincolnshire Fens generally south-west of Boston. The Board's area extends from Chapel Hill in the north, to Wilsford in the west, to Bourne then Spalding in the south back to Boston in the east. The Board's boundaries are defined by either main river, Witham and Kyme Eau to the north and Glen and Bourne Eau to the south. High contour line to the western boundary and differing catchments in adjacent Drainage Board areas to the east, the Board has 8km of boundary fronting the River Haven and Wash on the east coast below Boston. The South Forty Foot Drain, a major high consequence watercourse, effectively runs through the centre of the area, south from Guthram Gowt, north and then east into Boston and out into the River Haven and North Sea via the Wash.

The following outlines the key details of the District:

Total area of the Black Sluice IDB Drainage District	47,220 ha
Catchment area draining to and including the District	67,293 ha
Total area of the District	47,220 ha
Area of Agricultural Land	43,896 ha
Area of other (non-agricultural) land	3,324 ha
Site of Designated Environmental Interest:	
Horbling SSSI	15 ha
The Wash SSSI & Ramsar	42 ha

Assets for which the Board has operational responsibility:

Watercourses (maintained) 755 km Raised Embankments 4 km

Pumping Stations 34 (63 pumps)

Assets within or adjacent to the District that are maintained by the Environment Agency:

Main Rivers 169.5 km

Raised embankments / flood walls 7.9 km (Sea Defences)

172.2 km (River Flood Defences)

Pumping Stations 2

The area covered by the drainage district of the IDB is shown below in Figure 1.

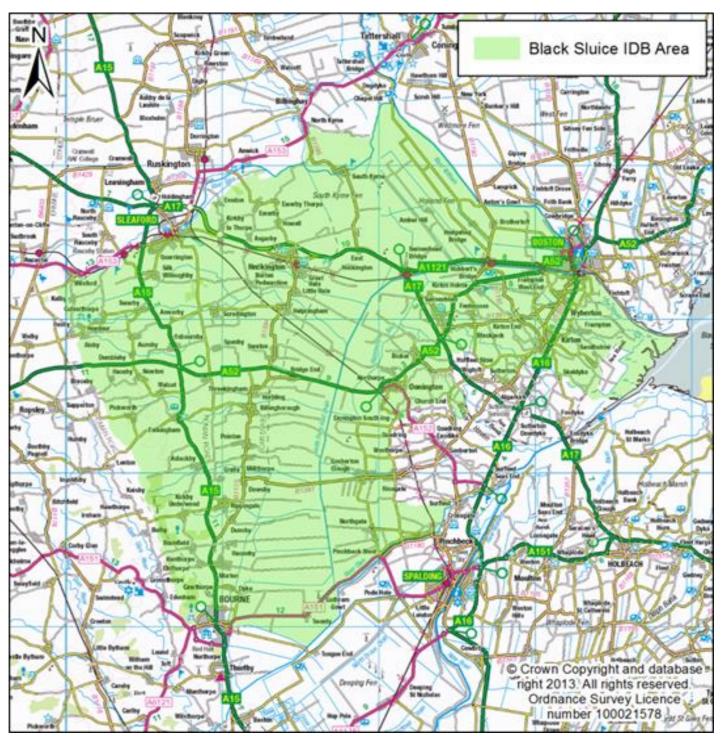


Figure 1. Black Sluice Internal Drainage District.

4.3 Geology

The majority of the Board's area has drift geology of fenland alluvium. In the west there are small areas of fen peat, gravel, clay and limestone.

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.

The majority of the Board's area lies within The Fens NCA. The part which lies between Sleaford and Heckington then south to between Swaton and Osbournby lies within the Southern Lincolnshire Edge NCA, and the very small part which lies north of Bourne to roughly the east-west line of the A52 is within the Kesteven Uplands NCA.

4.5 Landscape Designations

There are no National Parks or Areas of Outstanding Natural Beaty (AONB) within the Board's catchment area.

4.6 Sites and Monuments

Scheduled Ancient Monuments (SAMs) are not directly related to Biodiversity matters. Information held by the Board and other sources has not therefore been collated. SAMs are only relevant where they occur adjacent to the Board's watercourses, and they would be referred to on a site by site basis as appropriate.

SAMs are listed by English Heritage, who together with Lincolnshire County Council's Historic Environment Record is consulted during Environmental Impact Assessment for all new schemes.

4.7 Tree Preservation Orders

Tree Preservation Orders (TPOs) are not directly related to Biodiversity matters since they are made on individual trees, groups or woods for landscape and visual amenity reasons. Information held by the Board and other sources has not therefore been collated. TPOs are only relevant where they occur adjacent to the Board's watercourses and they would be referred to on a site by site basis as appropriate.

TPOs are made under the Town and Country Planning Act 1990 and the Town and Country Planning (Trees) Regulations 1999. TPOs are administrated by Local Authorities. It is hoped to enter TPOs on the Board's Geographic Information System in the future; liaison on trees potentially protected by TPOs is undertaken during the EIA process.

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.

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

Site name	Designation	Features Relevant to IDB
The Wash	In two places to the south-east of Kirton and Frampton, the Board's area lies adjacent to The Wash, which is a Special Area of Conservation (SAC), Special Protection area (SPA) and Ramsar site.	The Wash is the largest estuarine system in Britain. It is fed by the rivers Witham, Welland, Nene and Great Ouse. There are extensive saltmarshes, intertidal banks of sand and mud, shallow waters and deep channels. It is the most important staging post and over-wintering site for migrant wildfowl and wading birds in eastern England. It supports a valuable commercial fishery for shellfish and also an important nursery area for flatfish. It holds one of the North Sea's largest breeding populations of common seal Phoca vitulina and some grey seals Halichoerus grypus. The sublittoral area supports a number of different marine communities including colonies of the reef-building polychaete worm Sabellaria spinulosa.

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

Sources of information and map can be found in Annex 1.

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. Sources of information and a map can be found in Annex 2.

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
The Wash TF 550400	SSSI, NNR	Yes	No	The whole area is of exceptional biological interest. The intertidal mudflats and saltmarshes represent one of Britain's most important winter-feeding areas for waders and wildfowl outside of the breeding season. Enormous numbers of migrant birds, of international significance, are dependent on the rich supply of invertebrate food. The saltmarsh and shingle communities are of considerable botanical interest and the mature saltmarsh is a valuable bird breeding zone. In addition, the Wash is also very important as a breeding ground for Common Seals.

Horbling Fen TF 154353	SSSI	No	Yes	This site contains sediments deposited between the end of the last Ice Age and the present day, and provides a record of the inundations of the sea during this period. The site has considerable potential for future research using stratigraphic and micropaleontological studies to assess one of the most recent marine transgressions in the region and to correlate the inferred sea-level changes with numerous local archaeological finds. The Board have a WLMP agreed with Natural England.
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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. Sources of information and a map are listed in Annex 3.

Table 3. Local Nature Reserves within the drainage district

Site name	Associated WLMP?*	Features Relevant to IDB
Mareham Pastures	No	On the Boards boundary with no relevance to the Board

4.8.4 Non-statutory Local Wildlife 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. Sources of data can be found in Annex 4.

Table 4. Non-Statutory sites within the drainage district

Site name	Designation	Features Relevant to IDB		
Aswarby Thornes	Local Wildlife Site	Woodland		
Beacon Hill Railway Cutting	Local Wildlife Site	Calcareous grassland		
Botolphs Park Pond	Local Wildlife Site	Pond, Garden		
Broadhurst Drain East	Local Wildlife Site	Coarse or rank grassland, Drain, Neutral grassland - semi-improved		
Cobble's Lock Sedge and Reed Beds	Local Wildlife Site	Fen, Wet Woodland, Scrub, Standing Water		
Cole's Lane Ponds	Scrub, Semi-improved neutral grassland, Pond, Marsh/fen, Reedbed			
Drove Drain, Horbling Fen	Local Wildlife Site	Coarse or rank grassland, Drain, Neutral grassland - semi-improved		
Dyke Fen Drains	Local Wildlife Site	Coarse or rank grassland, Drain		
East Drains, Billingborough Fen	Local Wildlife Site	Coarse or rank grassland, Drain		
Ewerby Pond	Local Wildlife Site	Pond, Scrub, Marsh, Field margin		
Fen Road Drain	Local Wildlife Site	Coarse or rank grassland, Drain, Ruderal		
Flower Pot Brick Pits	Local Wildlife Site	Semi-natural woodland, Wet woodland, dense scrub, standing water		
Frampton Hall	Local Wildlife Site	Parkland, Semi-natural woodland, Scrub, Semi-		

		improved neutral grassland, Semi-improved calcareous grassland, Improved grassland Coarse or rank grassland, Ditch, Pond		
Gravel Dike	Local Wildlife Site	Drain		
Great Hale Eau	Local Wildlife Site	Drain		
Guthram Gowt (River Glen)	Local Wildlife Site	Neutral grassland (semi-improved), Scrub (scattered and dense), Species-rich hedgerows, Ruderal, Pond, Floodplain		
Hacconby Drove Drain	Local Wildlife Site	Coarse or rank grassland, Drain, Linear reedbed		
Hall Weir	Local Wildlife Site	Wet woodland, Coarse or rank grassland, Dense scrub, Ditch, Pond, Reedbed		
Hammond Beck	Local Wildlife Site	Coarse or rank grassland, Drain, Reedbed / Linear reedbed		
Kirkby la Thorpe Pit	Local Wildlife Site	Standing water, Unimproved calcareous grassland, semi-improved neutral grassland, semi-natural & wet woodland, dense scrub, ruderal		
Mackay's Pit	Local Wildlife Site	Pond		
Mareham Pastures	Local Wildlife Site	Semi-improved neutral grassland, Woodland		
Mill Drain	Local Wildlife Site	Coarse or rank grassland, Drain, Neutral grassland - semi-improved		
Millthorpe Drove Drain	Local Wildlife Site	Coarse or rank grassland, Drain, Neutral grassland - semi-improved		
Morton Drain	Local Wildlife Site	Coarse or rank grassland, Drain, Linear reedbed		
New Dike West	Local Wildlife Site	Drain		
North Drain, Billingborough Drove	Local Wildlife Site	Coarse or rank grassland, Drain		
North Drain, Horbling Fen	Local Wildlife Site	Coarse or rank grassland, Drain		
Old Forty Foot Drain	Local Wildlife Site	Coarse or rank grassland, Drain		
Old Forty Foot to South Forty Foot Drain	Local Wildlife Site	Coarse or rank grassland, Drain		
Risegate Eau	Local Wildlife Site	Coarse or rank grassland, Drain, Linear reedbed, Scrub		
River Glen Corridor	Local Wildlife Site	River, Coarse or rank grassland, Semi-improved neutral grassland		
Slippery Gowt Sea Bank	Local Wildlife Site	Coarse or rank grassland		
South Drain, Billingborough Drove	Local Wildlife Site	Coarse or rank grassland, Drain		
South Forty Foot Drain	Local Wildlife Site	Drain, Neutral grassland (semi-improved), Coarse or rank grassland		
Threekingham Road Verges	Local Wildlife Site	Calcareous grassland		
Twenty Foot Drain	Local Wildlife Site	Coarse or rank grassland, Drain		
Tytton Lane West Pits, East	Local Wildlife Site	Pit, Dense scrub		
Tytton Lane West Pits, West	Local Wildlife Site	Pit, Dense scrub		
Westgate Wood and Meadow	Local Wildlife Site	Native plantation - new, Neutral grassland - semi-improved, Coarse or rank grassland, Ditch, Pond, Scrub - scattered / dense		
Willow Farm Drain	Local Wildlife Site	Coarse or rank grassland, Drain		
•	•			

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. (A list of relevant Priority habitats can be found at https://jncc.gov.uk/our-work/uk-bap-priority-habitats/).

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)
Hedgerows	A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide.	Ancient and/or species-rich hedgerows	70% loss between 1984 and 1990.	Hedgerows	Not known- dominant feature within the drainage district, with many watercourses bounded, at least on one side, by hedge lines. Most of these are species-poor and are either unmanaged or heavily managed.	High – planting and maintenance
Reedbeds	Reedbeds are wetlands dominated by stands of the common reed Phragmites australis, wherein the water table is at or above ground level for most of the year. They tend to incorporate areas of open water and ditches, and small areas of wet grassland and carr woodland may be associated with them.	Fens and wet reedbeds	Stable	Watercourses, ponds and wetlands	Isolated open water bodies with extensive reed margins on some watercourses, ponds and wetland fens.	High - Potential to expand reedbed habitat by extending existing margins along watercourses and Board owned ponds and wetlands

Wet Woodlands	Wet woodland occurs on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species, but sometimes including ash, oak, pine and beech on the drier riparian areas. It is found on floodplains, as successional habitat on fens, mires and bogs, along streams and hill-side flushes, and in peaty hollows.	Wet Woodlands	Stable	Wet Woodlands	Marginal to isolated open water bodies and some larger waterlogged areas	Medium – the Board owns three small wet woodland sites. No real potential to expand habitat by extending woodland areas.
Fens and Watercourses	Unknown	Watercourses	Stable	Watercourses	Vast majority of the Boards area is Fenland with Main River, Ordinary Watercourses and Riparian Ditches throughout.	High - Maintain vegetated fringes where risks allow, install vegetated ledges when re-profiling banks.

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. (A list of relevant Priority species can be found at https://jncc.gov.uk/our-work/uk-bap-priority-species/).

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
Bank and reed nesting birds such as:- Reed Bunting, Sedge Warbler, Reed Warbler, Bearded Tit, Cuckoo	Various protected species with fluctuating status	Fluctuating year on year, dependent on the breeding season	Throughout the remote fenland catchments	Manage banks so as to maintain and extend areas of adjacent rank grassland, alternate bank cuts where possible to leave established reed margins.
Bats	The latest trends indicate that populations of bat species that can be monitored are stable or recovering.	There are suggestions that current legislation and conservation actions to protect and conserve bats are having a positive impact, and it is vitally important that these continue.	Channels, Pumping Station buildings and Pumping Station suction bays	Bat boxes positioned on all Pumping Station buildings.
Water Vole	S41 species, Listed in WCA 1981 Long term decline	Difficult to determine, the view is the local status is stable.	Identified throughout the Board's area with the exception of smaller headwaters	Appropriate management of watercourses & predator control.

Kingfisher	Amber listed species in the 'Birds of Conservation Concern' Schedule 1 WCA 1981 Formerly declining along linear waterways until the mid-1980s, since recovered.	Increasing	Identified throughout the Board's area	Monitor & maintain current nest site and install artificial nest sites at suitable pumping station locations
Barn Owl	A Schedule 1 species, generally declining.	High than average population throughout the Board's area.	Likely to be breeding throughout the Board's area, using habitats not always associated with watercourses. Owl boxes at 30+ locations in the Board's area at present	Annually maintain existing Barn Owl boxes, continuous replacement plan.
Eel	S41 species, difficult to monitor but declining.	Believed to be in every watercourse throughout the catchment.	Probably throughout the Board's area	Maintain gravity flows at Pumping stations, remove all unnecessary obstructions from watercourses. Develop the Boards Eel management plans.
Otter	Priority species	Increasing	Increased sightings throughout the catchment.	Construct an Otter holt and maintain in good order in the hope an Otter marks a territory.
Grass Snake	Protected species	Widespread	Channels and their banks, including drying out weed rakings.	Maintenance of habitat and provision of refugia/egg laying piles/hibernating at suitable pumping station sites

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 and riparian 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	Not yet identified within the catchment, be watchful			IDB management plan and control measures, and partnership working
Parrots Feather	Not yet identified within the catchment, be watchful			IDB management plan and control measures, and partnership working.
Water Fern	Widespread in 'bad' years, localised in normal years	2008	North Forty Foot, Claydyke, Hammond Beck	IDB management plan and control measures, and partnership working
Japanese Knotweed	Occasional around built-up areas	2013	Threekingham	IDB management plan and control measures, and partnership working
Giant Hogweed	Occasional	2013 2020	Wyberton South Forty Foot Drain Boston report from EA,	IDB management plan and control measures, and partnership working
Himalayan Balsam	Occasional		No known reports/records	IDB management plan and control measures, and partnership working
American Mink	Thinly but widely spread	2008	Sightings at Swineshead p/s, Frampton Towns Drain, North Forty Foot, Dowsby Fen p/s	Board purchased Mink traps used and monitored following positive sightings

Chinese Mitten Crab	Not yet identified within the catchment, be watchful		
Killer Shrimp	Not yet identified within the catchment, be watchful		
Signal Crayfish	Not yet identified within the catchment, be watchful		

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 further details of the Water Level Management Plans for which the IDB has some involvement within their drainage district.

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

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)	Active Management by IDB	WLMP Last Updated
Horbling Fen	This site contains sediments deposited between the end of the last Ice Age and the present day and provides a record of the inundations of the sea during this period. The site has considerable potential for future research using stratigraphic and micropaleontological studies to assess one of the most recent marine transgressions in the region and to correlate the inferred sea-level changes with numerous local archaeological finds. The Board have a WLMP agreed with Natural England.	BSIDB/NE		Ops Lead	

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.

5.2 Habitat Action Plans

5.2.1 Hedgerows

5.2.1.1 National and Local Targets

Table 9. Hedgerows - National and Local Targets

National Targets	Local Targets
To halt the loss of all hedgerows that are both ancient and species rich and maintain overall numbers of hedgerow trees throughout the country.	To halt the loss of hedgerows & achieve favorable management of all hedgerows & plant new hedgerows, particularly to help landscape connectivity.

5.2.1.2 IDB Objectives

Table 10. Hedgerows - IDB Objectives

IDB Objectives				
1	Ensure no net loss of hedges as a result of IDB activities			
2	Increase the extent of hedgerows within IDB			

5.2.1.3 IDB Actions

Table 11. Hedgerows – IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	Ensure that compensation planting takes place if any hedges are removed. To provide enhancement by being a wider species mix.	Length in m of hedges removed and hedges planted	Ongoing	IDB Ops	Landowners
2	Prevent damage to existing hedges (does not preclude management to allow watercourse maintenance, including coppicing).	Intact hedgerow in m this year compared to last	Ongoing	IDB Ops	Landowner
3	Identify location and plant 0.5 km hedgerow over 5 years.	Length of new hedgerow (m) each year	April 2025	Ecologist	Landowner
4	Avoid trimming hedgerows between 1 March and 31 July (the main nesting season for birds)	Annual reports	Ongoing	IDB Ops	Landowner

5.2.2 Reedbeds and Drainage Ditches

5.2.2.1 National and Local Targets

Table 12. Reedbeds and Drainage Ditches – National and Local Targets

National Targets	Local Targets
Reedbed is one of the rarest habitat types in the UK and is highly fragmented. Continuous expansion of existing and creation of new reedbed being the National Target.	Drainage ditches hold an unknown amount of habitat with the importance of the linear reedbed margins and banks often going underestimated. The IDB's maintenance regime should maintain this habitat in good conditions.

5.2.2.2 IDB Objectives

Table 13. Reedbeds and Drainage Ditches – IDB Objectives

IDB Objectives

- To enhance and maintain as a minimum the biodiversity already present within ditches
- To increase the biodiversity within drainage ditches while maintaining drainage standards

5.2.2.3 IDB Actions

Table 14. Reedbeds and Drainage Ditches – IDB Actions

Objective ref.	Action	Measurable / Indicators	Completio n date	Action Lead	Partners
1	Maintain the existing marginal fringes of vegetation of at least 45 - 60cm wide (approx.)* along at least one side of all drainage ditches where flood risk allows. *Width of vegetation fringe is dependent upon flood risk category and drainage ditch width. Where a wider channel allows a wider fringe then establish, where flood risk prevents, act accordingly. Use drainage channel biodiversity manual as a guide.	Length of marginal fringe extent in m maintained each year where flood risk allows.	Ongoing	Ops Lead	Ecologist
2	Identify ditches suitable to allow a continuous marginal fringe of vegetation at least 45 - 60cm wide (approx.) or more along at least one side of the ditch.* In areas identified, plant with suitable plugs, install coir rolls or allow colonisation naturally.	Establishment/colonisation of new marginal vegetation in m each year	31/12/2025	Ops Lead	Ecologist
3	Identify ditches which are too narrow for a continuous vegetation fringe to be installed, but where occasional patches of vegetation	Length of occasional marginal vegetation patches established in m	31/12/2025	Ops Lead	Ecologist

	fringes can be encouraged. Plant with suitable plugs, install coir rolls or allow colonization naturally.				
4	Install marginal plant ledges during bank re- profiling and plant with sedge plugs or coir rolls	Length in m of plant ledge created each year	Ongoing	Ops Lead	Ecologist
5	Alternate bank side cutting each year where risk allows. Mowing to take place between August and April to avoid bird nesting season. 45 - 60cm or more from toe of bank to be left unmown on ditches where risk and ditch profile allows.	Increased extent of uncut ditch bank	Ongoing	Ops lead	Ecologist
6	Remove bank-side cuttings where possible (with conveyor) to encourage sward diversity. Survey to identify diversity baseline and diversity following cuttings removal.	Survey highlights increased sward diversity after 5 years.	Ongoing	Ops Lead	n/a
7	Establish a pollen-rich sward following bank re-profiling	Floristic species present in bank sward.	Ongoing	Ops Lead	Ecologist

5.2.3 Wet Woodland

5.2.3.1 National and Local Targets

Table 15. Wet Woodland - National and Local Targets

National Targets	Local Targets
A UK BAP Priority Habitat, large areas of wet woodland are especially scarce in Lincolnshire.	Wet woodland within the Board's area typically occur as small stands at sites where there are open water, reedbed and fen habitats. The Board own three small Wet Woodland site in the Borne Fen, our target is to maintain these to preserve the sites.

5.2.3.2 IDB Objectives

Table 16. Wet Woodland - IDB Objectives

IDB Objectives

- To improve the management of our wet woodland sites with the Board's area
- To operate long term management plans to the three sites the Board own.

5.2.3.3 IDB Actions

Table 17. Wet Woodland - IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	Identify and map the extent and condition of wet woodland within the catchment.	Number of areas and area size. GIS layer	31/12/2025	Ops Lead	Ecologist
2	Ensure the maintenance programmes cause no harm to existing wet woodland.	No net loss	On going	Ops Lead	n/a
3	Monitor wet woodland and manage it effectively to prevent the area drying out.	No net loss	On going	Ops Lead	n/a
4	·	Number of areas and area size. GIS layer	On going	Ops Lead	LWT

5.3 Species Action Plans

5.3.1 Bank & Reed nesting Birds

5.3.1.1 National and Local Targets

Table 18. Bank and Reed Nesting Birds – National and Local Targets

National Targets	Local Targets
UK BAP Priority Species	All likely to be breeding throughout the catchment, especially in the remote and heavily reeded fens. Maintenance technique's and programme timing to be taken into consideration.

5.3.1.2 IDB Objectives

Table 19. Bank and Reed Nesting Birds - IDB Objectives

IDB Objectives

Maintenance and improvement of habitat.

5.3.1.3 IDB Actions

Table 20. Bank and Reed Nesting Birds – IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
	Investigate methods for monitoring and recording various species throughout the catchments.	Records, GIS layers	On going	Ops Lead	Ecologist

5.3.2 Bats (All Species)

5.3.2.1 National and Local Targets

Table 21. Bats - National and Local Targets

National	Local
Protected under Schedule 5 of the WCA 1981 there are 16 species of bat known in the UK that are dealt with collectively. Thought to be declining due to loss of feeding habitat, loss of roosting sites, disturbance and fragmentation of habitats.	

5.3.2.2 IDB Objectives

Table 22. Bats - IDB Objectives

IDB Objectives		DB Objectives
	1	To maintain and improve current habitat
	2	Reduce disturbance whilst undertaking Board activities
	3	Protect, maintain and enhance the features in our landscape required by Bats

5.3.2.3 IDB Actions

Table 23. Bats – IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	Investigate methods for monitoring/survey works at select pumping station sites.	Surveys, annual report	On going	Ops Lead	Ecologist
2	Erect roosting boxes on Board buildings.	GIS Layer, annual report	On going	Ops Lead	Ecologists
3	Locate and protect roosts used by bats.	Surveys	On going	Ops Lead	Ecologists
4	Monitor and survey bat species, numbers, and locations.	Surveys	On going	Ops Lead	Ecologists

5.3.3 Water Vole

5.3.3.1 National and Local Targets

Table 24. Water Vole – National and Local Targets

National	Local
, , , , , , , , , , , , , , , , , , ,	The Boards area forms a significant local stronghold for water vole.
lowland areas with nearby water, there has been a significant	
decline in distribution and numbers within the UK.	

5.3.3.2 IDB Objectives

Table 25. Water Vole - IDB Objectives

IDB Objectives

Maintain current water vole extent by reducing habitat degradation and loss through good watercourse maintenance techniques

- Raise awareness of water vole conservation issues with the IDB machine operators
- 3 Better understand water vole population, movement and extent

5.3.3.3 IDB Actions

Table 26. Water Vole - IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	Control American mink	Number of mink caught	Annually	Ops Lead	n/a
2	Work with GLNP on mink task group to monitor county water vole and mink populations.	GLNPs annual reports indicating number and results of surveys. Extent of water vole population	Annually	Ops Lead	Ecologist/GLNP
3	Continue yearly recording by operational staff.	Number and location records collected and submitted to local biodiversity records office.	Annually	Ops Lead	n/a

5.3.4 Kingfisher

5.3.4.1 National and Local Targets

Table 27. Kingfisher – National and Local Targets

National	Local
Protected under the WCA 1981, the Kingfisher is widespread	Occasionally seen throughout the Boards area along open watercourses and
throughout the UK, exact numbers are difficult to confirm	around pumping stations.

5.3.4.2 IDB Objectives

Table 28. Kingfisher – IDB Objectives

IDB Objectives

Maintain potentially suitable kingfisher habitat, particularly breeding habitat

5.3.4.3 IDB Actions

Table 29. Kingfisher – IDB Actions.

C	bjective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
	1	Maintain and avoid disturbance to potential nest sites by retaining earth cliffs and avoiding close working.	Number and extent of earth cliffs in m each year. Work schedules detail exclusion zone around known nest sites in the breeding season.	On going	Ops Lead	n/a
	2	During replacement of pumping station create artificial kingfisher hole	New Kingfisher nesting hole to be present, GIS layer	On going	Ops Lead	n/a

5.3.5 Barn Owl

5.3.5.1 National and Local Targets

Table 30. Barn Owl – National and Local Targets

National	Local
Protected under Schedule 1 of the WCA 1981, widely distributed across the UK and very weather dependent on successful breeding seasons. Following a decline in numbers over the past fifty years, numbers may now be increasing.	

5.3.5.2 IDB Objectives

Table 31. Barn Owl – IDB Objectives

IDB Objectives

To maintain and where possible increase the range and population of Barn Owl within the Board's area.

5.3.5.3 IDB Actions

Table 32. Barn Owl – IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	To increase nesting opportunities on land managed by the Board.	GIS Layer	Annually	Ops Lead	Hawk & Owl Trust
2	Maintain and renew nesting boxes at Pumping stations and pole sights.	Annual reports	Annually	Ops Lead	Hawk & Owl Trust
3	Monitor the use of the boxes, ring and record fledglings.	Annual reports	Annually	Ops Lead	Hawk & Owl Trust
4	Maintain areas of marginal vegetation around pumping stations and drains	GIS Layer	Annually	Ops Lead	n/a

5.3.6 Eel

5.3.6.1 National and Local Targets

Table 33. Eel – National and Local Targets

National	Local
Critically endangered	There is a legal requirement to position Eel passes at locations where their passage is impeded or likely to be impeded. Eel Regulation compliance for 'Pumping Station Passability' is ongoing in partnership with the EA.

5.3.6.2 IDB Objectives

Table 34. Eel – IDB Objectives

IDB Objectives

- To maintain and where possible increase the habitat range and population of Eels within the Board's area.
- 2 To remove any unnecessary watercourse restriction that could impede eel passage.

5.3.6.3 IDB Actions

Table 35. Eel – IDB Actions.

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	Maintain the current range of eels within the Board's area through effective watercourse management.	Annual reports	Annually	Ops Lead	Ecologist
2	Install and maintain suitably approved Eel passes where necessary.	GIS layer	Annually	Ops Lead	Ecologist/EA

5.3.7 Otter

5.3.7.1 National and Local Targets

Table 36. Otter – National and Local Targets

National National	Local
Protected under Schedule 5 of the WCA 1981, following a UK decline there now appears to be an increase in numbers and becoming more widespread.	Becoming more increasingly common through sightings within the Board's area.

5.3.7.2 IDB Objectives

Table 37. Otter - IDB Objectives

IDB Objectives

Assist in maintaining sustainable populations by protecting, maintaining and enhancing the features required by this species.

5.3.7.3 IDB Actions

Table 38. Otter – IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners	
1	Maintain habitat suitable for otter within the Board's area	Annual maintenance works	On going	Ops Lead	n/a	
2	Record sighting by the Board's workforce	GIS layer	Ongoing	Ops Lead	n/a	
3	Construct an Otter holt and maintain	Annual maintenance/inspection	Ongoing	Ops Lead	n/a	

5.3.8 Grass Snake

5.3.8.1 National and Local Targets

Table 39. Grass Snake - National and Local Targets

National	Local
UK BAP Priority Species	Suffered from decline in habitat availability due to agricultural intensification but believed to be widespread throughout the remote Fens and increasing in number.

5.3.8.2 **IDB Objectives**

Table 40. Grass Snake – IDB Objectives

IDB Objectives

To maintain and where possible increase the range and population of Grass Snake within the Board's area

IDB Actions 5.3.8.3

Table 41. Grass Snake – IDB Actions

Objective ref.	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	Create egg laying/hibernation stations throughout the Board's area.	GIS layer, annual maintenance	Ongoing	Ops Lead	n/a

5.3.9 Butterfly and Moth

5.3.9.1 **National and Local Targets**

Table 42. Butterfly and Moth - National and Local Targets

National	Local
UK BAP Priority Species	Thought to be rapidly declining, future plans should include more surveys, monitoring, research, site management and protection as well as publicity.

5.3.9.2 **IDB Objectives**

<u>Table 43. Butterfly and Moth</u> – IDB Objectives

IDB Objectives

To undertake any watercourse maintenance adjacent to a Butterfly Garden in respect of conveyance, in an agreed and considerate way.

5.3.9.3 **IDB Actions**

Table 44. Butterfly and Moth - IDB Actions

Objectiv	Action				Measurable / Indicators			Completion date	Action Lead	Partners	
1	Co-ordinate maintenance managers.	lite with	touch Butterfly	essential Garden	Annual Gardens	reports	from	Butterfly	Ongoing	Ops Lead	Butterfly Garden Managers (e.g., Amber Hill Butterfly Garden)

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 42. Procedural Action Plan – Objectives and Targets

IDB Objectives	
To improve all IDB employee's knowledge of biodiversity support through training.	
To improve IDB practitioners knowledgeable about specific local biodiversity through training.	
To maintain no net loss of open watercourse through consenting.	

6.3 IDB Actions

Table 43. Procedural Action Plan – IDB Actions

Target Reference	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	Ensure all staff including contractors have received high-level biodiversity training within 6 months from the start date of this Plan, or as part of their induction, and refresher training provided every 3 years.	Numbers of staff trained	Ongoing	Ecologist	
2	Produce a manual of best practice within 12 months from the date of this plan.	Publication of manual on website	June 2022	Ecologist	NE/ WT
3	Develop and deliver 12 habitat and species specific toolbox talks, to be delivered 1 per quarter per year	Delivery of 12 toolbox talks	Ongoing	Ecologist	WT

4	Respond to applications for culverts with alternatives to maintain open watercourses. Approve no new long culvert applications.	Extent of open watercourses maintained.	Ongoing	CEO	LA's
5	Identify areas for limited maintenance	Develop the idea with the works Committees	Ongoing	Ops Team	

7 Implementation

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

- 1) The actions which can be delivered through adaptions or inclusions to general maintenance programmes will be identified and integrated accordingly / into the IDBs best practice manual. From this, monthly maintenance schedules will be drawn up and completed activities communicated via returned job cards or similar.
- 2) Actions which require independent and additional execution such as bat and bird box erection and surveys or training will identified, resources planned and engaged and / or planned in to the relevant resources' work schedules.
- 3) Actions which can be executed through capital works programmes will be integrated into the relevant project plans.
- 4) Actions which can be delivered through collaboration with partners will be formally agreed in writing with such partners with responsibilities, timescales and reporting requirements defined.
- 5) Actions which can be delivered through developer or consented works will be identified and integrated into project plans.

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.

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;

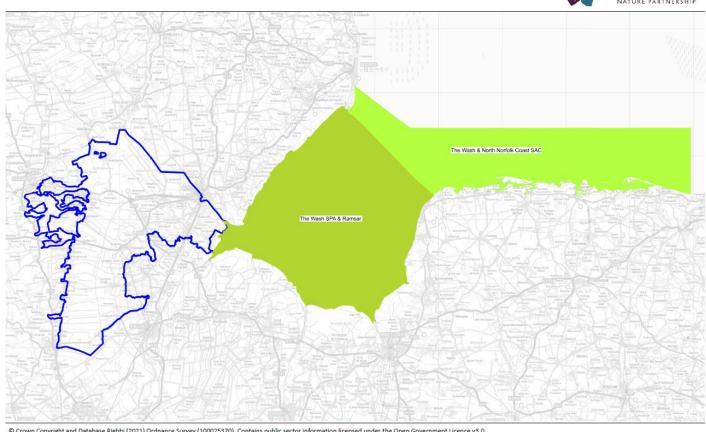
- Provided to conservation partners to assist with further local biodiversity conservation planning;
- Provided to local authorities in order to contribute towards their legislative biodiversity reporting requirements including the NERC 2006 Act, Habitats Directive, Environment Bill and the Local Nature Recovery Strategies;
- The Local Biological Records Centre.

10 Appendices

10.1 Appendix 1 – Internationally Designated Conservation Sites

Internationally Designated Nature Conservation Sites





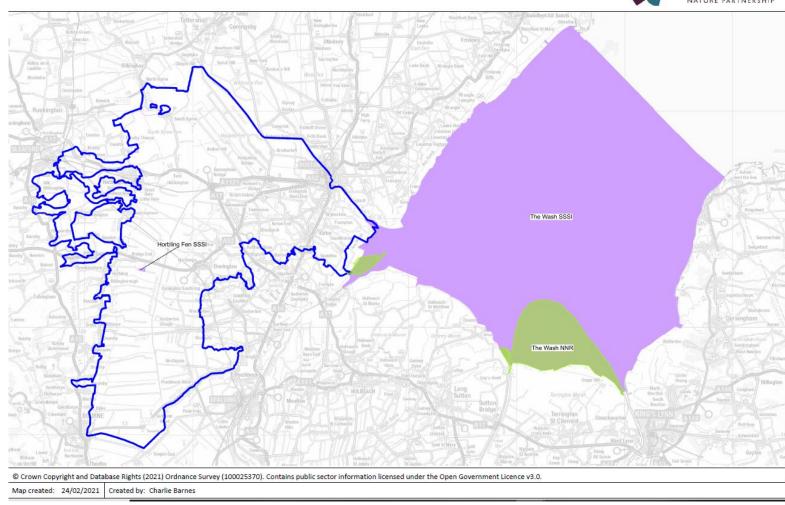
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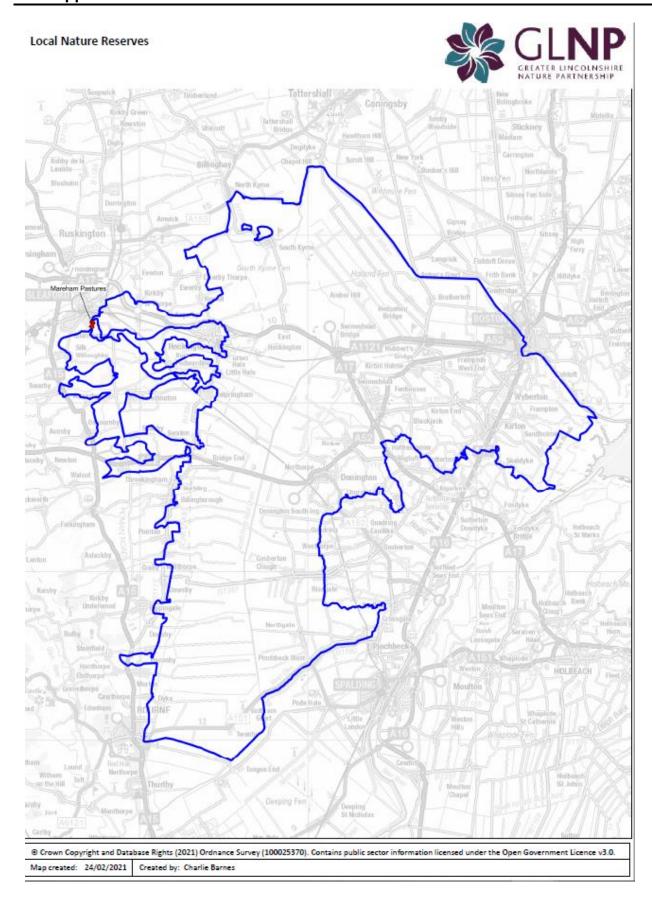
10.2 Appendix 2 – National Sites

National Sites





10.1 Appendix 3 – Local Nature Reserves



Non Statutory Local Sites Cobbler's Lock Sedge and Reed Beds Ruskington Old Forty Foot Drain Frampton Hall Fen Road Drain onby Drove Orain HOLBEACH New Dike West © Crown Copyright and Database Rights (2021) Ordnance Survey (100025370). Contains public sector information licensed under the Open Government Licence v3.0.

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