

DOWNHAM MARKET GROUP OF INTERNAL DRAINAGE BOARDS

consisting of:

**East of the Ouse, Polver & Nar IDB
Downham & Stow Bardolph IDB
Northwold IDB
Southery & District IDB
Stoke Ferry IDB
Stringside IDB**

BIODIVERSITY ACTION PLAN

April 2010

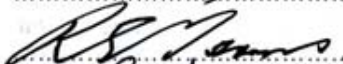
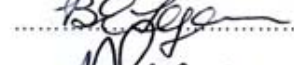


This Biodiversity Action Plan has been prepared by Norfolk Wildlife Services on behalf of the Downham Market Group of Internal Drainage Boards. This has been done in accordance with the commitment in the Implementation Plan of the DEFRA Internal Drainage Board Review for Internal Drainage Boards (IDBs) to produce their own Biodiversity Action Plans by April 2010.

It also demonstrates the Board's commitment to fulfilling its duty as a public body under the Natural Environment and Rural Communities Act 2006 to conserve biodiversity.

Many of the Boards' activities have benefits for biodiversity, not least its water level management and ditch maintenance work. It is hoped that this Biodiversity Action Plan will help the Board to maximise the biodiversity benefits from its activities and demonstrate its contribution to the Government's UK Biodiversity Action Plan (BAP) targets.

The Board has adopted the 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.

	 E of O, P & N IDB	Date 13/04/2010
	 D & S B IDB	Date 13/04/2010
	 N IDB	Date 13/04/2010
	 S & D IDB	Date 13/04/2010
	 S F IDB	Date 13/04/2010
	 S IDB	Date 13/04/2010
Name 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.

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Further information is available on the Board's website: www.downhammarketidbs.org.uk

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1 IDB BIODIVERSITY – AN INTRODUCTION

1.1 Introduction

The Downham Market Group of Internal Drainage Boards (IDBs) has conducted a biodiversity audit of its district and identified those habitats and species that would benefit from particular management or actions by the IDB. Using this information which is presented in later sections, the IDB's Biodiversity Action Plan (BAP) has been developed. The BAP identifies objectives for the conservation and enhancement of biodiversity within the drainage district and describes targets and actions that will hopefully deliver these objectives. The intention is to integrate, as appropriate, biodiversity into the Board's activities, such as annual maintenance programmes and capital works projects.

The action plan will help to safeguard the biodiversity of the drainage district now and for future generations. In particular, it is hoped that implementing the plan will contribute to the achievement of local and national targets for UK BAP priority species and habitats. Species and habitats which are not listed in the UK BAP but may be locally significant for a variety of reasons have also been considered.

The Plan is an evolving document that will be reviewed and updated on a regular basis. It covers the entire drainage district of the IDB, as shown in Figure 1 below.

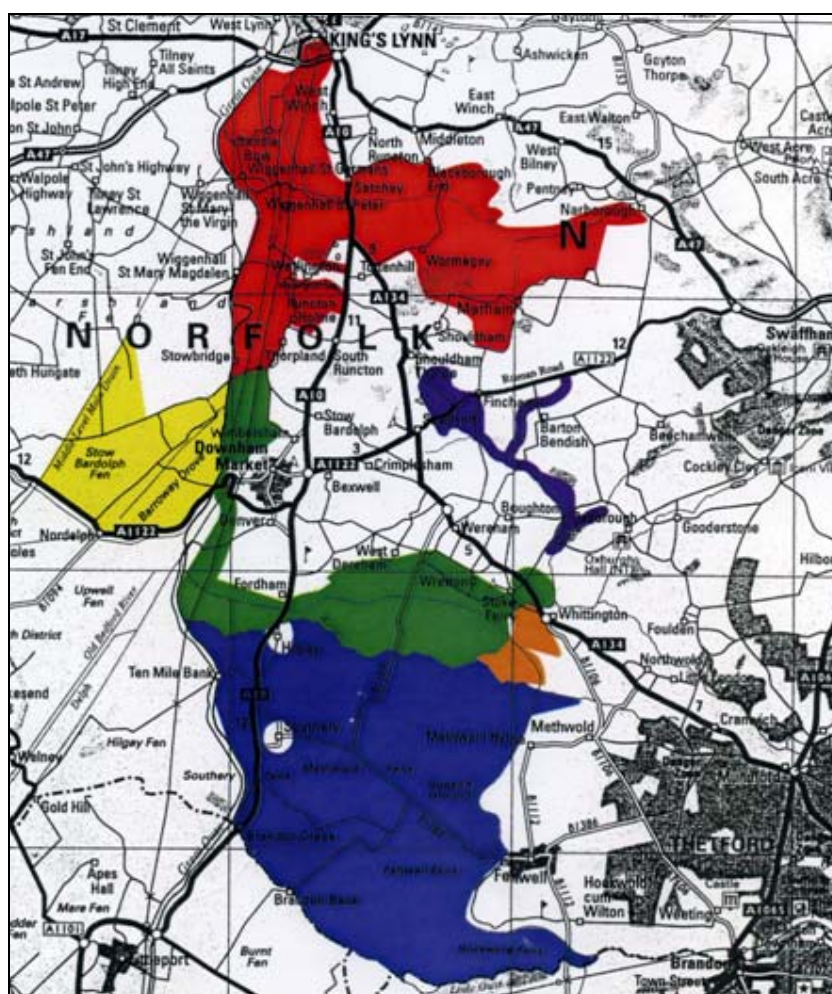


Figure 1: Downham Market Group of Internal Drainage Board's area

1.2 What is Biodiversity?

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

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

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

1.3 The Importance of Conserving Biodiversity

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

- Supply of ecosystem services – water, nutrients, climate change mitigation, pollination
- Life resources – food, medicine, energy and raw materials
- Improved health and well-being
- Landscape and cultural distinctiveness
- Direct economic benefits from biodiversity resources and ‘added value’ through local economic activity and tourism
- Educational, recreational and amenity resources

1.4 The Biodiversity Action Planning Framework

This IDB Biodiversity Action Plan is part of a much larger biodiversity framework that encompasses international, national and local levels of biodiversity action planning and conservation.

1.5 Biodiversity – The International Context

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

The Rio Convention includes a global commitment to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level (www.biodiv.org/convention/default.html). The 2002 World Summit in Johannesburg on Sustainable Development subsequently endorsed this target.

1.6 Biodiversity – The National Context

The UK Biodiversity Action Plan (UK BAP) is the UK commitment to Article 6A of the Rio Convention on Biological Diversity. It describes the UK's priority species and habitats, and seeks to benefit 65 priority habitats and 1149 species in total. It identifies other key areas for action such as the building of partnerships for conserving biodiversity and gathering vital biodiversity data.

In England, *Working with the Grain of Nature* sets out the Government's strategy for conserving and enhancing biological diversity, and establishes programmes of action for integrating biodiversity into policy and planning for key sectors, together with appropriate targets and indicators. The Strategy has a Water and Wetlands Working Group and an associated programme of action that includes:

- Integrating biodiversity into whole-catchment management
- Achieving net gain in water and wetland BAP priority habitats through Water Level Management Plans, Catchment Flood Management Plans, and sustainable flood management approaches

1.7 Local Biodiversity Action Plans

For the UK Biodiversity Action Plan (BAP) to be implemented successfully it requires some means of ensuring that the national strategy is translated into effective action at the local level. The UK targets for the management, enhancement, restoration, and creation of habitats and species populations have therefore been translated into targets in Local Biodiversity Action Plans (LBAPs), which tend to operate at the county level.

1.8 Internal Drainage Boards and Biodiversity

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

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

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

This IDB Biodiversity Action Plan has been produced to help fulfil these requirements and seeks to set out targets and actions that complement the UK Biodiversity Action Plan and Local Biodiversity Action Plans.

1.9 The Aims of the IDB Biodiversity Action Plan

The aims of this IDB BAP are:

- To ensure that habitat and species targets from the UK Biodiversity Action Plan and the local LBAP are translated into effective action within the drainage district
- To identify targets for other habitats and species of local importance within the drainage district
- To develop effective local partnerships to ensure that programs for biodiversity conservation are maintained in the long term
- To raise awareness within the IDB and locally of the need for biodiversity conservation, and to provide guidance to landowners, occupiers and their representatives on biodiversity and inland water management
- To ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations, and
- To monitor and report on progress in biodiversity conservation.

2 THE IDB BAP PROCESS

2.1 The Biodiversity Audit

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

2.2 Evaluating and Prioritising Habitats and Species

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

Further habitats and species, together with additional targets and actions, may be added in the future, as knowledge is improved and delivery of the IDB BAP is reviewed.

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

2.3 Setting Objectives, Targets and Indicators

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

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). The targets are ambitious, but are also considered to be proportionate and practicable given the resources available.

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

2.4 Implementation

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

2.5 Monitoring

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

2.6 Reporting and Reviewing Progress

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

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

3 THE BIODIVERSITY AUDIT

3.1 Introduction

The following Sections 4, 5 and 6 summarise the results of the Biodiversity Audit, undertaken in 2008-09. Section 4 provides information about the drainage district and a list of the nature conservation sites that occur within or bordering its boundaries. Sections 5 and 6 list respectively the habitats and species occurring within the district that are of potential importance to the IDB.

3.2 Local Biodiversity Action Plans

The following Local Biodiversity Action Plan covers the IDB's drainage district:

Norfolk Biodiversity Action Plan

3.3 IDB Biodiversity Audit Boundary

The Biodiversity Audit covers the entire district of the IDB, as shown in Figure 1. Where data has been obtained that shows a record of a species in a 1km square or 10km square which the district wholly or partially covers, this has been included in the area of the audit.

3.4 Sources of Data - Habitats

Information on habitats of relevance occurring within the drainage district was obtained from the following sources:

Norfolk Ecological Network (Land 2006) identifies core biodiversity areas in Norfolk, including a set of maps for priority BAP habitats.

Norfolk Wildlife Trust holds a database of County Wildlife Sites (CWS)

www.norfolkwildlifetrust.org.uk

Information about SSSIs was obtained from the Natural England web site at www.english-nature.org.uk

3.5 Sources of Data - Species

Information on species of relevance occurring within the drainage district was obtained from the following sources:

Norfolk Biodiversity Information Service (NBIS) www.nbis.org.uk

Norfolk Wildlife Trust (NWT) database

National Biodiversity Network (NBN) Gateway www.searchnbn.net

4 NATURE CONSERVATION SITES

4.1 The Drainage District

The drainage district covers an area of 232.9km² and contains 356km of IDB-maintained watercourses. It is located in Norfolk within the Local Authority of Borough Council of Kings Lynn and West Norfolk.

4.2 Geology

The District covers three Joint Character Areas (JCAs), with the south of the area in the Fens and the north in northwest Norfolk (see Map 2 on page 48). These JCAs summarise the underlying geology of each landscape type:

The Fens (JCA 46) comprises an underlying geology of a combination of post-glacial alluvium and freshwater clay and post-Roman marine clays. The soils over the central and coastal fens comprise rich, fertile, stoneless calcareous, silty soils, while inland are swathes of dark friable fen peat.

In northwest Norfolk, JCA 76 is characterised by a shallow dip slope of a Chalk escarpment which slopes west to east and forms a plateau of brown rendzina soils with a few shallow river valleys running into the Wash. An outcrop of Lower Greensand separates the coastal strip from the higher land. The soils here are variable with outcrops of brown sands and sandy gley soils contrasting the alluvial soils of the river valleys.

Regionally Important Geological and Geomorphological Sites (RIGS) are identified below in Table 2.

4.3 Landscape

4.3.1 Landscape Designations

There are no landscape designated areas within the Drainage District.

4.3.2 Landscape Character

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

The Downham Market Group of IDBs lies within three character areas:

Character Area 46: The Fens. This covers the area from Downham Market towards Wretton southwards and across to the Middle Level Drain. This includes rivers and channels and their associated hinterland of the Cut off Channel, River Wissey, River Great Ouse, River Little Ouse and Well Creek.

Character Area 76: North West Norfolk. This area lies west of Downham Market covering the area towards Marham and Narborough and northwards to Kings Lynn including the River Nar.

Character Area 85: Breckland. A small area based around Cockley Cley.

4.3.3 Sites and Monuments Records

The region has a total of 2288 Historic Environment Records (HERs) including 103 buildings (67 listed and 36 non-listed), 1281 locations where collections of historical artefacts have been found and 904 historical monuments.

A high volume of finds from prehistory suggest that the area was very important to early settlers. Stone Age artefacts, particularly the remains of pot boilers (fire-heated stones used to warm liquid), processed flints, hand axes and pottery fragments are common throughout the region and the settlements of Beaker people have been found around Hockwold cum Wilton.

Evidence of human activity continues into the Bronze Age in the form of ring ditch systems, round barrows, cremated human remains and artefacts such as daggers, axe heads and jet beads. Iron Age relics have also been found, including a torc in East Winch, a settlement near Barton Bendish, a mortuary enclosure at Watlington and the remains of an Iron sword and burial site near Shouldham.

Perhaps the most significant feature in the landscape is the Fen Causeway, a Roman road which stretches from Denver in the east to Peterborough in the west. The road is visible as a cropmark on aerial photographs and survives as a raised earthwork in some areas. Other remnants of Roman occupation in the area include human burial remains, jewellery and archaeological evidence of farmsteads, saltworks and settlements with pottery kilns, corn drying kilns and wells. A Roman military camp has been excavated near Barton Bendish, the remains of a temple found near Hockwold cum Wilton and a villa with adjacent bath house found in Feltwell.

Other historical points of interest include a number of Saxon burial sites, settlements and ornate metal brooches. Medieval and Post-Medieval monuments, including a rabbit warren, 13 deserted villages and earthworks indicating the remains of ridge and furrow farming systems are also present in the region, along with multiple drainage pumps, mills, canals and sea defences dating back to this era.

More modern monuments include relics of the military presence throughout the last century, with the remains of a 1st World War prisoner of war camp near Methwold and numerous 2nd World War pillboxes, airfields, gun emplacements, anti-tank barriers, bombing decoys, air raid shelters and aircraft crash sites. The routes of many old railway lines also cross West Norfolk and East Cambridgeshire.

The listed buildings in the region consist largely of houses and churches of historical value, although curiosities such as a telephone box in Shouldham, five manor houses, a Post-Medieval wheelwright's oven in East Walton and the site of St. Mary's Abbey in West Dereham also exist.

4.3.4 Tree Preservation Orders

The law on Tree Preservation Orders (TPOs) is contained within the Town and Country Planning Act 1990 in Part VIII. TPOs are made by Local Planning Authorities in respect of trees or woodlands. A list of activities prohibited from being carried out on TPO trees without the LPAs consent is set out in the Act. These include cutting down, uprooting, topping, lopping, wilful damage or destruction. Although the cutting of roots is not expressly covered it is potentially damaging and therefore also requires LPA consent.

The Act does not define the term 'tree' nor does it define a minimum size, and fruit trees may be included. A dictionary definition of a tree is a perennial plant with a self-supporting woody main stem, usually developing woody branches at some distance from the ground and growing to a considerable height and size. Similarly woodlands are not defined. The purpose of a woodland TPO is to safeguard the woodland unit as a whole, which depends on regeneration or new planting.

The Local Planning Authority (LPA) covering the Downham Market Group of IDBs is the Borough Council of Kings Lynn and West Norfolk, based in Kings Lynn. All TPOs in the District are held in registration documents at the Council Offices and mapped on an internal system. The LPA should be consulted if there is a likelihood of significant trees or woodlands being impacted by the IDB programme of works.

4.4 Statutory Nature Conservation Sites

4.4.1 International Sites

There are no internationally-designated conservation sites, such as Ramsar sites, SACs or SPAs within the Drainage District:

Table 1: International designations

Site name	Designation	Features Relevant to IDB
None		

4.4.2 National Sites

Table 2 lists the nationally-designated conservation sites found within the IDB Districts. These are shown on Map 1 on page 47.

Table 2: National designations

Site name	Designation	Features Relevant to IDB
Boughton Fen (Stringside District)	SSSI	Fen, marsh and swampland. Shallow fen peat in the River Wissey valley. Scrub is used by birds. Invertebrates important. Otters present
Hilgay Heronry (Stoke Ferry District)	SSSI	Small copse supporting breeding colony of Grey Herons. Fen nearby with drainage dyke provides ideal feeding conditions.
River Nar (East of Ouse, Nar & Polver)	SSSI	A spring-fed chalk stream and fen river joining the Great Ouse where a sluice prevent salt penetration. Rough fen, scrub, wet woodland adjacent. Kingfisher, sand martin, grey wagtail, reed warbler, teal, marsh harrier, willow and marsh tit recorded. 12 species of dragonfly (attributed as an outstanding assemblage)
Setchey SSSI (East of Ouse, Nar & Polver)	SSSI	Geological – Earth Heritage. Shows Flandrian sea-level change
Stallode Wash, Lakenheath (adjacent to Southery District)	SSSI	Washland with permanently high water and regular flooding. Grassland, mixed tall fen, reedswamp. Rare plants – water germander and marsh pea
Weeting Heath (boundary of Southery District)	SSSI	Brecks heath consisting of calcareous grassland and lichen-dominated heath. Rare plants spiked speedwell, maiden pink, purple stem cat's-tail. Arable weed reserve for rare Breckland plants including spring speedwell, Breckland speedwell, fingered speedwell, field wormwood and Spanish catchfly. Breeding stone curlew and wheatears.
Wretton Stoke Ferry District	SSSI	Geological – Earth heritage. Complex series of late Pleistocene formation. Deposits include wolf, arctic fox, bear, reindeer, bison and woolly rhinoceros.

Local Nature Reserves

There are no Local Nature Reserves, which are designated by local authorities under Section 21 of the National Parks and Access to the Countryside Act 1949, within the IDB District.

Table 3: Local designations

Site name	Designation	Features Relevant to IDB
None	None	None

4.5 Non-statutory Local Sites

A number of sites have been identified locally as being important for wildlife. Whilst these designations do not have statutory status, the sites themselves are important for their contribution to biodiversity, and planning policy requires that they are given due consideration in determining

applications. Table 4 below lists the local sites found within or bordering the IDB District. These are listed in full in Appendix 1 and shown on Map 2 on page 48.

Table 4: Non-Statutory designations

District	Designation	Features Relevant to IDB
East of Ouse, Polver & Nar IDB	21 County Wildlife Sites	Grassland, scrub, ponds, woodland dykes, hedges, fen, gravel pit, lake.
Downham & Stow Bardolph IDB	No CWS present	
Stoke Ferry IDB	5 County Wildlife Sites	Plantation, scrub, grassland, ditches, lake, fen,
Southery & District IDB	3 County Wildlife Sites	Woodland, scrub, pond, drainage channel, grassland
Stringsides IDB	8 County Wildlife Sites	Grassland, hedges, ponds, fen, woodland, scrub, stream, ditches.
Northwold IDB	2 County Wildlife Sites	Ponds, grassland, scrub

5 HABITAT AUDIT

5.1 Habitat Audit Summary

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

This list includes SSSIs and County Wildlife Sites from within the Districts and also the non-rated area. The full audit of all County Wildlife Sites is given in Appendix 1, and the distribution is shown in Map 2 on page 48.

Table 5: Habitat Audit summary

Broad Habitat Types	UK BAP Priority Habitat	Local Biodiversity Action Plan Habitat	Habitat of Importance for IDB	Location of Habitat of Importance for IDB (CWS numbered)	IDB Potential for Maintaining, Restoring or Expanding Habitat
Improved Grassland	Coastal and Floodplain grazing marsh	Coastal and Floodplain grazing marsh	Marshy grassland East of Ouse, Polver & Nar	530	Appropriate water level management
Fen Marsh and Swamp	Lowland fen	Fens	Fen, mixed fen, marsh, mire, rough fen Stringside East of Ouse, Polver & Nar Stoke Ferry Northwold	Boughton Fen SSSI 402, 404, 425, 528, 530 2125 490	Appropriate water level management
Fen Marsh and Swamp	Reedbed	Reedbeds	Reedbed	Reedbed creation at Southery (non-CWS)	Appropriate water level management Facilitate increase in overall area of habitat

Neutral grassland	Lowland meadow	Lowland meadow	Neutral unimproved grassland, grassland, neutral grassland East of Ouse, Polver & Nar Stoke Ferry Southery&District Stringsides	377, 381, 387, 390, 402, 423, 425, 431, 528 333, 2167 2165 371, 491	Help enhancement and connectivity of faunal foraging and commuting corridors where appropriate
Broadleaved, mixed and yew woodland	Lowland mixed deciduous woodland	Lowland mixed deciduous woodland	Broadleaved woodland East of Ouse, Polver & Nar Stoke Ferry Southery&District	381, 423, 424, 425, 429, 430, 434, 488, 530, 545 296 289	None
Broadleaved, mixed and yew woodland	Wet woodland	Wet woodlands	Wet Woodland East of Ouse, Polver & Nar Stringsides	River Nar SSSI and 427 490	None
	Eutrophic standing waters Ponds	Ponds	Ponds, pingos, active springs East of Ouse, Nar and Polver Southery&District Stringsides Northwold	377, 381, 387, 404, 423, 430, 434, 530, 898, 899 289 375 307	Habitat restoration by creating and maintaining buffer zones, water level management, and habitat connections with other ponds
None	None	Included within Lowland mixed deciduous woodland?	Scrub East of Ouse, Nar and	377, 402, 434, 528,	None

			Polver Stoke Ferry Southery&District Stringside Northwold	530 296, 333, 2125, 2167 289 491,494 2166	
None	None	Included within Coastal and Floodplain grazing marsh?	Ditches and dykes East of Ouse, Plover & Nar Stoke Ferry Southery&District Stringside	Hilgay Heronry SSSI 390 333, 2125 301 2025	Appropriate water level management Maintain, restore and enhance habitat where opportunities arise

5.2 Habitats of Importance for the IDB

The following section provides more information on the status and location of the habitats within the drainage district that are of importance for the IDB and may benefit from water level management or other IDB activities. Although these are identified as the key habitats with potential to be influenced by IDB activities, other habitats set out in the audit above may also benefit at a secondary level. The habitats identified are:

1. **Ditches and Dykes**
2. **Fen**
3. **Reedbed**

5.2.1 Ditches and Dykes

Description:

Drainage ditches can vary in size from small roadside ditches to wide agricultural drains which, connected together, create a linear, mainly freshwater system. Although an artificial habitat, drainage ditches and their associated banks are of high value for a broad range of wildlife contributing to overall biodiversity in the countryside.

National status and local county status:

Ditches and dykes are not a National UK BAP, but are important elements of other UK BAPs such as Coastal and Floodplain Grazing Marsh BAP and the Chalk Rivers and Streams BAP, particularly the Stringside Drain. There is currently no Norfolk Ditches and Dykes BAP. Information for the Downham Market IDB BAP has been provided by the Cambridgeshire Drainage Ditches Local BAP.

Status and locations within drainage district:

Ditches and dykes are the principal and key habitat managed and influenced by the IDB, present in all IDB districts.

Potential enhancements:

- Sympathetic ditch and dyke maintenance practices
- Modifications to bankside grass cutting management regime

- Create grassland buffers around ditches and dykes and link habitats with rough grassland
- Awareness of other associated habitats impacted by ditch and dyke management e.g.: fen, wet woodland, new wetlands
- Raise water levels and create new habitats such as reed-fringed areas
- Ditch/drain diversions to mitigate or alleviate impacts of drainage on wetland SSSIs, County Wildlife Sites and wetland creation sites and implement if appropriate

5.2.2 Fen

Description:

Fens are peatlands which receive water and nutrients from soil, rock and groundwater as well as from rainfall. Two types of fen are recognised: those where water movement through the peat or soil is vertical (topogonous fen), and those where water movement is predominantly lateral (soligenous fen). Fens are dynamic, semi-natural systems and in general, management is needed to maintain open fen communities and their associated species richness. Without appropriate management and water supply, natural processes will lead to scrub formation and succession to woodland.

National status and local county status:

Fens are included within the National UK BAP and are part of the Norfolk LBAP.

Status and locations within drainage district:

Boughton Fen SSSI located in Stringside District.

County Wildlife Sites in East of Ouse, Polver & Nar, Stoke Ferry and Stringside.

Potential enhancements:

- Manage higher water levels to retain summer wetness and help reduce scrub encroachment onto fens

5.2.3 Reedbed

Description:

Reedbeds are wetlands dominated by stands of reed *Phragmites australis* where the water table is at, or above, ground level for most of the year. They also tend to incorporate areas of open water, ditches, and areas of wet grassland and woodland also may be associated. Reedbeds are amongst the most important habitats for birds in the UK and larger sites support priority BAP species, including bittern.

National status and local county status:

Reedbeds are part of the National UK BAP and included in the Norfolk LBAP.

Status and locations within drainage district:

No designated sites although often associated with fen habitat. New habitat created by IDB work in Southery District.

Potential enhancements:

- Facilitate large reedbed creation in partnership with nature conservation organisations where opportunities arise
- Establish small dyke-based reedbeds where appropriate
- Facilitate restoration of existing reedbeds where these are in unfavourable condition

6 SPECIES AUDIT

6.1 Species Audit Summary

This species audit summary lists the BAP priority species that occur within the IDB district as identified by the information gathering exercise. Also listed are species deemed to be of local importance and/or identified in the county Local Biodiversity Action Plan that occur in the IDB district. Species that are of potential importance for the IDB, where water level management or other IDB activities may be of benefit, are identified. Finally, brief notes are included on the potential for the IDB to maintain or increase the population or range of species of importance.

Species records included below are from Norfolk Biodiversity Information Service (NBIS) and from the National Biodiversity Network Gateway (NBN). The location of species by District is given in Appendix 2 and locations in Map 3 on page 49.

Table 6: Species Audit summary

Common Name	Group	Order	Scientific Name	UK BAP Priority Species	Local Biodiversity Action Plan(s) Species	Non-BAP Species But Important in IDB District	IDB Potential for Maintaining or Increasing Species Population or Range
Brown hare	Terrestrial mammals	Terrestrial mammal	<i>Lepus europaeus</i>	Yes	Norfolk LBAP		No current potential
Brown long-eared bat	Terrestrial mammals	Terrestrial mammal	<i>Plecotus auritus</i>	Yes	Norfolk LBAP		Help ensure connectivity of foraging & commuting habitats including rough grassland margins
Hedgehog	Terrestrial mammals	Terrestrial mammal	<i>Erinaceus europaeus</i>	No	No		No current potential
Noctule bat	Terrestrial mammals	Terrestrial mammal	<i>Nyctalus noctula</i>	Yes	Norfolk LBAP		Help ensure connectivity of foraging & commuting habitats including rough grassland margins
Otter	Terrestrial mammals	Terrestrial mammal	<i>Lutra lutra</i>	Yes	Norfolk LBAP		No current potential
Red squirrel	Terrestrial mammals	Terrestrial mammal	<i>Sciurus vulgaris</i>	Yes	No		No current potential

Water vole	Terrestrial mammals	Terrestrial mammals	<i>Arvicola amphibius</i>	Yes	Norfolk LBAP		Maintain & extend distribution of current population
Harvest mouse	Terrestrial mammals	Terrestrial mammals	<i>Micromys minutus</i>	Yes	No		Help ensure maintenance and connectivity of habitat including rough grassland margins
Barn Owl	Birds	Bird	<i>Tyto alba</i>	No	No	Yes	Help ensure maintenance and connectivity of foraging habitats including rough grassland margins Increase number of potential nest sites through nestbox provision
Bittern	Birds	Bird	<i>Botaurus stellaris stellaris</i>	Yes	Norfolk LBAP		Increase potential foraging areas by creating dyke reed fringes and small reedbed patches where appropriate
Black-tailed Godwit	Birds	Bird	<i>Limosa limosa subsp. limosa</i>	Yes	No		No current potential
Common Bullfinch	Birds	Bird	<i>Pyrrhula pyrrhula subsp. pileata</i>	Yes	No		No current potential
Corn Bunting	Birds	Bird	<i>Emberiza caandra subsp. calendra</i>	Yes	Norfolk LBAP		No current potential
Grasshopper Warbler	Birds	Bird	<i>Locustella naevia</i>	No	No		No current potential
Grey Partridge	Birds	Bird	<i>Perdix perdix</i>	Yes	Norfolk LBAP		No current potential
Hawfinch	Birds	Bird	<i>Coccothraustes coccothraustes</i>	Yes	No		No current potential
Hen Harrier	Birds	Bird	<i>Circus cyaneus</i>	No	No		No current potential

Herring Gull	Birds	Bird	<i>Larus argentatus subsp. argenteus</i>	Yes	No		No current potential
Kingfisher	Birds	Bird	<i>Alcedo atthis</i>	No	No		No current potential
Lapwing (Northern)	Birds	Bird	<i>Vanellus vanellus</i>	Yes	No		No current potential
Lesser Spotted Woodpecker	Birds	Bird	<i>Dendrocopos minor subsp. comminutus</i>	Yes	No		No current potential
Linnet (Common)	Birds	Bird	<i>Carduelis cannabina</i>	Yes	No		No current potential
Marsh Tit	Birds	Bird	<i>Poecile palustris</i>	Yes	No		No current potential
Nightingale	Birds	Bird	<i>Luscinia megarhynchos</i>	No	No	Yes	No current potential
Nightjar	Birds	Bird	<i>Caprimulgus europaeus</i>	Yes	Norfolk LBAP		No current potential
Quail	Birds	Bird	<i>Coturnix coturnix</i>	No	No		No current potential
Red-backed Shrike	Birds	Bird	<i>Lanius collurio</i>	Yes	No		No current potential
Red-necked Phalarope	Birds	Bird	<i>Phalaropus lobatus</i>	Yes	No		No current potential
Reed bunting	Birds	Bird	<i>Emberiza schoeniculus</i>	Yes	Norfolk LBAP		Increase area of potential breeding sites by creating reed fringes and reedbed where appropriate
Ring Ouzel	Birds	Bird	<i>Turdus torquatus</i>	Yes	No		No current potential
Sandwich Tern	Birds	Bird	<i>Sterna sandvicensis</i>	No	No		No current potential
Scaup	Birds	Bird	<i>Aythya marila</i>	No	No		No current potential
Song Thrush	Birds	Bird	<i>Turdus philomelos</i>	Yes	Norfolk LBAP		No current potential
Spotted Flycatcher	Birds	Bird	<i>Muscicapa striata</i>	Yes	Norfolk LBAP		No current potential

Starling (Common)	Birds	Bird	<i>Sturnus vulgaris</i>	Yes	No		No current potential
Stone-curlew	Birds	Bird	<i>Burhinus oedicnemus</i>	Yes	Norfolk LBAP		No current potential
Tree Sparrow	Birds	Bird		Yes	Norfolk LBAP		No current potential
Turtle Dove	Birds	Bird		Yes	Norfolk LBAP		No current potential
Willow Tit	Birds	Bird	<i>Poecile montanus subsp. kleinschmdti</i>	Yes	No		No current potential
Wood Lark	Birds	Bird	<i>Lullula arborea</i>	Yes	Norfolk LBAP		No current potential
Wood warbler	Birds	Bird	<i>Phylloscopus sibilatrix</i>	Yes	No		No current potential
Yellow Wagtail	Birds	Bird	<i>Motacilla flava subsp. flavissima</i>	Yes	No		No current potential
Yellowhammer	Birds	Bird	<i>Emberiza citrinella</i>	Yes	No		No current potential
Sea lamprey	Fish		<i>Petromyzon marinus</i>	Yes	No		No current potential
European Eel	Fish	Anguilliformes	<i>Anguilla anguilla</i>	Yes	No		No current potential
Smelt	Fish		<i>Osmerus eperlanus</i>	No	No		No current potential
Spined loach	Fish	Cypriniformes	<i>Cobitis taenia</i>	Yes	No		Assist with any area surveys if undertaken
Adder	Herptiles	Reptile	<i>Vipera berus</i>	Yes	No		No current potential
Common toad	Herptiles	Amphibian	<i>Bufo bufo</i>	Yes	No		Ensure connectivity of non-breeding habitat including rough grassland margins
Grass snake	Herptiles	Reptile	<i>Natrix natrix</i>	Yes	No		Ensure connectivity of habitat including rough grassland margins

Great crested newt	Herptiles	Amphibian	<i>Triturus cristatus</i>	Yes	Norfolk LBAP		Ensure connectivity of non-breeding habitat including rough grassland margins
Slow worm	Herptiles	Reptile	<i>Anguis fragilis</i>	Yes	No		Ensure connectivity of habitat including rough grassland margins
Brush-thighed seed-eater beetle	Terrestrial invertebrates	Coleoptera	<i>Harpalus froelichii</i>	Yes	Norfolk LBAP		No current potential
Depressed river mussel	Terrestrial invertebrates	Mollusca	<i>Pseudanodonta complanata</i>	Yes	Norfolk LBAP		No current potential
Desmoulin's whorl snail	Terrestrial invertebrates	Mollusca	<i>Vertigo moulinsiana</i>	Yes	Norfolk LBAP		No current potential
Large-mouthed valve snail	Terrestrial invertebrates	Mollusca	<i>Valvata macrostoma</i>	Yes	No		No current potential
White-clawed crayfish	Terrestrial invertebrates	Decapoda	<i>Austropotamobius pallipes</i>	Yes	Norfolk LBAP		No current potential
Wormwood moonshiner beetle	Terrestrial invertebrates	Coleoptera	<i>Amara fusca</i>	Yes	No		No current potential
Divided sedge	Vascular Plants	Flowering Plant	<i>Carex divisa</i>	Yes	No		No current potential
Greater water-parsnip	Vascular Plants	Flowering Plant	<i>Sium latifolium</i>	Yes	Norfolk LBAP		Assist with area survey if undertaken Extend range by re-introducing plants to suitable location
Large-celled flapwort	Non-vascular plant	Liverwort	<i>Lophozia capitata</i>	Yes	No		No current potential

Marsh stitchwort	Vascular Plants	Flowering Plant	<i>Stellaria palustris</i>	Yes	No		No current potential
Pillwort	Vascular Plants	Fern	<i>Pilularia globulifera</i>	Yes	Norfolk LBAP		No current potential

6.2 Species of Importance for the IDB

The following section provides more information on the status and location of the species within the drainage district that are of importance for the IDB and may benefit from water level management or other IDB activities. Other species identified in the audit may also benefit from identified IDB activities, and these species are highlighted within the Action Plan section. Species identified are:

1. **Barn Owl**
2. **Greater Water-parsnip**
3. **Reed Bunting**
4. **Water Vole**

6.2.1 Barn Owl

National status and local status:

Barn Owl is protected under Schedule 1 of the Wildlife and Countryside Act 1981. It is not a UK BAP or Norfolk BAP species.

Status and locations within drainage district:

Under-recorded. It breeds in Southey & District, using a disused pumping station and barn owl boxes.

Potential enhancements:

- Help ensure maintenance and connectivity of foraging corridors including rough grassland
- Install additional barn owl boxes where appropriate

6.2.2 Greater Water-parsnip

Description:

National priority BAP species. Norfolk LBAP.

A member of the carrot family of plants (Umbelliferae). A tall, hairless perennial with rigid stems and a large globe-like head of white flowers. It thrives in ditches and wet fens on the margins of open water.

National status and local status:

Classified as Nationally Scarce in Great Britain (*i.e.* it occurs in 16-100 10km squares).

Status and locations within drainage district:

The plant is known to occur in good numbers along the Ouse Washes.

Potential enhancements:

- Reduce intensity of ditch management where appropriate
- Retain higher winter water levels where appropriate
- Provide opportunities for plant to spread from existing sites if appropriate

6.2.3 Reed bunting

National status and local status:

National priority BAP species. Norfolk LBAP.

Status and locations within drainage district:

Most records from East of Ouse, Nar & Polver along River Nar and Nar Valley; One record from just outside Stringside.

Potential enhancements:

- Increase area of potential breeding sites by creating dyke reed fringes and small patches of dyke-based reedbed where appropriate

6.2.4 Water vole

National status and local status:

National priority BAP species. Norfolk LBAP.

Under the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000.

Status and locations within drainage district:

Known distribution primarily reflects survey effort to date. Water Vole is recorded most frequently in the north of the District in East of Ouse & Polver District and in good numbers in the south-western side of Southery District. Other records were found in Stoke Ferry and Downham & Stow Bardolph Districts and it is likely that Water Vole is under-recorded in most of the area (see Map 4 on page 50).

Potential enhancements:

- Decrease frequency and modify timing and method of cutting vegetation on ditch banksides and ditch clearance works
- Participation in mink management projects

7 HABITAT AND SPECIES ACTION PLANS

7.1 Habitat and Species Action Plans

The following Action Plans comprise the objectives, targets and actions that the Downham Market Group of IDBs has identified for each of its habitats and species of importance.

A Procedural Action Plan follows which identifies IDB practices that could benefit from having biodiversity input such as reviewing consent applications against the requirements of the IDB BAP.

The following sections contain action plans for each of the habitats and species that have been prioritised for action by the IDB. The plans set out the objectives, targets and actions that the IDB believes are appropriate for each. These plans will be reviewed annually and updated quinquennially.

7.2 Action Plans for the Downham Market Group of IDBs

7.2.1 Habitat Action Plans

The following Habitat Action Plans are included in the Downham Market Group of IDBs BAP:

- Ditches & dykes
- Fen
- Reedbed

7.2.2 Species Action Plans

The following Species Action Plans are included in the Downham Market Group of IDBs BAP:

- Barn Owl
- Greater Water-parsnip
- Reed Bunting
- Water Vole

7.2.3 Procedural Action Plans

The following Procedural Action Plans are included in the Downham Market Group of IDBs BAP:

- Promotion of best practice in all water level management works
- Training for plant operatives for habitats and species covered in 7.2.1 and 7.2.2

8 HABITAT ACTION PLANS

1. Ditches and Dykes

In East Anglia, drainage ditches and dykes are vital to the maintenance of high-quality agricultural land and are a characteristic feature of the Norfolk fens and farmland in north-west Norfolk. The ditches vary in size from small roadside cuts to 10m-wide agricultural drains that together may comprise a large linear freshwater system. The flow of water in the ditches is typically slow-moving and in the fenland is artificially regulated. However, many smaller drains, especially roadside verge drains carry more water in the winter months and can even be dry, especially those overlying boulder clay, during the summer. The drainage ditch network connects with streams and rivers.

Although an artificial habitat, drainage ditches and their associated banks are valuable for a broad range of wildlife, and there are many plants that are associated with ditches. For example, the Cambridgeshire Biodiversity Partnership defines ditches as of 'conservation value' as having eight or more vascular plant species present or a single Red List vascular plant species, or two Nationally Scarce Vascular plant species, or nine or more Odonata (dragonflies and damselflies) species recorded per 20m length. Other species associated with ditches include birds, amphibians, grass snake, water vole, fish, molluscs, and invertebrates such as snails and water beetles.

The Land Drainage Act 1991 (as amended 1994) places a statutory duty on the Internal Drainage Boards to further conservation where consistent with its functions.

National UK BAP Targets

There are no National UK BAP targets for ditches and dykes.

Local Biodiversity Action Plan Targets

A Norfolk LBAP for drainage ditches and dykes is not available, and therefore the LBAP targets for Cambridgeshire have been referred to for use here.

Five-year targets:

- Bring 50% of drainage ditches within current SSSIs into favourable management
- Bring 30km of key drainage ditches of conservation value (outside statutory SSSIs) into favourable management

Ten-year targets:

- Bring all drainage ditches within current (as of 1999) SSSIs into favourable management
- Bring 60km of key drainage ditches of conservation value (outside statutory SSSIs) into favourable management

Local Status

Ditches are a key feature of the arable landscape, creating linear habitat between farmed fields. Water levels are retained at managed levels as the network is linked to drainage pumps. In-drain vegetation, either in the water, or as emergent plants on the waters' edge provides additional habitat for invertebrates, and other species depending on diverse wetland habitats. Where buffer margins and/or shrubs/trees and scrub are retained alongside or close to drainage ditches the habitat value is enhanced.

Ditches are also a component of grazing marshes (or marshy grassland) which is defined as 'periodically inundated pasture, or meadow with ditches which maintain the water level, containing standing brackish or fresh water'. The ditches are often especially rich in plants and invertebrates. Grazing marshes are also of importance for both breeding and wintering bird populations.

Status within the Drainage District

The Biodiversity Audit identified 356km of ditches managed directly by the IDB district. It is not known if this is an upward or downward trend over the last 10 years.

The drainage ditches create an interconnected network of freshwater habitat becoming brackish towards the Wash. Water from agricultural land, moves through the drainage ditch system towards the strategically positioned pumping stations, where water is pumped out into the relief channels and rivers, finally making its way out into the Wash. The ditches are maintained on an annual cycle, with bank side vegetation being cut on a large scale rotation, and water weeds being removed periodically to prevent ditches choking up.

There are no indications of recent changes in the extent and quality of this habitat within the drainage district.

IDB Objectives and Targets

1. Help collate improved information on ditches with potential for enhanced ditch features in order to prioritise conservation work
2. Develop practical implementation of techniques for enhanced nature conservation management

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
DD1	Identify 5km of drainage ditches within each District where nature conservation quality is maintained and where possible enhanced via modifications to maintenance practices and regimes	DD1.1	Identify areas where reed-fringes and small reed patches along watercourses can be created and maintained and implement	Landowner, Norfolk Wildlife Trust	2014	Channel length	Annual and five-yearly report
		DD1.2	Identify ditches/dykes (or sections of) where rotational cutting of bankside and water plants can be undertaken and implement	Landowner, Norfolk Wildlife Trust	2014	Channel length	Annual and five-yearly report
		DD1.3	Identify opportunities for reducing the frequency and intensity of ditches/dykes management (or sections of) and implement	Landowner, Norfolk Wildlife Trust	2014	Channel length	Annual and five-yearly report
		DD1.4	Identify opportunities for creating rough grassland buffer zones around ditches/dykes and link with existing corridors of rough grassland and other habitats	Landowner, Norfolk Wildlife Trust	Annual	Channel length	Annual and five-yearly report

		DD1.5	Assess feasibility of potential ditch/drain diversions to mitigate or alleviate impacts of drainage on wetland SSSIs, County Wildlife Sites and wetland creation sites and implement if appropriate	Landowner, Norfolk Wildlife Trust	2014	Channel length	Annual and five-yearly report
		DD1.6	Identify opportunities to raise water levels in IDB maintained ditches and dykes where these are associated with wetland SSSI's, County Wildlife Sites and wetland creation sites and implement if appropriate	Landowner, Norfolk Wildlife Trust	2014	Channel length	Annual and five-yearly report

Associated Species

Bittern, Reed bunting, Greater Water-parsnip, Water Vole, Otter, Harvest Mouse, Spined Loach, European Eel

2. Fen

National UK BAP Targets

- Identify priority fen sites requiring rehabilitation and initiate works
- Ensure appropriate water quality and quantity for the continued functioning of SSSI fens

Local Biodiversity Action Plan Targets

- Identify Norfolk fen sites in critical need of rehabilitation and initiate restoration by 2010
- Ensure appropriate water quality and quantity for the continued existence of all Norfolk SSSI fens by 2010
- Complete restoration of Norfolk fen sites by 2010
- Identify non-SSSI fens for restoration by 2005 and initiate restoration plans.

Local Status

Norfolk is particularly rich in fens. The Broads are has around 5,000ha of rich-fen habitat, mostly within the floodplain. Around 350ha of poor fen is found in west Norfolk at Roydon Common and Dersingham Bog SSSIs.

Status within the Drainage District

SSSI fen sites are located at Boughton Fen in Stringside. Fen habitat on CWS were also identified in East of Ouse, Polver & Nar, Stoke Ferry and Stringside.

IDB Objectives and Targets

1. The safeguarding and appropriate management of County Wildlife Site and SSSI fens and their associated species.

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
F1	Ensure IDB work supports continued ecological functioning of seven Fen County Wildlife Sites & one Fen SSSI & contributes towards their favourable condition	F 1.1	Incorporate measures for management of fen biodiversity into maintenance and capital works programmes	Norfolk Wildlife Trust, Norfolk Biodiversity Partnership	2014	Fen site work incorporated into programmes	Annual and five-yearly report
		F1.2	Consider feasibility of potential ditch/drain diversions to mitigate or alleviate impacts of drainage on fen sites and implement if appropriate	Norfolk Wildlife Trust, Norfolk Biodiversity Partnership	2014	Channel length	Annual and five-yearly report

		F1.3	Identify opportunities to raise water levels in IDB maintained ditches and dykes where these are associated with seven Fen County Wildlife Sites & one Fen SSSI and implement if appropriate	Norfolk Wildlife Trust, Norfolk Biodiversity Partnership	2014	Number of sites where water levels raised	Annual and five-yearly report
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Associated Species

Water Vole, Harvest Mouse, Reed Bunting

3. Reedbed

National UK BAP Targets

Identify and rehabilitate priority areas of existing reedbed (targeting those of 2ha or more) by 2000 and maintain thereafter by active management
Create 1200ha of new reedbed (in blocks of at least 20ha) on land of low conservation interest by 2010.

Local Biodiversity Action Plan Targets

- Maintain the existing area and quality of reedbeds
- Identify and rehabilitate priority areas of existing reedbeds which are not currently in favourable condition status by 2010
- Create new reedbeds to replace those likely to be lost through changes to coastal management
- Create an additional 600ha of new reedbed on areas of low nature conservation interest and away from threat of sea level rise by 2010.

Local Status

The RSPB Reedbed inventory lists around 1,540ha of reedbed in Norfolk, which is about 30% of the UK resource. The largest resource of sites covering over 20ha are mainly in the Broads and on the north Norfolk coast. Locally to the IDB District, East Walton Common has a large reed bed of over 14ha.

Status within the Drainage District

No designated sites were identified in the District, but reedbeds are often associated with fen habitats. New reedbed habitat has been created in Southey & District.

IDB Objectives and Targets

1. Creation of areas of reedbed

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
R1.	Create new areas of reedbed as opportunities arise	R 1.1	Identify where in capital programmes, areas of reedbed can be created	Norfolk Wildlife Trust	2014	Areas for creation identified	Annual and five-yearly report
		R 1.2	Facilitate creation of new reedbeds as part of Environment Agency's Regional Habitat Creation Programme (RHCP)	Norfolk Wildlife Trust Environment Agency, Natural England	2014	Areas of reedbed identified and created	Annual and five-yearly report

R.2	Create dyke/ditch-based reedbeds	R2.1	Identify opportunities to create new small reedbeds or patches of reed in dykes or ditches and implement if appropriate	Norfolk Wildlife Trust Environment Agency	2014	Area of reedbed identified and created	Report in year of completion and in five-year report
R.3	Ensure IDB work supports continued ecological functioning of reedbed sites & contributes towards their favourable condition	R3.1	Facilitate restoration of existing reedbeds where these are in unfavourable condition	Norfolk Wildlife Trust Environment Agency	2014	Area of reedbed identified and restored	Annual and five-yearly report

Associated Species

Bittern, Water Vole, Harvest Mouse, Otter, Reed Bunting, European Eel

9. SPECIES ACTION PLANS

1. Barn Owl

Legal Protection Status

The Barn Owl is listed in Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. It is protected under Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations 1994, and Schedule 5 of the Wildlife and Countryside Act 1981.

National UK BAP Targets

Barn Owl is not a National BAP species

Local Biodiversity Action Plan Targets

There are no Local BAP targets for Barn Owl.

Local Status

Barn Owl is known to hunt around rough grassland corridors, some of which are present alongside the banks of rivers and ditches. Creating an enhanced network of these corridors would provide new habitat and link with other habitats from farm-to-farm.

Nesting opportunities are presented in disused buildings, sheds and barns. Drainage pump houses are included here, and there are records for this within the District. Provision of artificial Barn Owl boxes linked to grassland corridors enhances the breeding opportunities.

Status within the Drainage District

The Biodiversity Audit has identified a minimum of two locations for this species in the drainage district. A trend has not been identified, but survey and records will assist in determining the benefits of enhanced management and provision.

Barn Owl continued

Objectives and Targets

1. Maintain and, where appropriate and practical, enhance the foraging and breeding habitat for Barn Owl
2. Increase the provision of nest boxes within the IDB District

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
BO1	Facilitate the creation, maintenance, enhancement and connectivity of existing Barn Owl habitat	BO 1.1	Provide guidance on habitat requirements for the Barn Owl for landowners and publish on web site	Norfolk Wildlife Trust, Landowners	2014	Leaflet produced and information on web site	Annual and five-yearly report
		BO 1.2	Identify opportunities for creating rough grassland buffer zones around ditches/dykes and link with existing corridors of rough grassland and other habitats			Linear extent of habitat	
BO2	Increase number of potential nest sites	BO 2.1	Provide guidance on habitat requirements for the Barn Owl for landowners and publish on web site	Norfolk Wildlife Trust, Hawk & Owl Trust	2014	Leaflet produced and information on web site	Annual and five-yearly report
		BO 2.2	Install Barn Owl nestboxes in key locations across the drainage district	Hawk & Owl Trust, Landowners	2014	At least one nest box installed in each of the 6 Districts	Report in year of completion and in five-year report
BO3	Facilitate the acquisition of information about the status of Barn Owl in the District	BO 3.1	Liaise with the Hawk & Owl Trust to undertake monitoring of nestboxes erected	Hawk & Owl Trust, Landowners	2014	Updated information on distribution and status	Annual and five-yearly report

2. Greater Water-parsnip

Legal Protection Status

Greater Water-parsnip is included in Schedule 13 of the Wildlife and Countryside Act 1981 which prohibits the unauthorised intentional uprooting of any wild plant species. Greater Water Parsnip is also described as Nationally Scarce in Great Britain (*i.e.* it is present in 16–100 10km squares).

National UK BAP Targets

Greater Water-parsnip is a National BAP. The National targets are:

- Maintain the range of Greater Water-parsnip in the UK
- Ensure that viable populations are maintained at all existing sites
- Regenerate plants from the seed bank of five suitable historic sites in England by 2003
- Provide opportunities for the spread of Greater Water-parsnip from existing sites

Local Biodiversity Action Plan Targets

Local BAP targets from Greater Water-parsnip are:

- Maintain at least 20 sites for Greater Water-parsnip across its known range (Broadland fens, Broadland grazing marsh, Ouse Washes and north Norfolk coast)
- Ensure that the population remains viable at all these sites
- Provide opportunities for the spread of Greater Water-parsnip from existing sites
- Ensure the colonisation of two new sites by 2006.

Local Status

Norfolk remains one of the strongholds for Greater Water-parsnip, although there is evidence of long-standing decline. In the Broads, the River Ant is the main stronghold, with locations in grazing marsh dykes in the Halvergate area. In the west of the county there are few records, although the plant is still in good numbers on the Ouse Washes. Records on the north Norfolk coast are from Holme and Burnham Overy.

Status within the Drainage District

The Biodiversity Audit identified Greater Water-parsnip as present within the IDB Group from information held on the National Biodiversity Network (NBN) Gateway. However, the location cannot be related to a particular IDB District within the Group.

Greater Water Parsnip continued

Objectives and Targets

1. Maintain and, where appropriate and practical, enhance habitats for Greater Water-parsnip
2. Improve knowledge of distribution and status within the District

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
1	Maintain and enhance quality of existing Greater Water-parsnip habitat	GP 1.1	Ensure the requirements of Greater Water-parsnip are included at suitable sites, including appropriate ditch management regime	Plantlife, Norfolk Wildlife Trust	2014	Requirements for Greater Water-parsnip included at key sites.	Annual and five-yearly report
		GP 1.2	Help facilitate an assessment of the feasibility of reintroducing Greater Water-parsnip at suitable sites within District	Plantlife	2014	Greater Water-parsnip introduced to one site	Report in year of completion and in five-year report
2	Facilitate acquisition of information about status of Greater Water-parsnip in the District	GP 2.1	Facilitate and assist with survey across District of all possible sites to determine distribution and status	Plantlife	2014	District surveyed for Greater Water-parsnip	Report in year of completion and in five-year report

3. Reed Bunting

Legal Protection Status

All birds, their nests and eggs are protected by law under the Wildlife and Countryside Act 1981

National UK BAP Targets

Reed Bunting is a National BAP, and the targets are:

- For the UK, England and Scotland, increase the Breeding Bird Survey (BBS) index to 115% of 2003 level by 2010
- For the UK, England, Northern Ireland and Scotland, increase the percentage of occupied BBS squares to 110% of 2003 level by 2010

Local Biodiversity Action Plan Targets

The Norfolk Reed Bunting BAP has reached its final stages in September 2009. The LBAP targets are:

- Ensure a sustained recovery in numbers so that the BBS index is at least 15% higher than 2003 levels, in both wetland and farmland habitats by 2015
- Ensure the percentage of occupied BBS squares is at least 10% higher than 2003 levels in both wetland and farmland by 2015.

Local Status

The total Reed Bunting population in Norfolk is relatively unknown, but it is likely that numbers of breeding birds have declined in line with other parts of the UK. Declines are mainly due to drainage of wetland and grazing marshes and changes in agricultural practices.

Status within the Drainage District

The Biodiversity Audit has identified Reed Bunting occurring in East of Ouse, Nar & Polver and Stringside.

Objectives and Targets

1. Maintain and, where appropriate and practical, enhance and extend habitats for breeding Reed Bunting

Reed Bunting continued

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
1	Increase the extent of habitats for breeding Reed Bunting	RB 1.1	Increase area of potential breeding sites by creating reed fringes and in-dyke patches of reed where appropriate	Landowners, Norfolk Wildlife Trust	2014	Five Reed Bunting-friendly habitats created	Annual and five-yearly report
		RB 1.2	Disseminate advisory materials to landowners to encourage the provision of Reed Bunting habitats at the wetland-farmland interface	Landowners, Norfolk Wildlife Trust	2014	Landowners in key areas have knowledge of Reed Bunting habitats	Annual and five-yearly report

4. Water Vole

Legal Protection Status

Water Vole is protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This prohibits:

- injuring, killing or taking by any method
- damage, destruction or obstruction of access to any structure or place which Water Vole uses for shelter or protection
- disturbance of Water Vole whilst it is using a structure or place for that purpose.

National UK BAP Targets

Water Vole is a National BAP species. The National targets are:

- Arrest decline and maintain current distribution and status of water vole
- Restore water voles to their pre-1970 range by 2010
- Ensure management of watercourses and wetlands in order to maintain the restored population.

Local Biodiversity Action Plan Targets

Norfolk local BAP targets for Water Vole are:

- Maintain current water vole distribution and abundance
- Restore water vole populations throughout by 2010
- Ensure appropriate management of watercourses and wetlands to facilitate water vole populations.

Local Status

A survey carried out by Yaxley (Yaxley 1997 a & b) showed Water Vole to be patchily distributed in Norfolk, with a main stronghold in the Broads. Highest occupancy rates were found on the River Ant and in Broadland dykes. Other strongholds included north Norfolk coast, the northwest Norfolk coastal marshes and parts of the River Wensum. Large gaps in distribution were found in the south and west of the county where there were records twenty years previously in the 1970s; these may represent local extinctions.

Further detailed surveys have been carried out subsequent to this, including in the Waveney and Little Ouse river valleys as part of the European TEN project, which indicated the presence of water voles in good numbers in some areas of the District.

Status within the Drainage District

Water Vole is recorded most frequently in the north of the District in East of Ouse, Polver & Nar District and in good numbers in the south-western side of Southery District. Other records were found in Stoke Ferry and Downham & Stow Bardolph Districts, and it is probable that Water Vole is under recorded in most of the area.

Water Vole continued**Objectives and Targets**

1. Maintain the current distribution and abundance of Water vole in the IDB District
2. Ensure the appropriate management of ditches and dykes in order to facilitate 1 above
3. Maintain and, where appropriate and practical, enhance habitat for Water Vole
4. Improve knowledge of Water Vole distribution and status within the IDB District

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
1	Maintain and enhance quality of existing Water Vole habitat	WV1.1	Assess the feasibility of modifying ditch/dyke maintenance practices in relation to frequency, timing and method in key areas for Water Voles	Norfolk Wildlife Trust	2014	Completed assessment	Report in year of completion & in five-yearly report
		WV1.2	Draft and implement best practice manual on ditch/dyke maintenance in relation to Water Voles for IDB staff			Manual published & implemented	Five-yearly report
		WV1.3	Work with partners to ensure that information and guidance about water voles is disseminated to landowners			Information disseminated to 20 landowners in key areas	Annual and five-yearly report
2	Acquire information about the distribution and status of Water Vole in the District	WV 2.1	Facilitate and assist with surveys in key areas for Water Voles within the District	Norfolk Wildlife Trust	2014	Surveys underway in two key areas	Annual and five-yearly report

10. PROCEDURAL ACTION PLAN

Introduction

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

Objectives and Targets

This Procedural Action Plan covers overarching and cross-cutting objectives and actions that the IDB will undertake as part of the delivery of its Biodiversity Action Plans. These are:

1. Promote best practice in all drainage works
2. Improve employee biodiversity awareness
3. Introduction of training for staff and/or contractors in conservation management of drainage channels
4. Extending partnership working

Target Reference	Target	Action Reference	IDB Actions	Partners	Date	Indicators	Reporting
1.	Provide training for employees on biodiversity awareness including presence of non-native species	PA1.1	Establish programme of 1-day courses for IDB staff	Norfolk Biodiversity Partnership	2014	10 staff members trained	Annual to 2014
2	Provide training on IDB BAP and conservation management of drainage channels for all relevant staff	PA2.1	Establish programme of 1-day courses for IDB staff	Norfolk Wildlife Trust	2014	10 staff members trained	Annual to 2014
		PA2.2	Establish suitable training for contractors' staff	Contractors	2014	5 Contractors covered	Annual to 2014
3	Set up links to Norfolk Biodiversity Partnership by reporting on LBAP	PA3.1	Make links with key partners through Norfolk Biodiversity Partnership	Norfolk Biodiversity Partnership, Norfolk Wildlife Trust	2014	Annual update on progress	Annual to 2014

11. IMPLEMENTATION

8.1 Implementation

The Downham Market Groups of IDBs Biodiversity Action Plan will be adopted through the Board meetings and appropriate actions adopted generally for all six Districts, or individually, as appropriate. Funds for adopted projects will be determined at Board meetings with members taking on responsibility for ensuring delivery of actions.

Activity will be reported back to IDB Board meetings on an annual basis and accumulated into an annual Group report. This report will be summarised for the Norfolk Biodiversity Partnership as set out in PA3.1.

All Actions and Targets will be reviewed on a five year basis.

There are several ways in which the LBAP can be implemented:

- (a) Maintenance programmes can implement the BAP by ensuring that maintenance plans take into account action which will enhance the works for key BAP habitats and species. Examples include decisions to manage ditches and banks on an alternate basis to promote Water Vole habitat or to provide rough grassland for small mammals for Barn Owls, or timing of operations to suit annual life cycles of species *e.g.*: cutting long vegetation where Greater Water-parsnip is present later in the season to preserve seed sources.
- (b) Capital works provide good opportunities for incorporating BAP elements. New buildings, such as pumping stations can incorporate Barn Owl boxes, with local improvements to habitat such as leaving areas of rough grassland. New wetland areas can be incorporated into ditch schemes, bringing in new areas of reedbed and providing ditch structures to promote vegetation variety, promoting space for reed bunting.
- (c) Contractors can be engaged in the works by having information about where the key areas for biodiversity works are required and how to carry out these works. Implementing training programmes for main contractors as well as IDB staff will assist in implementing this target.
- (d) The key partners for the Downham Market Group of IDBs are also associated with the Norfolk Biodiversity Partnership, namely Norfolk Wildlife Trust, Farming & Wildlife Advisory Group (FWAG), Environment Agency and Natural England. The Partnership has both Wetland and Waterbody Topic Groups and it will be important that these two groups are aware of the IDB BAP and involved in assisting in its implementation.

Once the IDB BAP has been agreed by all parties it will be published on the web site with an annual report of progress.

12. MONITORING

Monitoring of action plan targets and indicators will be organised and conducted by reference to the following table. The table will be used to draw together an annual review of achievements and identify where further action is required.

Action Reference	IDB Actions	Indicator	Report
Ditches			
DD1.1	Identify areas where reed-fringes and small reed patches along watercourses can be created and maintained and implement	Channel length	Annual and five-yearly report
DD1.2	Identify ditches/dykes (or sections of) where rotational cutting of bankside and water plants can be undertaken and implement	Channel length	Annual and five-yearly report
DD1.3	Identify opportunities for reducing the frequency and intensity of ditches/dykes management (or sections of) and implement	Channel length	Annual and five-yearly report
DD1.4	Identify opportunities for creating rough grassland buffer zones around ditches/dykes and link with existing corridors of rough grassland and other habitats	Channel length	Annual and five-yearly report
DD1.5	Assess feasibility of potential ditch/drain diversions to mitigate or alleviate impacts of drainage on wetland SSSIs, County Wildlife Sites and wetland creation sites and implement if appropriate	Channel length	Annual and five-yearly report
DD1.6	Identify opportunities to raise water levels in IDB maintained ditches and dykes where these are associated with wetland SSSI's, County Wildlife Sites and wetland creation sites and implement if appropriate	Channel length	Annual and five-yearly report
Fens			
F 1.1	Incorporate measures for management of fen biodiversity into maintenance and capital works programmes	Fen site work incorporated into programmes	Annual and five-yearly report
F1.2	Consider feasibility of potential ditch/drain diversions to mitigate or alleviate impacts of drainage on fen sites and implement if appropriate	Channel length	Annual and five-yearly report
F1.3	Identify opportunities to raise water levels in IDB maintained ditches and dykes where these are associated with seven Fen County Wildlife Sites & one Fen SSSI and implement if appropriate	Number of sites where water levels raised	Annual and five-yearly report
Reedbeds			
R 1.1	Identify where in capital programmes, areas of reedbed can be created	Areas for creation identified	Annual and five-yearly report
R 1.2	Facilitate creation of new reedbeds as part of Environment Agency's Regional Habitat Creation Programme (RHCP)	Areas of reedbed identified and created	Annual and five-yearly report

R2.1	Identify opportunities to create new small reedbeds or patches of reed in dykes or ditches and implement if appropriate	Area of reedbed identified and created	Report in year of completion and in five-year report
R3.1	Facilitate restoration of existing reedbeds where these are in unfavourable condition	Area of reedbed identified and restored	Annual and five-yearly report
Barn Owl			
BO 1.1	Provide guidance on habitat requirements for the Barn Owl for landowners and publish on web site	Leaflet produced and information on web site	Annual and five-yearly report
BO 1.2	Identify opportunities for creating rough grassland buffer zones around ditches/dykes and link with existing corridors of rough grassland and other habitats	Linear extent of habitat	Annual and five-yearly report
BO 2.1	Provide guidance on habitat requirements for the Barn Owl for landowners and publish on web site	Leaflet produced and information on web site	Annual and five-yearly report
BO 2.2	Install Barn Owl nest boxes in key locations across the drainage district	At least one nest box installed in each of the 6 Districts	Report in year of completion and in five-year report
BO 3.1	Liaise with the Hawk & Owl Trust to undertake monitoring of nest boxes	Updated information on distribution and status	Annual and five-yearly report
Greater Water-parsnip			
GP 1.1	Ensure the requirements of Greater Water-parsnip are included at suitable sites, including appropriate ditch management regime	Requirements for Greater Water-parsnip included at key sites.	Annual and five-yearly report
GP 1.2	Help facilitate an assessment of the feasibility of reintroducing Greater Water-parsnip at suitable sites within District	Greater Water-parsnip introduced to one site	Report in year of completion and in five-year report
GP 2.1	Facilitate and assist with survey across District of all possible sites to determine distribution and status	District surveyed for Greater Water-parsnip	Report in year of completion and in five-year report
Reed bunting			
RB 1.1	Increase area of potential breeding sites by creating reed fringes and in-dyke patches of reed where appropriate	Five Reed Bunting friendly habitats created	Annual and five-yearly report
RB 1.2	Disseminate advisory materials to landowners to encourage the provision of Reed Bunting habitats at the wetland-farmland interface	Landowners in key areas have knowledge of Reed Bunting habitats	Annual and five-yearly report
Water vole			
WV1.1	Assess the feasibility of modifying ditch/dyke maintenance practices in relation to frequency, timing and method in key areas for Water Voles	Completed assessment	Report in year of completion & in five-yearly report
WV1.2	Draft and implement best practice manual on ditch/dyke maintenance in relation to Water Voles for IDB staff	Manual published & implemented	Five-yearly report
WV1.3	Work with partners to ensure that information and guidance about water voles is disseminated to landowners	Information disseminated to 20 landowners in key areas	Annual and five-yearly report

Procedural			
PA1.1	Establish programme of 1-day courses for IDB staff	10 staff members trained	Annual to 2014
PA2.1	Establish programme of 1-day courses for IDB staff	10 staff members trained	Annual to 2014
PA2.2	Establish suitable training for contractors' staff	5 Contractors covered	Annual to 2014
PA3.1	Make links with key partners through Norfolk Biodiversity Partnership	Annual update on progress	Annual to 2014
Reporting			
BARS	Add IDB BAP to BARS and update with information at regular intervals	Annual update on progress	Annual to 2014

13. REVIEWING AND REPORTING PROGRESS

Annual reporting

BAP target progress and achievements will be reported and reviewed annually by collating information on the targets as set out in Section 12. The years' work will be collated into a report to be presented to the Board which will set biodiversity work into the following year.

Reports will be forwarded to partner organisations.

A summary of annual achievements will be posted on the IDB web site.

Five year reporting

BAP target progress and achievements will be reported and reviewed every five years by summarising achievements over the period of the BAP, and reviewing targets to take forward for the next plan period (2015-2020). Special biodiversity meeting with key partners to provide the overview of the five years and set targets for next five years. This will need to be in line with any changes to the UK and Local BAP Plans and their targets.

The reviewed 2015-2020 LBAP will be posted on the IDB web site.

Biodiversity Action Reporting System (BARS)

The Biodiversity Action Reporting System is the UK's national information system that supports the planning, monitoring and reporting requirements of national, local and organisations' Biodiversity Action Plans, such as that produced by the Downham Market Groups of IDBs.

The BARS website can be found at www.ukbap-reporting.org.uk

By recording the IDB BAP onto this system, a range of detailed reports specific to the activities of the IDB plan can be generated. This will enable users of the web site to learn about the progress being made in delivering the BAP actions.