

Selby Area

Internal Drainage Board

**Biodiversity  
Action Plan**

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## Revision History

Revision Ref / Date Issued	Amendments	Issued to
Draft report September 2018		N. Everard (Clerk)
Final Report April 2019		N. Everard (Clerk)
Approval June 2019		Selby Area IDB

## Contract

This report describes work commissioned on 30 August 2018 by Selby Area IDB. Alison Briggs BSc (Hons) Env.Sc., MSc Env.Mngt: Climate Change of JBA Consulting carried out this work.

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## Purpose

This document has been prepared following review of the Selby Area Internal Drainage Board's existing Biodiversity Action Plan delivering Biodiversity 2020 aims and objectives up to and including 2023. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

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# Internal Drainage Board Biodiversity Action Plans

The Natural Environment and Rural Communities Act 2006 imposes a duty on every public body to conserve biodiversity.

Many activities of an Internal Drainage Board have benefit for biodiversity, particularly through water level management and drainage ditch maintenance work.

## 1.1 Background

Following the DEFRA Internal Drainage Board Review, an Implementation Plan was produced which committed IDBs to producing Biodiversity Action Plans (BAP) by 1st April 2010. Production of a BAP also helps IDBs fulfil their duty to conserve biodiversity under the Natural Environment and Rural Communities Act 2006. Internal Drainage boards (IDBs) also have duties regarding the environment contained in the Land Drainage Act 1991 (as amended).

By identifying habitats and species of importance nationally, regionally, or locally within the Board's District, and undertaking actions to conserve or enhance those habitats or species, with associated reporting, the Board can evidence it is undertaking those environmental duties.

Contributing to biodiversity is an important part of an IDB's role as a modern public authority. IDBs are uniquely placed to conserve and improve freshwater and wetland habitats, and to forge partnerships to ensure sustainable water level management in lowland areas:

- IDBs are, collectively, one of the biggest managers of freshwater and wetland habitats in the country and therefore have a critically important role to play in maintaining and enhancing the nation's biodiversity.
- The thousands of kilometres of IDB ditches and water courses host a major wildlife resource.
- Water level management by IDBs supports distinctive wetland habitats and characteristic landscapes.
- Hundreds of UK Biodiversity Action Plan wetland plant and animal species can be found in IDB districts – from lichens to wildflowers and from insects to mammals.
- IDB drainage districts across England contain hundreds of SSSIs and local wildlife sites.

By setting objectives and targets to conserve and enhance wetland species and habitats, IDB Biodiversity Action Plans will help to link the ongoing conservation work of IDBs to the national and local BAP targets and actions.

### Biodiversity 2020 and IDBs

The original BAP period covered 2010 to 2015, its production followed guidance and a plan template produced jointly by the Association of Drainage Authorities and Natural England. Several Boards have since undertaken a review of their original BAP, identifying what worked well and what did not. The review also highlighted numerous changes in legislation and policy governing nature conservation and wider environmental protection since production of the first BAP. Of strategic importance was the publication in 2011 of Biodiversity 2020 that sets out the Government's strategy for England's wildlife and ecosystem services together with a set of outcomes.

Following release of Biodiversity 2020: a strategy for England's wildlife and ecosystem services, Defra produced a State of Nature Report detailing the state of biodiversity in the UK. Within an IDB district the habitats of farmland, freshwater and wetland occurs, with some Boards also having coastal marsh along their boundaries. The indicators are not good; farmland birds and butterflies have declined substantially since 1970s and 1990s respectively. Of the 1064 farmland species for which data is available, 60% have decreased and 34% have decreased strongly. 14% of all farmland flowering plants are on the national Red List, 62 species in all. Many changes in farmland wildlife are linked to changes in farmland management, particularly those intended to boost productivity. Some species groups such as birds and bats have benefited from conservation action, particularly those supported through agri-environment



schemes. Despite this most farmland species have failed to recover from the declines of recent decades.

For freshwater and wetlands, being the ecosystems IDBs are most closely involved, the report was equally chilling. 57% of freshwater and wetland species for which data is available has declined, 29% of which has declined strongly. Many characteristic freshwater species have declined significantly over the last 50 years. One in ten species of the freshwater and wetland plants assessed are on recent national Red Lists and some species are threatened with global extinction. One of the large changes in freshwater and wetland wildlife is the incursion of aquatic and marginal Invasive Non-Native Species which outcompete native plants and species.

## **1.2 Review of BAP 2010-2015**

The intention of this BAP is to build on the successes of the Board's first BAP following its review and where necessary identify new targets and actions to achieve integration of biodiversity into the Board's maintenance programme in terms of both Habitat Action Plans (HABs) and Species Action Plans (SAPs).

## **1.3 Biodiversity 2020 Outcomes and Priority Actions**

In the 2007 IDB Review Implementation Plan it was agreed that IDBs would prepare Biodiversity Action Plans covering individual Board Districts. Defra is keen to see IDBs, continuing to help contribute toward Biodiversity 2020 outcomes and effectively record the biodiversity benefits generated by their activities. The 25-year Environment Plan sets out an over-arching vision for more integrated environmental delivery, but that the key elements of B2020 will be taken forward in these new plans.

IDBs are uniquely placed to conserve freshwater and wetland habitats and species and to forge partnership with land managers to ensure sustainable water level management in lowland areas. This may assist land managers in delivery of the New Farming Rules for Water.

IDBs are, collectively, one of the biggest managers of freshwater and wetland habitats in the country, operating across 10% of the land surface of England, and have a critically important role to play in conserving and enhancing biodiversity.

There are 375 Sites of Special Scientific Interest (SSSIs) located within IDB drainage districts, covering some 56,000 hectares in total and including 36,000 hectares of internationally important wetlands. IDB Water Level Management Plans (WLMPs) are helping to secure favourable condition on approximately 20,000 hectares of wetland SSSIs.

The thousands of kilometres of IDB water courses host a major wildlife resource, and water level management by IDBs helps to support distinctive wetland habitats and characteristic landscapes.

Hundreds of priority wetland plant and animal species can be found in IDB districts, from lichens to wildflowers and from insects to mammals.

The IDB contribution to the conservation and enhancement of SSSIs and areas of priority habitat is most commonly through their role as water level managers within drainage districts. While IDBs do not tend to own land-holdings of any significant size, they frequently work with land managers – including private landowners and environmental bodies, to provide the appropriate water level conditions for wetland habitats. However, direct IDB management of water courses and their vegetation can also have significant benefits for in-channel and riparian habitats, such as reedbeds, and for the species of conservation concern that utilise these habitats, such as water voles, barn owls and several rare plants and invertebrates.

The challenge set by the Government's B2020 strategy is that, by 2020, measures will be in place so that biodiversity is maintained and enhanced, further degradation has been halted and where possible, restoration is underway, helping deliver more resilient and coherent ecological networks, healthy and well-functioning ecosystems, which deliver multiple benefits for wildlife and people.

The strategy recognises that Government and its agencies do not have the capacity to deliver all this by themselves, but that a wide range of public bodies, civic organisations, non-governmental organisations, businesses, and communities can make an appropriate

contribution to the outcomes most relevant to them. The key outcomes identified in the strategy for delivery by 2020, and of most relevance to IDBs, are for habitats and species:

Better wildlife habitats with, by area, 90% of priority habitats in favourable or recovering condition and at least 50% of SSSIs in favourable condition, while maintaining at least 95% in favourable or recovering condition (**Outcome 1A**);

More, bigger, and less fragmented areas for wildlife, with no net loss of priority habitat and an increase in the overall extent of priority habitats by at least 200,000 hectares (**Outcome 1B**);

At least 17% of land and inland water, especially areas of importance for biodiversity and ecosystem services, conserved through effective, integrated and joined up approaches to safeguard biodiversity and ecosystem services including through management of our existing systems of protected areas and the establishment of nature improvement areas (**Outcome 1C**);

Restoring at least 15% of degraded ecosystems as a contribution to climate change mitigation and adaptation (**Outcome 1D**).

An overall improvement in the status of our wildlife and no further human-induced extinctions of known threatened species (**Outcome 3**).

Linked to these headline outcomes in the strategy are several supporting priority actions. Those listed below are most relevant to IDBs:

Establish more coherent and resilient ecological networks that safeguard ecosystem services for the benefit of wildlife and people (**Priority Action 1.1**).

Take targeted action for the recovery of priority species, whose conservation is not delivered through wider habitat-based and ecosystem measures (**Priority Action 1.3**).

Improve the delivery of environmental outcomes from agricultural land management practices, whilst increasing food production (**Priority Action 3.1**).

Continue to implement the Invasive Non-Native Species Framework Strategy for Great Britain (**Priority Action 3.12**).

Align measures to protect the water environment with action for biodiversity, including through the river basin planning approach under the EU Water Framework Directive (**Priority Action 3.6**).

Continue to promote approaches to flood and erosion management which conserve the natural environment and improve biodiversity (**Priority Action 3.7**).

Finally, a more general, over-arching outcome requires that, by 2020, significantly more people will be engaged in biodiversity issues, aware of its value and taking positive action (**Outcome 4**).

The B2020 framework of outcomes and priority actions provides several opportunities for IDBs, during their water level and flood risk management activities, to make a targeted contribution to biodiversity gain. It is important that the nature and scale of this effort should be practicable and proportionate but represent a meaningful and additional contribution to biodiversity. It is also important to ensure that there is a simple, efficient recording system in place to measure key features of both the IDBs' current contribution to biodiversity and any additional contribution under B2020 outcomes. Taken together, the proposals below suggest the outcomes to which IDB activities can contribute – indeed, are often already contributing – and a method for identifying and recording this effort.

**Outcome 1a and Priority Action 3.1** – IDBs already contribute significantly to Outcome 1a through their WLMP work to help achieve recovering and, ultimately, favourable condition on SSSIs and, in some cases, for priority habitat that exists outside of the SSSI network. Natural England works closely with IDBs on SSSI recovery and manages the main recording mechanism, to monitor progress toward SSSI favourable condition.

Outside of SSSIs, there may be potential for IDBs to assist projects to restore or create priority habitat areas, such as wet grassland for wading birds, by providing water level management in support of a partnership project or a land manager within a new Countryside Stewardship or existing Environmental Stewardship scheme. This contribution should ideally be listed as an action within the IDB's Biodiversity Action Plan.

IDBs can show they contribute to the conservation of priority habitats through the appropriate management of water levels together with appropriate watercourse maintenance. Creation and conservation of aquatic and terrestrial wildlife corridors within IDB systems and the subsequent improvement of habitat connectivity can assist in the delivery of Priority Action 1.1 by adding resilience to the greater wetland habitat network.

**Outcome 1b and Priority Action 1.1** – IDBs rarely have sizeable land-holdings so there is limited opportunity to contribute directly to the target for the creation of 200,000 hectares of new priority habitat. However, as indicated above, IDBs may contribute to habitat creation in a supporting role through water level management. Moreover, IDBs are well-placed to contribute to this outcome's ambition for less-fragmented habitats and to Priority Action 1.1 to establish more coherent and resilient ecological networks. IDB watercourses under appropriate conservation management can have significant benefits as wildlife corridors, improving habitat connectivity, and as wildlife refuges, adding resilience to the habitat network overall.

**Outcome 1d** – The restoration of degraded ecosystems is potentially an outcome that can benefit significantly from IDB water level management activities, which may be key to the functional restoration of floodplains and river channels and the provision of appropriate groundwater conditions for peat conservation and wetland restoration.

**Outcome 3 and Priority Actions 1.3 and 3.12** – IDB activities have significant benefits for species, notably water voles, wetland birds, aquatic plants, and a wide range of invertebrates. Management of watercourses using techniques in the Drainage Channel Biodiversity Manual can have generic habitat benefits for wildlife, while some IDBs provide bespoke management at the locations of specific rare plant or invertebrate species. The provision of barn owl nest boxes on channel banks, which provide excellent hunting grounds, is a good example of targeted IDB action. IDBs also frequently contribute to the delivery of local biodiversity action plans or projects.

The B2020 outcome and priority actions for species provide an opportunity to identify and record the species benefits already being delivered, and to spread good practice among IDBs. IDBs play a leading role in the conservation of water voles, which have declined across England as a whole but appear to thrive in IDB water courses. In addition to maintaining suitable habitat, working with partners on a targeted programme of mink trapping could make a nationally-important contribution to water vole conservation.

Indeed, managing Invasive Non-Native Species (INNS) is an important element of the work on species and restoring priority habitat. IDBs already undertake control programmes for species such as floating pennywort for both biodiversity and flood risk management purposes, and so it would be useful to ensure that this contribution is recognised under B2020 and the INNS Framework Strategy for Great Britain.

The invasive species Japanese Knotweed and Giant Hogweed are classed as 'controlled waste' and as such must be disposed of safely at a licensed landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991. Soil containing rhizome material can be regarded as a species listed under the Environmental Protection Act 1990. Economically, control of these species alongside watercourses is normally justified by an IDB, as it enables future capital works to be delivered efficiently.

Species such as Water Fern, Parrot's Feather, Floating Pennywort, Australian Swamp Stonecrop (New Zealand Pygmyweed), and Water Primrose are included in Schedule 9 of the Wildlife and Country Act 1981 and are prohibited from release into the wild. An IDB's activities will not deliberately spread these species, but appropriate machinery 'hygiene' when moving from infected sites can reduce the spread of these species. Similar measures should be considered if crayfish plague, the fungus *Aphanomyces astaci*, is present in a watercourse. For INNS, the Board target to maintain biodiversity within its District could be actioned by the workforce ensuring it follows the Check, Clean, Dry campaign, designed to limit the spread of INNS.

The Infrastructure Act 2015 provides for species control agreements and species control orders to be made by environmental authorities and for the landowner to tackle INNS. IDBs normally operate via permissive powers on land owned by others, so it is essential that an IDB is consulted when a species control agreement or order is considered so that flood risk management works are not compromised, and resources can be targeted most effectively.



A range of other species from American mink to Himalayan Balsam may be considered for control. Generally, control measures are best delivered across catchments, and these require partnerships to be effective.

IDB Biodiversity Action Plans will have often set out actions for INNS, ranging from surveillance and sharing records to delivering control strategies, possibly via a partnership.

#### **1.4 Recording IDB Biodiversity Delivery**

Several mechanisms have been used to record biodiversity information from IDBs. IDBs should be recording progress against the objectives and targets set within their Biodiversity Action Plans. Defra has used the 'IDB1 Form' to ask for information from IDBs on an annual basis. In the past, this has included requests for simple biodiversity information, such as whether the IDB had published a Biodiversity Action Plan. IDBs now report in the IDB1 on implementation of a BAP, actions taken and reporting.

## 2 Internal Drainage Board Biodiversity

Although the Government now has a strategic plan to deliver biodiversity targets, the original UK BAP lists of priority species and habitats remain, an important and valuable reference source. Notably, they have been used to help draw up statutory lists of priority species and habitats in England, as required under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006.

This Biodiversity Action Plan (BAP) has been prepared on behalf of Selby Area IDB to build on achievements and successes through implementation of its first BAP 2010-2015.

### 2.1 Introduction

This Plan identifies objectives for the conservation and enhancement of biodiversity within the drainage district over which the Board has control and it describes targets and actions which it is hoped will deliver those objectives.

The Plan will help integrate biodiversity into the Board's activities through its annual maintenance programme and capital work projects.

The action plan will help safeguard the biodiversity of the District and it is hoped implementation of this plan will contribute to achievement of local and national targets for UK Biodiversity 2020.

The Plan is a dynamic document that will be reviewed and updated regularly with a final report being delivered autumn 2023.

The plan covers the Board's entire district as shown in figure 2-1-1 with relevance to Board maintained drains and figures 2-1-2 and 2-1-3 show location of the two SSSI within the District, Eskamhorn Meadows SSSI, and Burr Closes SSSI

Figure 2-1-1: Drainage Board Area

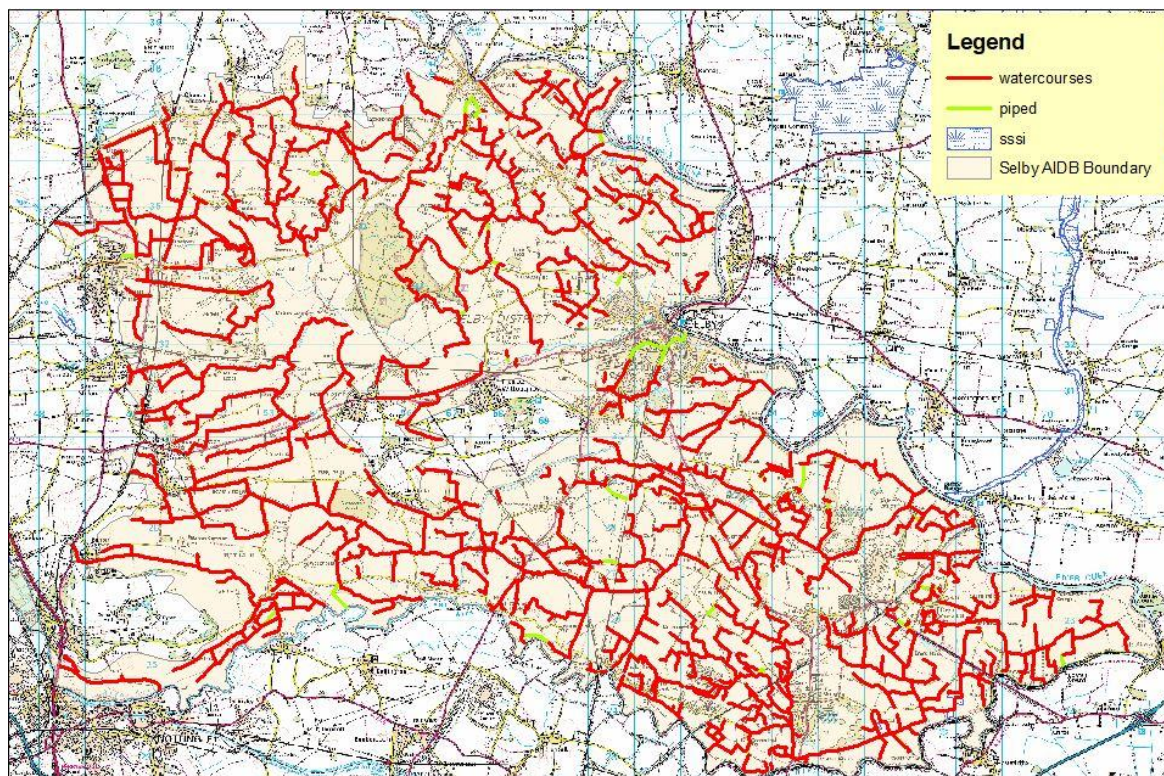




Figure 2-1-2: Eskamhorn Meadows SSSI

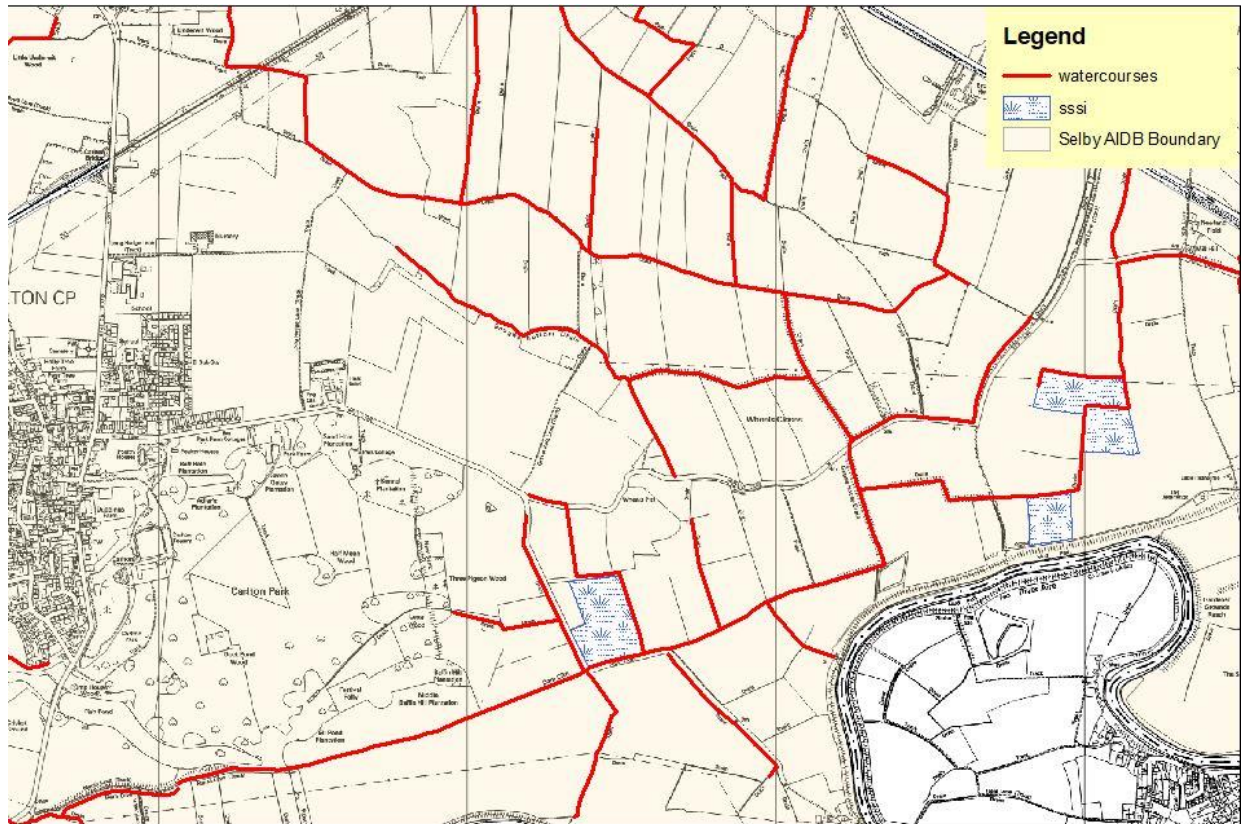
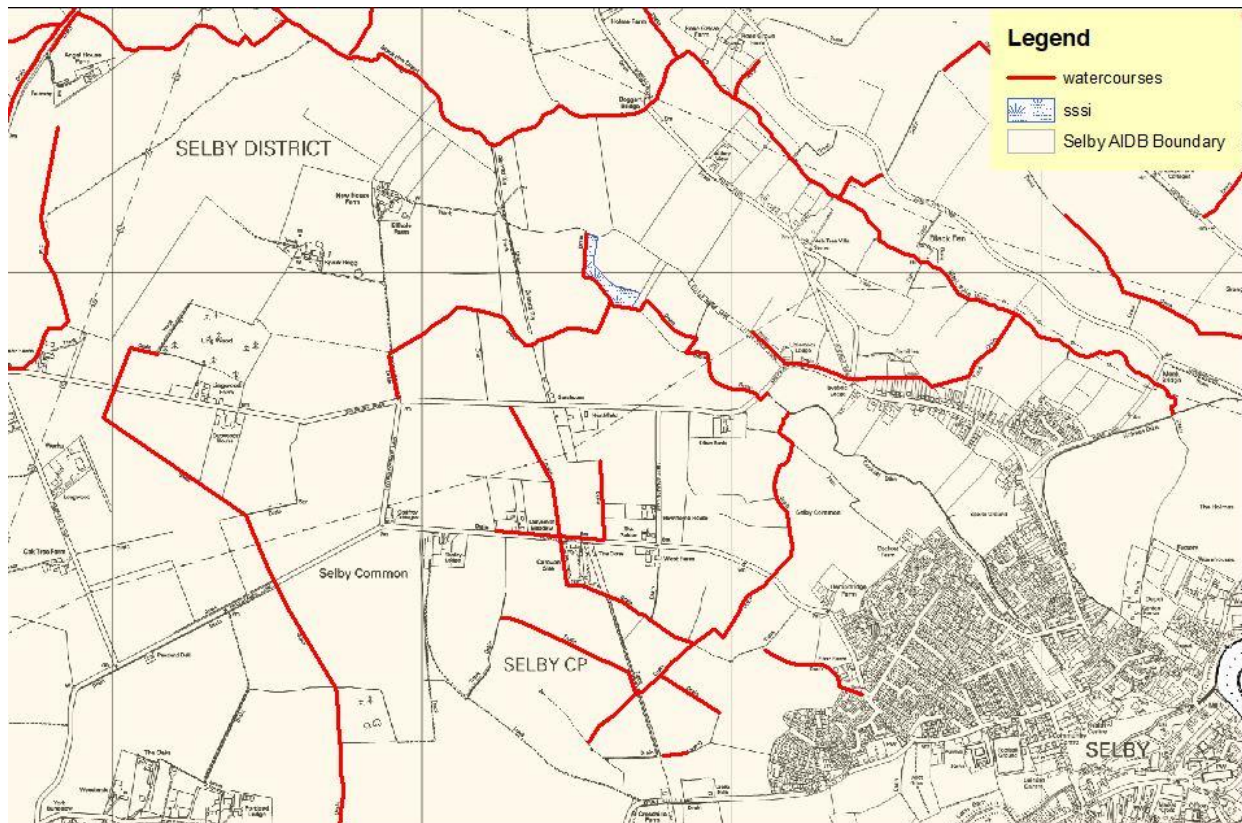


Figure 2-1-3: Burr Closes SSSI



## **2.2 Importance of Conserving Biodiversity**

Biodiversity is a valuable resource and produces a range of benefits

- Provision of ecosystem services - benefits that contribute to making human life both possible and worth living; water, clean air, nutrients, pollination
- Provisioning services - food, medicine, raw materials, genetic diversity
- Cultural services - Improved health and wellbeing
- Regulating services - climate, hazard, noise, pollination, clean air, water quality and soil
- Economic benefits of added value through local economic activity

## **2.3 Aims of Selby Area IDB DB Biodiversity Action Plan**

- To ensure habitat and species action targets from the UK BAP and Local Authority BAP are translated into effective action within the District
- Identify targets for other habitats and species of local importance within the District
- Raise awareness within the Board and locally, the need for biodiversity conservation as part of water level management
- Ensure that opportunities for conservation and enhancement of biodiversity are considered throughout all Board operations
- Monitor and report on progress in biodiversity conservation

## **3 IDB BAP process**

### **3.1 Objectives, Targets and Indicators**

The Board has agreed Habitat and Species Action Plans over which it has control as part of function and conservation objectives expressing the Board's aims for the benefit of that particular habitat or species. The targets focus Board programmes of action and identify outcomes that can be measured and monitored.



## 4 Habitat Action Plan

### 4.1 UK Broad Habitat - Standing Open Waters and Canals

#### 4.1.1 Eutrophic Standing Water

##### Physical and chemical status

Eutrophic standing waters are highly productive because plant nutrients are plentiful, either naturally or as a result of artificial enrichment. These water bodies are characterised by having dense, long-term populations of algae in mid-summer, often making the water green. Their beds are covered by dark anaerobic mud, rich in organic matter. Many lowland water bodies in the UK are now heavily polluted, with high nutrient concentrations. Eutrophic waters are most typical of hard water areas of the lowlands of southern and eastern Britain.

##### Biological status

In their natural state, eutrophic waters have high biodiversity. Planktonic algae and zooplankton are abundant in the water column, submerged vegetation is diverse and numerous species of invertebrate and fish are present. Plant assemblages differ according to geographical area and nutrient concentration but fennel-leaved pondweed (*Potamogeton pectinatus*) and spiked water-milfoil (*Myriophyllum spicatum*) are characteristic throughout the UK. Common floating-leaved plants include yellow water lily (*Nuphar lutea*) and there is often a marginal fringe of reedswamp, which is an important component of the aquatic ecosystems.

Bottom-dwelling invertebrates such as snails, dragonflies and water beetles are abundant and calcareous sites may support large populations of the native freshwater crayfish (*Austropotamobius pallipes*). Coarse fish such as roach (*Rutilus rutilus*), tench (*Tinca tinca*) and pike (*Esox lucius*) are typical of eutrophic standing waters, but salmonids also occur naturally in some. Amphibians, including the protected great crested newt (*Triturus cristatus*), are often present and the abundance of food can support internationally important bird populations.

In water bodies which are heavily enriched as a result of human activity, biodiversity is depressed because planktonic and filamentous algae (blanket-weed) increase rapidly at the expense of other aquatic organisms. Sensitive organisms, such as many of the pondweed (*Potamogeton*) and stonewort (*Chara*) species, then disappear and water bodies may reach a relatively stable but biologically impoverished state.

Larger watercourses within this habitat may contain wetland species such as reeds providing important species habitat for several birds.

#### 4.1.2 Targets and Actions

Selby Area IDB has agreed three targets for the Habitat Action Plan for Eutrophic Standing Waters.

**Target 1.** Maintain and enhance the existing habitat and species diversity of watercourses within the Drainage District (**B2020: Outcome 1C**)

##### Action:

- Ensure the appropriate management of the Selby Area IDB maintained watercourses through an Integrated Biodiversity Action Plan and Maintenance Regime by following best practice guidance in the Drainage Channel Biodiversity Manual 2008.
- Monitor known non-native invasive plant and animal species on and/or adjacent to Board maintained watercourses

**Target 2.** Record stands of Invasive Non-Native Species (INNS) on Board maintained watercourses. (**B2020: Priority Action 3.12**)

##### Action:

- record and report INN plant and animal species on and/or adjacent to IDB watercourses to GB Non-Native Species Secretariat
- Monitor stands of INNS.

**Target 3.** In wider watercourses containing significant volumes of reed (*Phragmites australis*), retain patches or stands of uncut vegetation, to encourage declining species to nest in reed such as Reed warbler (*Acrocephalus scirpaceus*) and Reed bunting (*Emberiza schoeniclus*). **(B2020: Outcome 1B, Priority Action 1.1)**

**Action:**

- Retention of patches or stands of uncut reed in wider watercourses to encourage declining species associated with wetland

#### **4.1.3 Indicators and Reporting**

**Target 1 action:**

- Length of metered watercourse maintained in accordance with environmental best practice.
- Length of watercourse surveyed for INNS and record of change in stand size

**Target 2 action:**

- Reports to the GB Non-Native Species Secretariat.

**Target 3 action:**

- Extent and number of areas of retained reed within wider watercourses

Reporting will be delivered annually to the Board

## 4.2 Unfavourable declining SSSI

IDBs can contribute significantly to Outcome 1A and 1D of Biodiversity 2020 through Water Level Management Plan work to help achieve recovering and, ultimately, favourable condition on SSSIs. Natural England works closely with IDBs on SSSI recovery and manages the main recording mechanism to monitor progress toward SSSI favourable condition. IDBs have responsibility for a WLMP action or remedy on a SSSI requiring achievement of favourable condition by 2020 (under Outcome 1a). External funding is provided for this work primarily through flood risk management Grant-in-Aid.

Where the Board is notified by Natural England of a SSSI failing to achieve favourable condition, the Board has identified three targets to be delivered by three actions

### 4.2.1 Targets and actions

**Target 1.** Preparation of Water Level Management Plan (**B2020: Outcome 1A**)

**Action:**

- Secure funding for preparation of a WLMP for SSSI in unfavourable declining condition

**Target 2.** Implementation of Water Level Management Plan (**B2020: Outcome 1A and Outcome 1D**)

**Action:**

- Submit to FCERM Project Funding, secure funding, arrange plan implementation

**Target 3.** Monitoring water levels

**Action:**

- Throughout life of WLMP

### 4.2.2 Indicators and reporting

**Target 1 action:**

- number of requests received from Natural England.

**Target 2 action:**

- number of successful Project Appraisals receiving Grant in Aid

**Target 3 action:**

- production of a hydrograph annually for length of plan following completion of work.

Reporting will be as and when the action arises and annually throughout the life of the WLMP

## 5 Species Action Plans

### 5.1 Water Vole

Water Vole (*Arvicola amphibus*) is a protected species under Section 9, Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and for which UK BAP Species Action Plan was produced as part of the UK BAP. Between years 1989-1998 there was an 88% decline in individuals in the UK, it is also vulnerable to the impacts of Invasive Non-Native Species, mainly Mink through predation. The animal itself is protected as its places of shelter or protection, which reflects that significant decline in population.

Water vole has been recorded in parts of the Selby district, and the Board is aware of water vole populations on Board maintained drains identified at Figures 5-1 to 5-3 below:

- Brown Cow Drain, Barlow
- Bishop Dyke, Barkston Ash
- Black Fen Drain, Wistow Lordship
- Lordship Lane Drain, Wistow Lordship

Figure 5-1-1 Water Vole distribution Barlow area

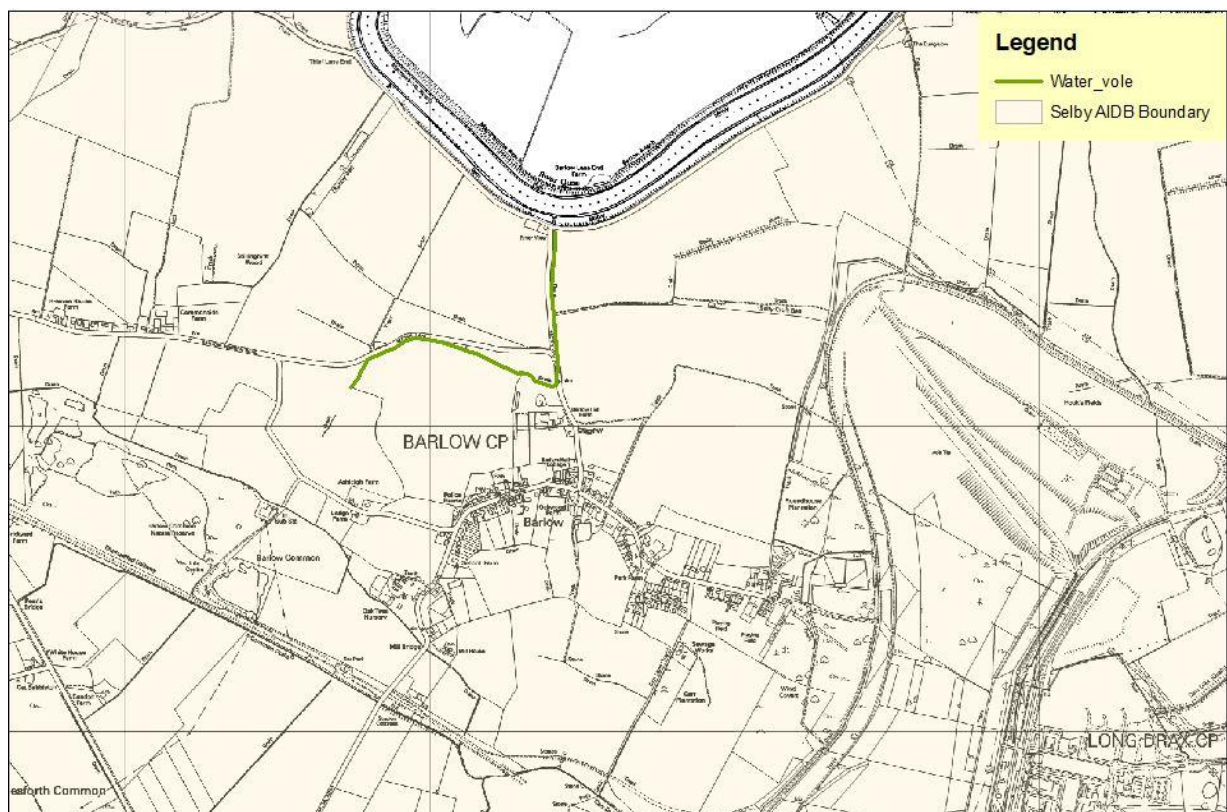




Figure 5-1-2 Water vole distribution Barkston Ash area

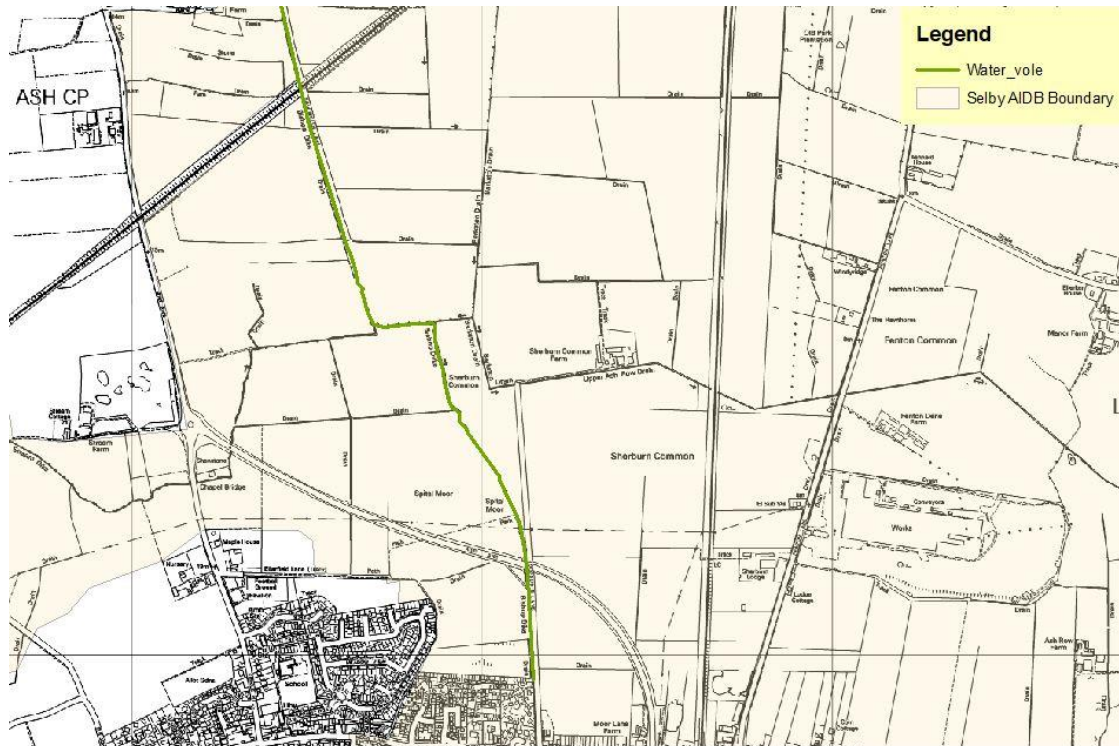
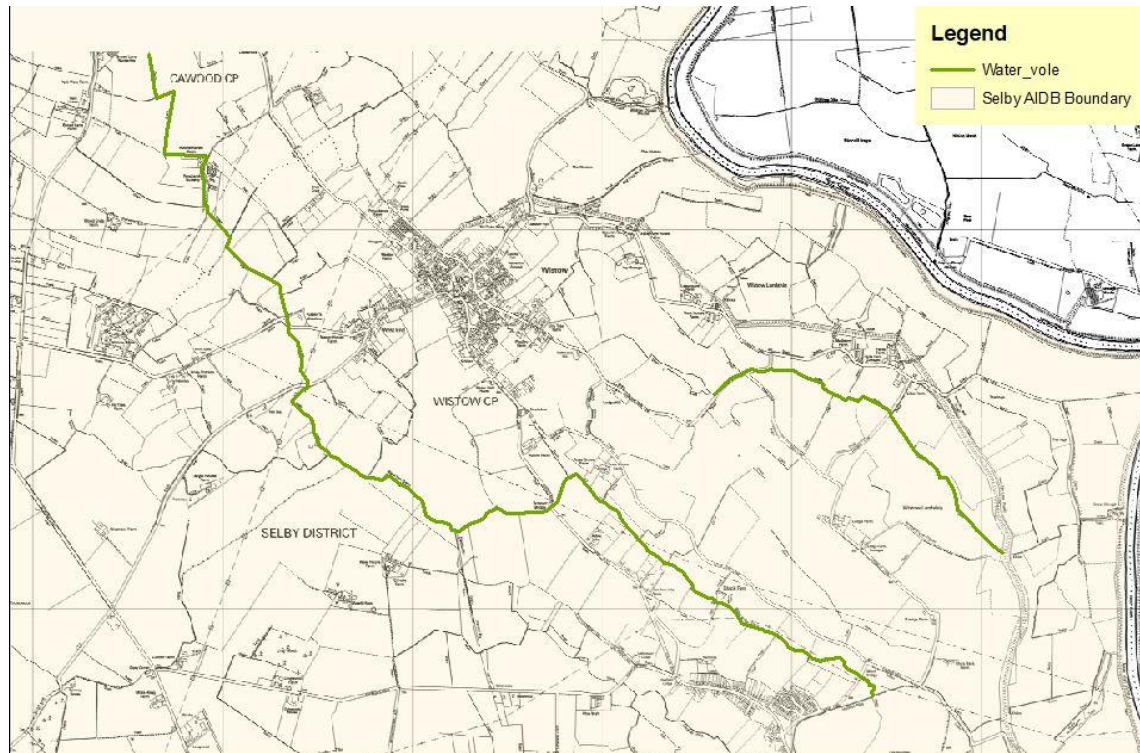


Figure 5-1-3 Water Vole distribution Wistow area



These four drains cover a length of approximately 12km, however there has been no systematic water vole surveys on all Board maintained drains and species current status is unclear.

The Board identified this species in its 2010-2015 BAP and implemented actions designed to ensure its actions did not have a detrimental effect on this species but also where possible Board actions would ensure a positive effect. Building on those actions the Board has agreed specific targets and actions for 2018-2023.



### 5.1.1 Targets and Actions

The Board has agreed three targets which will be delivered by seven actions. The targets are:

**Target 1.** Maintain and enhance suitable habitat for water vole within Board maintained drains  
(B2020: Priority Action 1.3)

**Actions:**

- ensure appropriate habitat management of IDB watercourses with known water vole populations through compliance with best practice guidance;
- review maintenance regimes and identify watercourses where mowing and weed cutting regime can be altered to enhance and increase water vole habitat in accordance with board drain maintenance priority
- provide training to IDB employees and contractors on legislation pertaining to water vole and habitat.

**Target 2.** Ensure all Board works comply with relevant legislation protecting Water Vole and its habitat

**Actions:**

- ensure water vole surveys are conducted prior to any bank improvement, drainage or other engineering works
- always undertake an environmental assessment and prepare an environmental statement to determine adverse impacts pursuant to any works requiring Notice under EIA (Land Drainage Improvement Works) Regulations 2017

**Target 3.** Monitor populations of water vole within the drainage district.

**Actions:**

- Submit all water vole records to North Yorkshire Biodiversity officer
- undertake monitoring of all key water vole colonies

### 5.1.2 Indicators and reporting

**Target 1 action:**

- Metered length of watercourse assessed
- Metered length of watercourse enhanced
- Number of employees trained

Reporting will be ongoing through the life of the plan

**Target 2 action:**

- The number of records collated

Reporting will be from 2019 onward

**Target 3 action:**

- The number of surveys undertaken
- Number of records submitted to Biological Records Centre

Reporting will be delivered annually.

## 5.2 Barn Owl

The UK BAP does not identify Barn Owl (*Tyto alba*) as a species requiring an action plan however much of the Board's district is situated within farmland to which Barn Owl is synonymous and the Board's District includes open farmland and pockets of woodland, all good hunting ground for owl. Barn owl boxes erected on pump stations or within station compounds are provided with a level of protection from vandalism, a young owl in a station compound is shown at Figure 5-2-1. In its 2010-2015 BAP, Board action to erect three Barn Owl boxes was not delivered however the Board acknowledges the positive impact on local species populations this action would achieve. Figure 5-2-1 is of a young Barn owl within a pump station compound

Figure 5-2-1: Barn Owl in a station compound



### 5.2.1 Targets and Actions

The Board agrees two targets:

**Target 1.** Enhance Barn Owl numbers within the drainage district (**B2020: Outcome 3**)

**Action:**

- Erect barn owl boxes at a minimum of three pump stations

**Target 2.** Monitor the use of Barn Owl boxes erected within the District.

**Action:**

- submit all barn owl records from the drainage district to local record centres and monitor the use of barn owl boxes once erected.

### 5.2.2 Indicators and Reporting

**Target 1 action:**

- Number of barn owl boxes erected

**Target 2 action:**

- Number of records submitted
- Number of monitoring visits

Reporting on these actions will be throughout the term of this BAP.



### 5.3 Common Toad and Common Frog

There is no UK Species Action Plans for these herpetiles however Common Toad would benefit from recognition of its habitat and management is required at the wider landscape scale both aquatic and terrestrial. Producing a Species Action Plan for Common Frog and Common Toad links into the Habitat Action Plan of Eutrophic Waters and Ponds; Figure 5-3-1 is that of Common Toad identified adjacent to an IDB maintained drain. Both animals suffer from habitat fragmentation and countering these effects at a local scale is high priority (**B2020: Outcome 3**).

Figure 5-3-1 Common Toad



#### 5.3.1 Targets and Actions

The Board has identified one target for Common Frog and Common Toad with two actions:

**Target 1.** Ensure all Board maintenance work considers the terrestrial and aquatic habitat of Common Frog and Common Toad

**Actions:**

- provide training to Board employees on the lifecycle of both species and the varying types of habitat required
- record sightings of all stages of life cycle with local biodiversity records centre.

#### 5.3.2 Indicators and reporting

**Target 1 action:**

- Number of employees trained
- Number of records submitted

Reporting will be ongoing throughout the life of the BAP

## 5.4 Eel

Eel is the subject of the Eel (England and Wales) Regulations 2000, European Eel (*Anguilla anguilla*) is Critically Endangered on the IUCN red list of threatened species. The next certification is Extinct in the Wild. IDB pump stations prohibit safe passage of eel from a pumped catchment and form a barrier to passage into the catchment. Some upstream catchments have altered considerably from that which would have existed before pump stations were built.

### 5.4.1 Targets and Actions

The Board has identified two targets for eel with a total of five actions

**Target 1.** Maintain and enhance suitable habitat for European Eel within the drainage district (B2020: Priority action 1.3)

**Actions:**

- Review maintenance regimes and identify watercourses where the desilting and weed cutting regime can be altered to enhance and increase European Eel habitat
- Where suspected sub-optimal habitat for eel undertake eel habitat suitability assessment for specific catchment

**Target 2.** Reduce the impacts of existing barriers to migration on escapement and recruitment

**Actions:**

- Secure funding to enable prioritisation of existing barriers to migration for mitigation works
- Source funding to enable mitigation works and associated pre and post project monitoring programme on existing priority structures
- Undertake mitigation works on priority structures

### 5.4.2 Indicators and reporting

The Board Target action will be shown delivered by indicators of:

**Target 1 action:**

- Length of watercourse surveyed
- Number of catchments assessed

**Target 2 action:**

- Funding secured
- Number of structures improved

All reporting will be annually or on completion of the work



## 5.5 Biodiversity at pump stations

One of the targets identified in B2020: A Strategy for England's Wildlife is to halt biodiversity loss. The Board has a general duty under Section 61 of the Land Drainage Act 1991 (as amended) to conserve and enhance biodiversity as part of function. The pumping stations managed by the Board can provide suitable habitat for a variety of species.

The Grass Snake (*Natrix natrix*) is the UK's largest reptile, some adults growing in excess of a metre in length. Grass snake is associated with water, it swims well and feeds on amphibians and fish. It is common through lowland England but has declined in numbers and range since 1900. The main threat to Grass snake is destructions of egg-laying sites and basking locations together with the loss and fragmentation of wetland habitats; Figure 5-5-1 is of a Grass Snake found basking in the sun in arisings on an IDB maintained drain.

Figure 5-5-1 Grass Snake



Invertebrate populations including beetles, spiders and other insects have declined drastically caused by a combination of factors of intensive farming practices, reduction in wildflower meadows, reduction of woodland and tidying of spaces reducing decaying wood substrate.

### 5.5.1 Targets and Actions

The Board has identified one target for general biodiversity and two actions

**Target 1.** Increase biodiversity as part of Board function (**B2020: Outcome 3**)

**Actions:**

- Provision of south facing, sunlit compost head of weed screen arisings, covered with tarpaulin or corrugated sheeting offering nesting site for grass snake
- Creation of Bug Hotels in pump station compounds by stacking old pallets with logs, and similar arisings from weed screens

### 5.5.2 Indicators and reporting

**Target 1 action:**

- Number of compost heaps constructed
- Number of compost heaps used as nesting site
- Number of bug hotels created

Reporting will be annually

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