UPPER MEDWAY INTERNAL DRAINAGE BOARD

LOWER MEDWAY INTERNAL DRAINAGE BOARD

Upper and Lower Medway Internal Drainage Board

# Biodiversity Action Plan

2021-2031

# 1. Statement

This Biodiversity Action Plan (BAP) has been prepared by the Upper and Lower Medway Internal Drainage Board in accordance with the commitment in the Implementation Plan of the Defra Internal Drainage Board Review of 2007 for internal drainage boards (IDBs) to produce their own Biodiversity Action Plans. It demonstrates the Board's commitment to fulfilling its duty as a public body to conserve and enhance biodiversity under various legislation and policy including, but not limited to, the Environment Bill (Act) 2020, the Natural Environment and Rural Communities Act 2006, the 25 Year Environment Plan and Water Framework Directive.

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

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

…… Date …….

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. Our contact details are as follows.

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Further information is available on the Board's website: www.medwayidb.co.uk

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# 2. Introduction

## 2.1. What is Biodiversity and why is it important?

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

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

- Ecosystem services including water, nutrients, climate change mitigation, flood mitigation, carbon storage and pollination;
- Life resources including food, medicine, energy and raw materials;
- Improved health and well-being;
- Landscape and cultural distinctiveness;
- Direct economic benefits from biodiversity resources and ‘added value’ through local economic activity and tourism;
- Educational, recreational and amenity resources.

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

## 2.2. Legislative Background

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

The Natural Environment and Rural Communities Act 2006 places a duty on IDBs to conserve biodiversity. The Environment Bill (Act) 2020, when enacted, extends this duty on IDBs to also enhance biodiversity and report periodically on its actions. Therefore, as a public authority, every IDB must consider what action it can take, consistently with the proper exercise of its functions, to further the conservation and enhancement of biodiversity in England.

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

- The Environment Bill (Act) 2020
- Conservation of Habitats and Species Regulations 2017
- The Eels (England and Wales) Regulations 2009
- Water Environment (Water Framework Directive) (England and Wales) Regulations 2003
- Natural Environment and Rural Communities Act 2006 (Section 40)

- The Environmental Impact Assessment (Land Drainage Improvement Works) (Amendment) Regulations 2017
- Land Drainage Act 1994
- Wildlife and Countryside Act 1981 (as amended)
- The Countryside and Rights of Way Act 2000
- The Protection of Badgers Act 1992
- Flood and Water Management Act 2010
- Salmon and Freshwater Fisheries Act 1975

## 2.3. Policy & Strategic Background

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

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

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

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

## 2.4. Purpose

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

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

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

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

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

## 2.5. Vision

The IDB's vision is: To manage drainage districts that constantly seek to improve upon the creation, maintenance and ongoing success of biodiverse habitats and species. Through interaction from Board to Work Force we strive to build upon the work of the past to enhance the environment of the future.

## 2.6. Aims

The aims of the Upper and Lower Medway IDB's BAP are:

- To ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations
- To enable more effective monitoring and reporting of progress and outcomes;
- To ensure that Priority species and habitats receive effective action within defined targets within the drainage district;
- To identify targets and appropriate actions for other habitats and species of local importance within the drainage district. This includes invasive non- native species;
- To contribute to local environmental partnerships such as the Local Nature Partnership to ensure that programmes and priorities for biodiversity conservation are aligned and maintained in the long term;
- To raise awareness within the IDBs and locally of the need for biodiversity conservation, and to communicate with the local and wider community what actions the IDBs are undertaking to support biodiversity.

# 3. The IDB BAP Process

## 3.1. The Biodiversity Audit

The Upper and Lower Medway IDBs have conducted a biodiversity audit of its drainage district (Figure 1) and identified those habitats and species that would benefit from particular management or actions by the IDBs.

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

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

## 3.2. Objectives, Targets and Actions

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

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

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

## 3.3. Monitoring and Reporting

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

The frequency and type of information reported is also defined by the Plan and includes the publication of progress reports in the public domain via the IDB's website and in accordance with the duty set out in the Environment (Bill) Act 2020.

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

# 4. The Biodiversity Audit

## 4.1. The Upper and Lower Medway Internal Drainage District

The drainage district is located in Kent, Surrey and Sussex.

The following outlines the key details of the District:

- Total area of the 2 drainage districts: 294km$^2$. (143km$^2$ = Upper Medway district and 151km$^2$ = Lower Medway)
- Catchment area draining to and including the District: **55,464ha**
- Area of agricultural land: **23,981ha**
- Area of other (non-agricultural) land: **31,483ha**

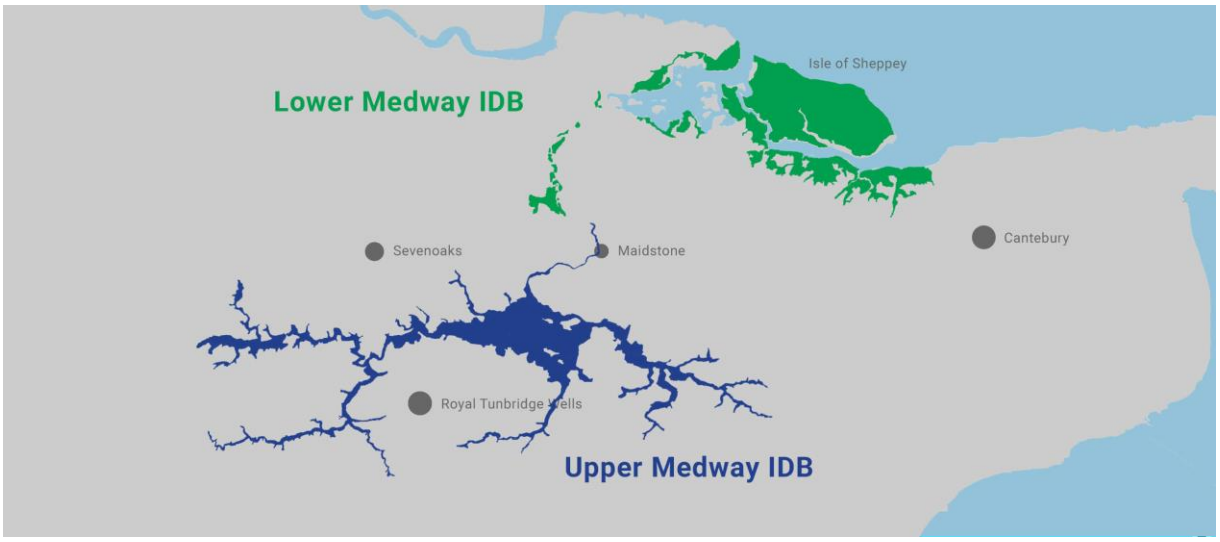
Assets for which the Board has operational responsibility:

- Water level control structures: **6**
- Watercourses (maintained): **360 km**
- Raised embankments: **None controlled by the IDB**
- Reservoirs: **Weirwood Reservoir is within the district at 153.5ha**
- Sustainable urban drainage systems (SuDS): **0**
- Pumping Stations: **3**
- Culverts: **All considered riparian responsibility**

## 4.2. Map of Audit Area (Drainage District)

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

**Map 1. Upper and Lower Medway Internal Drainage District.**



## 4.3. Geology

The Upper and Lower Medway IDB districts cover the counties of Kent, Surrey and Sussex. The Lower Medway district is largely coastal in nature, with its boundaries taking in the Isle of Sheppey, and extending from the Isle of Grain and Gillingham in the north and west to Whitstable and Faversham in the east and south.

The Hoo Peninsula lies to the north of the Lower Medway drainage district; here the geology consists of a mixture of alluvial drift and London Clay. This band extends across the Isle of Sheppey and along the North Kent Coast towards Whitstable. Travelling upstream from Strood, the Medway River passes through a band of chalk which extends to Halling. The substrate around Snodland comprises of Upper Greensand before Lower Greensand begins to predominate as the river loops round towards Maidstone.

The Upper Medway IDB district boundaries are strongly associated with the River Medway and its tributaries. The boundaries largely follow the floodplain of the Medway, and the Rivers Beult, Teise, Bewl, Bourne, Eden and Eden Brook.

The Upper Medway drainage district mainly consists of a band of Wealden Clay which stretches east from Yalding to Edenbridge and West to Staplehurst. The clay rises to the North West before becoming upper and lower greensand once again towards the Eden Stream (UM74)

## 4.4. Landscape Character

Natural England has divided the whole of England into a number of National Character Areas (NCA) based on characteristic landforms, wildlife and land use. For each NCA, there is a prepared profile that characterises the wildlife and natural features, identifies the influences that act upon those features and sets objectives for nature conservation.

The drainage districts are located within the following NCAs:

**Greater Thames Estuary** - The Greater Thames Estuary is predominantly a remote and tranquil landscape of shallow creeks, drowned estuaries, low-lying islands, mudflats and broad tracts of tidal salt marsh and reclaimed grazing marsh that lies between the North Sea and the rising ground inland. Despite its close proximity to London, the NCA contains some of the least settled areas of the English coast, with few major settlements and medieval patterns of small villages and hamlets on higher ground and the marsh edges. Sea defences protect large areas of reclaimed grazing marsh and its associated ancient fleet and ditch systems, and productive arable farmland. The extensive network of drainage ditches is a prominent landscape feature of this NCA.

**North Kent Plain** - The North Kent Plain is the strip of land between the Thames Estuary to the north and the chalk of the Kent Downs to the south. The area is open, low and gently undulating. It is a very productive agricultural area with predominantly high-quality, fertile loam soils characterised by arable use. Traditional orchards, soft fruits and other horticultural crops exist in central and eastern areas giving rise to the use of the title ‘Garden of England’.

**North Downs** - This distinctive chalk downland landscape forms a continuous and steep scarp giving extensive views across Kent and Surrey to the South Downs. The steep south facing scarp of the North Downs rises to over 180m above the greens and the river valleys of the Stour, Medway, Darent and Mole are prominent features. Although this NCA is largely dominated by

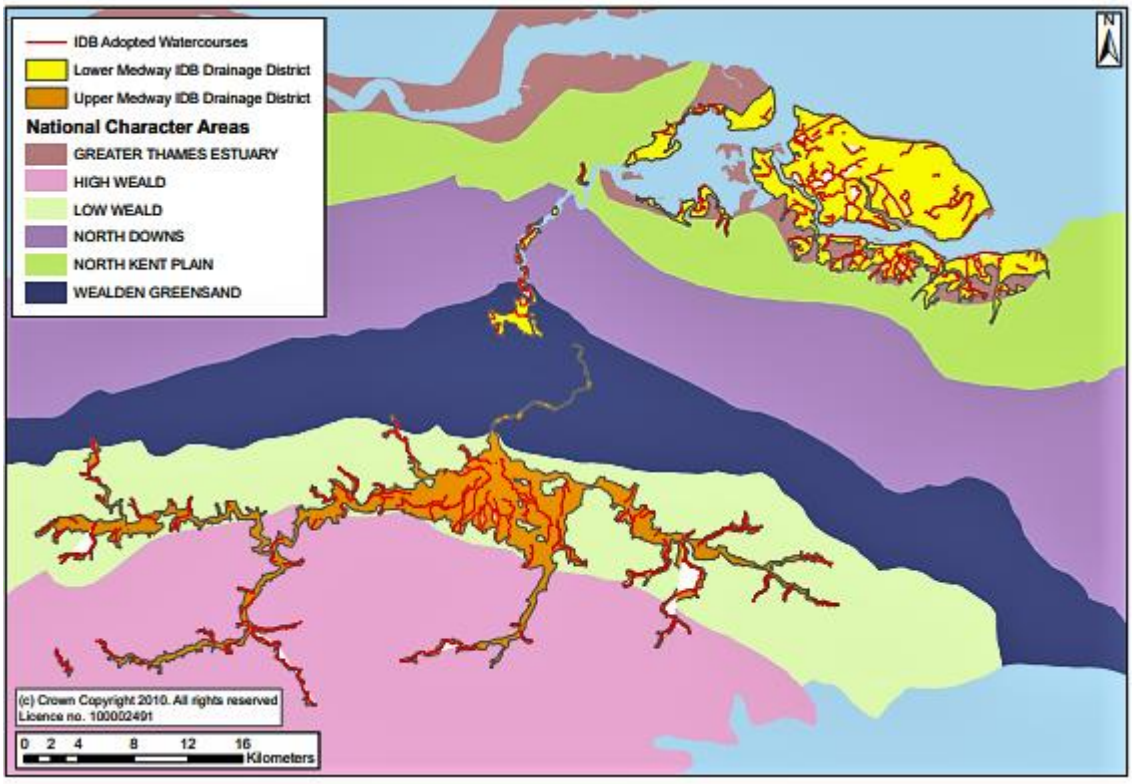
arable fields, some pockets of traditional downland grazing remain on areas of high quality unimproved chalk grassland. Oak and Ash woodlands dominate the upper slopes of the downs, while Beech, Ash and Field Maple are more common on the valley sides.

**Wealden Greensand** - The long, curved belt of the Wealden Greensand runs across Kent, parallel to the North Downs, and on through Surrey. It moves south, alongside the Hampshire Downs, before curving back eastwards to run parallel with the South Downs in West Sussex. The area has outstanding landscape, geological, historical and biodiversity interest. Biodiversity interests are represented by internationally and nationally designated sites alongside numerous local sites and other non-designated semi-natural habitat, representing the outstanding value and quality of the heathland, woodland, wetland and coastal habitats found within the NCA. In addition, fragments of acid grassland and parkland landscapes add to the overall diversity of habitats.

**Low Weald** - This landscape is characterised by broad, low-lying, gently undulating clay vales. Small woodlands are frequent, contributing to the feel of a patchwork landscape consisting of fields, woodland and hedgerows. The Low Weald is heavily dissected by river floodplains and many, small, narrow and commonly sunken streams. There is an abundance of ponds and small stream valleys, often accompanied by wet woodlands of Alder and Willow. Arable cropping predominates on the lighter soils, while grassland is more common on the heavier clay soils which are often wet.

**High Weald** - The High Weald encompasses the ridged and faulted sandstone core of the Kent and Sussex Weald. It is an area of ancient countryside and one of the best surviving medieval landscapes in northern Europe. The High Weald consists of a mixture of fields, small woodlands and farmsteads connected by historic routeways, tracks and paths. wildflower meadows are now rare but prominent medieval patterns of small pasture fields enclosed by thick hedgerows and shaws (narrow woodlands) remain fundamental to the character of the landscape.

**Map 2**: **Landscape Character Areas.**



## 4.5. Landscape Designations

The Lower Medway Drainage District falls partly within the Kent Downs Area of Outstanding Natural Beauty (AONB), while the Upper Medway Drainage District lies partially within the High Weald AONB.

**The Kent Downs AONB** stretches from the Surrey border in a ribbon of rolling countryside which meets the sea at the cliffs of Dover. Inland, the Kent Downs rise to over 240m, cresting in a prominent escarpment above the Weald to the south. The AONB is traversed by the three prominent river valleys of the Darent, Medway and Stour.

The AONB roughly follows the South East's outcrop of chalk and greensand, the two ridges running parallel with each other to the coast. The chalk ridge, with its characteristic dip slope and dry valleys, has great wildlife importance in its unimproved chalk grassland, scrub communities and broadleaved woodlands. The well-wooded greensand ridge is particularly prominent in the Sevenoaks and Tonbridge and Malling districts and supports heathlands and acidic woodlands.

A prosperous farming area, its high grade land is in intense agricultural and horticultural use. The AONB, bordered by large and expanding urban areas including Ashford, Maidstone and the Medway Towns, as well as the ports of Dover and Folkestone.

**The High Weald AONB** is a historical countryside of rolling hills extending largely across Sussex. The sandstones and clays of the exposed centre of the dome, the 'High Weald' give rise to a hilly, broken and remote country of ridges and valleys covered by a patchwork of fields, woods and shaws. The landscape is defined by its small, irregular fields, abundant woodlands and hedges, scattered farmsteads, and sunken lanes. This is historically a heavily wooded area, and still supports the highest proportion of ancient woodland in England.

The character of the High Weald was established by the 14th century and has survived major historical events and social and technological changes. As a result the High Weald is considered to be one of the best surviving, coherent medieval landscapes in Northern Europe.

There are no **National Parks** within the drainage districts.

## 4.6. Historic Sites and Monuments

### Lower Medway

The North Kent Coast between Rainham and Whitstable has unearthed numerous hand axe finds suggesting Neanderthal presence in the middle Devensian (around 110,000 -30,000 years ago). Large Mammal fossils have also been found along the marshy plan of the Swale. Large earthworks and even drain clearance in this area could unearth more finds.

There is one site of Protected Military Remains on Sheppey and three Scheduled Ancient Monuments in the Lower Medway District. There are also numerous sites listed in the Sites and Monument Record which could be affected by in channel and bankside work.

Table 1. Historical sites on or close to IDB channels within the Lower Medway district.

| IDB | Designation | Name | Potential to be affected by IDB |
|---|---|---|---|
| **LMIDB12** | Protected Military Remains | Crash site of Hawker Hurricane | A licence from the Ministry of Defence may be needed for works likely to affect this site. |
| **LMIDB4** | Scheduled Ancient Monument | Queenborough Lines | Any work likely to affect the monument must have Scheduled Monument Consent. |
| **LMIDB62** | Scheduled Ancient Monument | Oare Gun Powder Works | Any work likely to affect the monument must have Scheduled Monument Consent. |
| **LMIDB50** | Scheduled Ancient Monument | Several Medieval Saltern | Any work likely to affect the monument must have Scheduled Monument Consent. |
| **LMIDB89** | Sites and Monuments Record | Saltern | Bank work should avoid damaging this feature. |
| **LMIDB 59,56,46a, 19, 16** | Sites and monuments records | Sheepfolds | Bank work should avoid damaging the sheepfold remains. |
| **LMIDB12** | Sites and Monuments records | Roman, Bronze and Iron Age Coins and a Stone Axe | Operators should be made aware that work on this channel could unearth more finds. |
| **LMIDB 90** | Sites and monuments record | Horizontal and Vertical timbers in Milton Creek Bed | Operators in this area should be aware of the location of these timbers and avoid disturbance. |
| **LMIDB15** | Selected Heritage Inventory for Natural England | Wind pump | The wind pump should not be removed. |
| **LMIDB 90** | Sites and monuments record | Site of prehistoric settlement | Operators should be made aware that work here could unearth more finds. |

| | | | |
|---|---|---|---|
| **LMIDB70** | Sites and monument record | Anglo Saxon Jetty and pitcher found | Operators should be made aware that work on this site could unearth more finds. |
| **LMIDB 58** | Sites and monument record | Flint scatter | Flint work found during work on IDB channel. Operators should be made aware that work on this site could unearth more finds. |
| **LMIDB 62** | Selected heritage inventory for Natural England | Possible site of post medieval mill. Pottery and Earthworks | Bank work on this site could damage earthwork or uncover more signs. |
| **LMIDB 64** | Selected heritage inventory for Natural England | Site of explosives factory | Earthworks could potentially be damaged by major bank works on this channel. |
| **LMIDB 82** | Sites and Monument Record. Lower Halstow Conservation Area | Site of old corn mill. Surrounding network of waterways, feeder stream and associated trees are important to the character of the areas. | Work on this channel should not alter the character of the area. Preservation of riverside trees important. |
| **LMIDB 50, 9, 106, 131** | Sites and Monuments Record | saltworks | Work on the banks of this channel could disturb saltworkings. |
| **LMIDB 100** | Sites and Monuments Record | Site of Golden Nugget Wharf | Remains of this wharf should not be disturbed. |
| **LMIDB 100** | Sites and monuments record | Horseshoe shaped enclosure on Stoke Marshes | Bank works should take into account the historic significance of this area. |
| **LMIDB 99** | Sites and Monuments record | Hoo Stop Line. Features associated with Anti-Tank defences in 2nd World. | Bank works should take into account the historic significance of this feature. |
| **LMIDB 99** | Sites and Monuments record | Flanking Area and anti-tank ditch | Bank works should take into account the historic significance of this feature. |
| **LMIDB 19** | Sites and Monuments Record | Ridge and Furrow field system | Low impact. |
| **LMIDB 30** | Sites and Monuments record | Roman and Medieval Field system and boundary ditch | Major bank works could affect this feature. |

**Upper Medway**

The boundary of the Stour Basin Palaeolithic Project sits within the Upper Medway area. The Wealden Drainage system is most likely from the middle to late Pleistocene between 500,000 and 100,000 ago. Any found Artefacts along the drainage channels are likely to be significant.

Table 2. Historical sites on or close to IDB channels within the Upper Medway District

| IDB | Designation | Name | Potential to be affected by IDB activities. |
|---|---|---|---|
| **UM3** | Schedul ed Monument | Sherway Bridge | Valuable historic deposits may lay underneath the bridge. Any major works could need Scheduled Monument Consent |
| **UMIDB10a** | Scheduled Monument | Castle Mound Moot | Any major works on this channel could unearth finds and could need Scheduled Monument Consent. |
| **UMIDB 9, 22, 51** | Listed buildings | Buckhurst Bridge<br>Bridge at Risebridge<br>Bridge near Groombridge Hill | Ensure works do not damage the bridge. |
| **UMIDB 18** | Sites and monuments record | Palaeolithic axe and Mesolithic Thames pick | Operators should be made aware that works along this channel could unearth other finds. |
| **UMIDB 30** | Sites and monuments record | Barden Furnace c1577 | The sluice gate marks the possible location of the furnace and is part of the designation. |
| **UMIDB 31** | Find spot | Roman coin and post Medieval harness fittings | These finds were found as part of previous flood defence works so operators should be made aware that work in this location could unearth more. |
| **UMIDB 38** | Find spot | Mesolithic flint finds | Operators should be made aware that works along this channel could unearth other finds. |
| **UMIDB 89** | Sites and monument record | Stilstead Lock | Low |

## 4.7. Tree Preservation Orders

A Tree Preservation Order (TPO) is a legal order which protects trees and woodland. It's an offence to damage, cut down or destroy a protected tree without getting permission first. If you prune or cut down a tree without permission, you could be prosecuted and receive an unlimited fine and be required to plant replacement trees in the same location.

TPO's are normally placed on trees that are visible to the public but can be put in place if a member of the public thinks a tree is in danger of destruction or damage.

There are 1000's of TPO's in operation across the drainage district. Maidstone Borough Council has 1000 alone. Therefore, before beginning work on a tree of significance, i.e. a pollarded willow alongside a channel, staff should check with the relevant local authority if a TPO order is in place alongside considering other issues such as the likelihood of bats using the tree.

## 4.8. Statutory Nature Conservation Site

### 4.8.1 Internationally Designated Sites

The following internationally-designated conservation sites, relevant to the water level management* and/or maintenance activities of the IDB, are found within or adjacent to the drainage district.

Table 3. Internationally designated sites within or adjacent to the IDB boundary

| Site name | Designation | Associated WLMP?* | Features Relevant to IDB |
|---|---|---|---|
| **Thames Estuary and Marshes** | Ramsar, SPA | | • Complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat.<br>• Wintering waterfowl.<br>• Breeding waders.<br>• 14 Nationally scare plants and 20 RDB invertebrates. |
| **Medway Estuary and Marshes** | Ramsar, SPA | | • Rain-fed, brackish, floodplain grazing marsh with ditches, and intertidal saltmarsh and mudflat.<br>• Wintering waterfowl.<br>• Breeding rare wetland birds.<br>• Diverse assemblages of wetland plants including 10 nationally scare plants and 12 RDB invertebrates. |
| **The Swale** | Ramsar, SPA | | • Grazing marsh.<br>• Feeding and roosting grounds for many water birds.<br>• Breeding and winter waders and wildfowl.<br>• Nationally scare plants and invertebrates. |
| **Medway Estuary** | MCZ | | • Complex and Dynamic Ecosystem.<br>• Nursery ground for Bass, Herring, Cod, Plaice and Sole.<br>• Protected Species: Tentacled lagoon-worm, Smelt.<br>• Protects 8 different habitats. |
| **Swale Estuary** | MCZ | . | • Important spawning ground for fish.<br>• 9 habitats protected |

### 4.8.2 Nationally Designated Sites

The following nationally-designated conservation sites, relevant to water level management and/or maintenance activities of the IDB, are found within the drainage district.

Table 4. Nationally designated sites within or adjacent to the drainage district

| Site name | Designation | Component of an International Site | Associated WLMP?* | Features Relevant to IDB |
|---|---|---|---|---|
| **Elmley Marshes** | NNR | Ramsar | | • Grazing marsh.<br>• Wintering waterfowl and breeding waders. |
| **The Swale** | NNR, SSSI | Ramsar | | • Internationally important wetland.<br>• Wildfowl and wader populations.<br>• Scarce plants and invertebrates. |
| **Holborough and Burnham Marshes** | SSSI | No | | • Reed beds, open water and fen habitats.<br>• Important winter wildfowl and waders.<br>• Scarce wetland plants.<br>• Rare moths and beetles.<br>• Three rare bees. |
| **Medway Estuary and Marshes** | SSSI | Ramsar | | • Largest intertidal habitat in Kent.<br>• Internationally important wetland.<br>• Wildfowl population.<br>• Breeding waders.<br>• Scarce plant species. |
| **Sheppey Cliffs and Foreshore** | SSSI RIGS | Part of the foreshore is Ramsar. | | • Geological site.<br>• Fossils.<br>• Scarce plant: - Dragon's teeth. |
| **South Thames Estuary and Marshes** | SSSI | Ramsar | | • 20,000 waterfowl.<br>• Internationally important bird species.<br>• Nationally scarce plants on dykes.<br>• Invertebrates include rare beetles, flies and true bugs. |
| **Blindley Heath** | SSSI, LNR | No | | • Best known example of Relict damp grassland on Weald Clay in Surrey.<br>• Rich flora of typical 'Wealden' plants, some |

| | | | | |
|---|---|---|---|---|
| | | | | with restricted distribution in Surrey.<br>• Ponds. |
| **Lingfield Cernes** | SSSI | No | | • Unimproved wetland meadows.<br>• Scarce plants: - true fox-sedge and narrow-leaved water dropwort.<br>• Species rich mature hedgerows.<br>• Aquatic plants in ditches. |
| **River Beult** | SSSI | No | yes | • One of the few remaining Clay rivers in Southern England.<br>• Naturalized flora and fauna. |
| **Weir Reservoir** | SSSI | No | | • One of largest areas of open water in the region.<br>• Breeding and wintering bird populations. |

### 4.8.3 Local Nature Reserves

The following Local Nature Reserves are relevant to the activities of the IDB are found within the drainage district. Sources of information are listed in Annex x.

Table 5. Local Nature Reserves within the drainage district

| Site name | Associated WLMP?* | Features Relevant to IDB |
|---|---|---|
| | | |
| **Oare Marshes, KWT Reserve** | | • Extensive grazing marsh.<br>• Breeding and wintering wildfowl and waders.<br>• Saltmarsh and reed beds. |
| **Seasalter Levels RSPB Reserve** | | • Grazing marsh.<br>• Breeding waders and wintering wetland species. |
| **South Bank of Swale KWT reserve** | | • Wetland<br>• Grassland<br>• Mudflats<br>• Wintering waders and wildfowl.<br>• Flora includes yellow horned-poppies, sea-lavender, golden samphire and wild carrot. |

### 4.8.4 Non-statutory Nature Conservation Sites

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

Table 6 . Non-Statutory sites within the drainage district

| Site Name | Designation | Features relevant to IDB |
|---|---|---|
| **Nor Marsh and Motney Hill** | RSPB Reserve | Saltmarsh used as feeding and roosting site by wintering waders and wildfowl. |
| **Great Bells Farm** | RSPB Reserve | Site of arable reversion to grazing marsh supporting large numbers of breeding waders and water vole. LM11 runs through the site and Great Bells Pumping station could have impact. |
| **Harty Marshes** | RSPB Reserve | An area of wet grassland beside a large reed bed. Raptor roost. Leysdown Pumping station may impact on this site. |
| **Seasalter Levels** | LNR and RSPB Nature Reserve | Grazing marsh site supporting breeding waders. |
| **Abbey Fields, Faversham LMIDB58** | LWS | Running water, water voles, kingfisher, reed bunting and 5 nationally notable invertebrate species. |
| **Brick Pit Wood, Frittenden UMIDB9 Hammer Stream** | LWS | Ponds and Grassland supporting bladder sedge, water violet and marginal wetland plants like ragged robin. |
| **Diggs and Sheppey Court Marshes LMIDB (numerous channels)** | LWS | Grazing marsh, birds recorded include lapwing, redshank, snipe, reed warbler and reed bunting. |
| **East Tonbridge Copes and Dykes and River Medway UMIDB29** | LWS | Ditches hold yellow water lily, broad leaved pondweed, true fox sedge and bladder sedge. Excellent damselfly records including downy emerald. |
| **Graveney Dykes and Pasture LMIDB46 & 55** | LWS | Well-developed aquatic and marginal flora including tubular water dropwort and lesser water parsnip. Five species of warbler present so late cutting of reed fringed ditches may assist. |
| **Grazing Marsh at Upchurch LMIDB84** | LWS | Grazing marsh hunted by hen harriers. Nationally scarce sea clover present. |
| **Hale Street Ponds and Pasture UMIDB31** | LWS | Ponds and ditches support diverse aquatic and emergent plants including true fox sedge. Scarce damselfly, water rail and willow tit use this area in winter along with snipe. |
| **Hemsted Forest UMIDB9** | LWS | Ancient woodland with wet areas support sedges and rare plants such as chaffweed. |

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| **Kelsham Farm Orchards UMIDB11** | LWS | Grassland with woodland ponds and river bank supporting grass snakes, great crested newts and good numbers of dragonflies and damselflies. |
| **Leybourne Lakes, Snodland LMIDB42** | LWS | Lakes support over 100 species including bittern. Water vole and water shrew present. Flowering rush and arrowhead in Snodland Mill stream plus abundant dragonflies. |
| **Milton Creek, Sittingbourne LMIDB90** | LWS | Grassland, open water and saltmarsh. Good aquatic and marginal plants have been recorded in the ditch network with opposite leaved pondweed. Newts, frogs, slow worms and grass snake breed here. |
| **Minster Marshes LMIDB4** | LWS | Grazing marsh and areas of swampy ground supports wetland flora, damp unimproved grassland provides otter foraging habitat. |
| **Pasture and Woods near Hobbs Hill Farm, Cowden UMIDB52** | LWS | Grazing marsh, saline lagoon and freshwater ditches with good marginal and aquatic flora including tubular water dropwort. Lapwing and redshank use the marsh and water vole occur in the ditches. |
| **Ponds and Pasture, Waterman Quarter UMIDB9** | LWS | Wetland and aquatic plants including true fox sedge, abundant damselfly including white legged and dragonflies including downy emerald. |
| **Ponds, Benover UMIDB19** | LWS | Ponds support a range of wetland plants including elongated sedge. Kingfisher, great crested newt and brown long eared bat. |
| **River Medway and Marshes, Wouldham LMIDB44A,C,D & E** | LWS | Waterlogged fields, saltmarsh and rivers edge supporting marshmallow and the marshmallow moth. |
| **River Medway etc., south of Leigh UMIDB** | LWS | Excellent location for breeding kingfisher, Water vole and water shrew present. Abundant dragonfly and damselfly. |
| **River Sherway, Ponds and Pasture UMIDB3** | LWS | Impressive marginal and aquatic plant life. Good numbers of dragonfly, grass snake and common frog. |
| **Roundshill Park Wood, Sissinghurst UMIDB9** | LWS | Ancient woodland and alder carr supporting scarce sedges and over 80 bryophyte species. Grass snake, slow worm and common toad along with frogs and newts. |
| **St Peter's and St Paul's Churchyard, Yalding UMIDB19** | LWS | Churchyard with good mosses and lichens. |
| **Uplees Lake and Marsh LMIDB61** | LWS | Neutral grassland with a good range of aquatic and marginal species including false fox sedge and lesser water parsnip. Kingfisher, bittern and common warblers. |
| **Widehurst Wood, Marden Thorn UMIDB18** | LWS | Wet woodland with running water, orchids, excellent range of butterflies plus several bat species. |

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| **Woods and pasture near River Teise above Lamberhurst UMIDB38** | LWS | Wet woodland and semi improved grassland with six recorded odonata including white legged damselfly |
| **Woods and Pasture, Nettleshead Green UMIDB31** | LWS | Woods, pasture and ponds, ancient woodland plants species and nationally scarce insects. |
| **M27 Mill Place Meadow UMIDB88** | LWS | Herb rich marshy grassland. Interesting bankside flora. |
| **Harrison's Rocks, UMIDB41 Erridge Stream** | LWS | Rock face with important population of bryophytes. Light shading by trees is benefitting species but holly needs to be thinned. |
| **Coltsford Mill UMIDB74 Eden Brook** | SNCI | Fen and wet grassland representing characteristic plant community of lowland streams. |
| **Foyle Tolt and Foyle Tolt East, UMIDB74 and UMIDB76** | Potential SNCI | Not surveyed |
| **White House Field UMIDB87** | Potential SNCI | Not surveyed |
| **Dencher Wood UMIDB60a** | Potential SNCI | Not surveyed |
| **Eden Brook Field UMIDB60a** | Potential SNCI | Not surveyed |
| **Colliers Wood UMIDB79** | Potential SNCI | Not surveyed |
| **Green Wood and Felcourt UMIDB79** | Potential SNCI | Not surveyed. |

## 4.9. Habitat Audit Summary

This habitat audit summary lists the UK priority habitats that occur within the drainage district and are identified as likely to be influenced by the Board's activities. Also listed are habitats deemed to be of local importance and/or featured in local nature strategies that occur in the drainage district. Finally, brief notes are included on the potential for the IDB to maintain, restore or expand its important habitats.

**Table 7. Habitat Audit Summary**

| National Priority Habitat | National Status & Extent | Local Priority Habitat | Local Status and Extent | Habitat of Importance for IDB | Extent, status and Location of Habitat of Importance within drainage district | IDB Potential for Maintaining, Restoring or Expanding Habitat (high/medium/low) |
|---|---|---|---|---|---|---|
| **Arable Field Margins** | Farmland accounts for around 70% of land use in the UK.<br>54% of this is arable land.<br>There are estimated to be around 100,000 ha of arable field margins in Britain. | Yes | 2741 ha of arable field margins in Kent. Estimates are not available for East Sussex and Surrey. | **Arable Field Margins** | Arable field margins are likely to be widespread | **Medium**<br><br>**Leaving one bank uncut could alleviate issues with run off and provide foraging grounds for barn owls.**<br><br>**Silt deposition could impact on floral interest. Removing cuttings could help improve floral diversity.** |
| **Improved Grassland** | Approximately 220.000 ha of grazing marsh in the UK.<br>Widespread losses due to drainage and change to arable.<br>Re-seeded meadows have less plant diversity and invertebrate life. | Yes | 14,174ha of Kent are covered by Coastal and Floodplain Grazing Marsh. Kent has around 25% of the national amount of semi-natural unseeded grazing marsh. | **Coastal and floodplain grazing marsh** | The Lower Medway drainage district covers some of the most important areas of grazing marsh in Kent.<br>Main areas include Grain, Sheppey, North Kent Coast to Whitstable<br>Meadows around Wouldham and Burnham | **High**<br><br>**Water level management is crucial for creating wet grazing marsh to benefit waders.** |

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| **Saline Lagoon** | The UK has a relatively small proportion of saline lagoons with an estimated 5200ha | Yes | Kent has 286ha of saline lagoons or ponds.<br>16% of the UK's saline lagoon habitat occurs in Kent. | **Saline Lagoons** | North Kent Coast around Grain on the Hoo Peninsula.<br>Near Queenborough on the Isle of Sheppey.<br>Near Oare Marshes.<br>Numerous drains impact with Saline Lagoons in the Lower Medway. | **Medium**<br><br>**Salinity levels should remain stable.**<br><br>**Opening sluices to remove excess freshwater may be necessary.** |
| **Standing Open Water** | 1785Km2 in the UK, | Yes | Kent has 2448ha of Standing Open Water.<br>Surrey has 3375 ha<br>Sussex has around 18,000 ponds. | **Eutrophic Standing Open Water Ponds** | Large areas of open water within the Lower Medway Drainage District include Leybourne lakes, Little Murston Nature Reserve, Oare Marshes<br><br>Open water in the Upper Medway drainage district are situated close to IDB 89 Hammer Stream. Barden Lake and Haysden Water. Hever Castle lake and Weir Wood Reservoir.<br><br>There are likely to be many hundreds of ponds throughout the drainage district. | **Medium**<br><br>**Water levels and water quality may be affected by IDB management.**<br><br>**There may be opportunities to work in partnership to improve marginal habitat.** |
| **Standing Open Water** | IDB's manage 22,000km of watercourse. | previously mentioned in Kent BAP | The Upper and Lower Medway IDB's manage 435Km of watercourse | **Ditches and Dykes** | Throughout | **High.**<br><br>**Varied bank and weed cuts.**<br><br>**Management of water levels to benefit wildlife.**<br><br>**Creation of two tier** |

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| | | | | | | **channels and berms.**<br><br>**Control of problem species.**<br><br>**Installation of woody debris.**<br><br>**Sensitive management of bankside trees.** |
| **Rivers and Streams** | In Britain there are estimated to be around 146,000km of rivers. | Yes | 25 main rivers occur in Kent and rivers cover 6592ha<br>Sussex has 10,000km of river<br>Surrey has 2.5km of chalk river. | **Rivers and Streams** | There are numerous main rivers within the drainage district, including the Medway, Beult, Bourne, Teise, Eden and Bewl along with important streams such as the White Drain in the Lower Medway and the Hammer Dyke in the Upper Medway district. | **High**<br><br>**Channel cutting.**<br><br>**Retention of in channel gravels.**<br><br>**Restoring geomorphology by management of woody debris.**<br><br>**Sensitive management of bankside trees.** |
| **Fen, marsh and swamp** | There are around 26,000 ha of lowland fen in the UK. | Yes | Kent has around 12ha<br>Surrey has 139 ha, although it combines this habitat type with reed beds.<br>There are around 200 ha of true fen in Sussex. | **Lowland Fen** | IDB 38 threads through Holborough Marshes. There are also pockets of this habitat on the River Beult near Laddingford and a small amount at Nagden Marshes according to Natural England's South East Priority Habitat index and Kent Habitat Survey. | **High**<br><br>**Restoring natural hydrological processes on and around wetland sites is likely to improve the resilience of features to climate change.** |
| **Fen, Marsh and swamp** | There are around 5000ha of redbud in the UK but only about 50 are larger than 20ha. | Yes | The Kent habitat survey of 2012 found 545ha of redbud in the country. | **Reed bed** | Reed beds are mainly confined to the Lower Medway drainage district, with important areas | **High** |

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| | | | Surrey has 139ha of redbud, combined with lowland fen. | | including around Snodland, Motney Hill and Capel Fleet on Sheppey. Reed lined channels and small pockets of redbud are likely to be widespread across the Lower Medway drainage district. | **Water Level Management plans to restore reed beds in danger of drying out.** |
| **Broad Mixed and Yew Woodlands** | There is estimated to be between 50,000 and 70,000 ha of wet woodland in Britain. This has declined due to clearance, lowering of water tables and inappropriate grazing | Yes | 662ha of wet woodland in Kent. Surrey also estimates 662ha of wet woodland. Sussex estimates that 1600ha of ancient woodland is found on naturally wet soils in the county | **Wet Woodland** | Wet woodland is found extensively in the Upper Medway drainage district. Mapping shows only isolated occurrences of this habitat in the lower Medway drainage district but this habitat is possibly under recorded. | **High**<br><br>**Managing water levels in wet woodland in order to restore habitat.**<br><br>**Working with partners to plant wet woodland along drainage channels in upstream areas should also be encouraged to alleviate downstream flooding.** |
| **Hedgerows** | There are around 500,000 miles of hedgerow in the UK, half the amount that existed before the 2nd World War and not all of these are species rich. Many hedgerows were removed and others damaged through neglect and over vigorous cutting. | Yes | Kent has 11,734km of hedgerow | **Hedgerows** | There is no precise data on the extent of this habitat in the drainage district but it is likely that hedgerows are widespread. | **Medium**<br><br>**Removal of trees or scrub to access channels for maintenance could impact. Work to be undertaken outside bird breeding season.** |
| **Neutral Grassland** | Unimproved neutral Semi- natural grassland has declined by 97%. There are less than 15,000ha of species rich | | 27ha in Kent and 33ha in Surrey | **Lowland meadows.** | Considering the rarity of lowland meadows drainage channels interact with quite a few species rich meadows especially within Sussex and | **Medium**.<br>**Drainage could negatively impact on species present.** |

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| | neutral grassland remaining in the UK. | Yes | | | Surrey. UMIDB's 3, 31, 41, 59 and 87 all cross this habitat. Good Quality semi-improved grassland is also widespread across the Upper Medway district | **Conversely maintenance of sub surface drainage is critical for ensuring that floodplain meadows are not replaced by inundated grassland or swamp communities.** |
| **Littoral Sediment Communities** | Coastal margins cover 137,000 ha of the UK. This is a broad category including Littoral sediment communities (coastal saltmarsh, mudflats, seagrass etc.) | Yes | Kent has around 10,000 ha of mudflat much of which is designated for conservation importance. | Littoral Sediment Communities. | The North Kent Coast is internationally important for its mudflats which are rich in crustaceans and provide a high protein food source for some of the 300,000 birds that visit in the winter. | **Medium**<br><br>**Discharge of water with high nutrient levels could damage these habitats.**<br><br>**Transference of non-native species.** |

## 4.10. Species Audit Summary

This species audit summary will include priority and other species including INNS that occur within the drainage district and are identified as likely to be influenced by the Board's activities. Also listed are species deemed to be of local importance and/or identified by local nature strategies. Finally, brief notes are included on the potential for the IDB to improve the status of the species in the drainage district.

Table 8. Species Audit Summary

| Common & scientific name | National Status | Local Status | Location of Species of Importance within drainage district | IDB Potential for Maintaining or Increasing Species Population or Range (High/medium/low) |
|---|---|---|---|---|
| Barn owl ***Tyto Alba*** | Specially protected species. | Barn owls have suffered historical declines but numbers have recovered due to a reduction in persecution. Loss of hunting areas due to intensive farming is one of the pressures they suffer from. | Throughout | **Medium** **Leave section of bank uncut for hunting** **Installation of barn owl boxes on structures and on poles alongside channels.** |
| Beaked Tasselweed ***Ruppia maritima*** | Kent Red Data Book | This species has declined in the southern part of its range. | Scattered records in Wouldham and throughout the North Kent Marshes. | **Low** **A species of brackish water, including ditches**. |
| Great Bittern ***Botaurus Stellaris*** | S41, UK BAP species, Amber listed | Bittern numbers declined due to drainage of reed beds but numbers are slowly recovering. There were 160 breeding pairs in 2016 in the UK. | Associated with reed bed. Records throughout both Upper and Lower Medway district. | **Medium** **Maintain appropriate water levels in reed bed habitat and remove obstructions to fish passage.** |
| Bladder Sedge ***Carex vesicaria*** | Kent Red Data Book | Lost from many sites due to drainage, ditch cleaning and eutrophication. In Kent it has probably been most affected by farm pond margins becoming tree dominated | Scattered throughout Upper Medway District. | **Medium** **Prefers habitats without open water. Tree work around ditches may benefit this species.** |
| Brook Lamprey ***Lampetra planeri*** | Kent Red Data book, Specially Protected species | Declining in parts of the UK but still widespread. | Tanbridge area. Associated with River Beult north of Staplehurst. | **High** **This species requires clean water, gravel beds and silt on the margins of channels.** |

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| | | | | **Channel narrowing through installation of woody debris could help this species to spread.** |
| Brown Trout ***Salmo trutta*** | S41, UK BAP species | Widespread | Groombridge, Hadlow UM41 Erridge Stream. | **Medium** **Clean gravels and needed for fish to spawn. Installation of woody debris may help.** |
| Bullhead ***Cottus gobio*** | Specially Protected species | Common | Tanbridge area | **Medium** **Clean gravels are needed for this fish to spawn. Installation of woody debris may help.** |
| Crescent moth ***Celaena leucostigma*** | S41, UK BAP research species | Classified as vulnerable with an 82% decline over 35 years. | Tanbridge area Ridham, Holborough Marshes, Hoo Peninsula. | **Medium** **A species of wet woodland, likely to be affected by drainage.** |
| Common Pipistrelle ***Pipistrellus*** | S41, Specially Protected | It is unclear whether this species is declining but clearance of trees is likely to reduce habitats and it is an offense to disturb bat roosts. | Throughout | **High** **Large trees with crevices should be checked for signs of bat activity before tree work takes place.** **Bat boxes can be installed on structures or poles (not active electricity poles) close to ditches.** |
| Common Toad ***Bufo bufo*** | S41 UK BAP Species, Specially Protected species | Common toads have seen a rapid decline across South East England. | Throughout | **High** **Creating pools in channel.** **Rotational cutting.** **Creation of log piles could benefit this species.** |
| Dainty Blue Damselfly ***Coenagrion scitulum*** | Kent Red Data Book | Only breeding sites are in Kent. | Ditches close to Kingsferry Bridge, Isle of Sheppey | **Medium** **Likes well vegetated ditches. Reduction in cutting could possibly benefit this species.** |
| Depressed river mussel ***Pseudanodonta complanata*** | S41 UK BAP Species | Numbers have declined by 30%. | Oak Weir lock and above Golden Green Bridge, River Medway | **Medium.** **This species requires clean water therefore reducing pollution in tributaries of the River Medway will benefit it.** |
| Dittander ***Lepidium latifolium*** | Kent Red Data Book | Nationally scarce | Locations throughout Lower Medway District. | **Medium** **Ditch banks are a favoured habitat. Consider a cutting regime that provides suitable habitat for this plant.** |

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| Divided Sedge ***Carex Divisa*** | S41 UK BAP Species | This plant has suffered losses nationally but can be locally common in South East England. | Throughout the Lower Medway Drainage district | **Low** |
| Duffey's Bell Headed spider ***Praestigia duffeyi Baryphyma duffeyi*** | S41. UK BAP Species | No information found | Wouldham marshes | **Unknown** **An aquatic species of brackish water. More information on its habitat requirements is needed before an assessment can be made.** |
| European Eel ***Anguilla anguilla*** | S41, UK BAP species, IUCN UK Red list, Critically Endangered | Eel populations are at an all time low and continue to decline. | Scattered records in both the Upper and Lower Drainage district | **High** **Reduce obstacles which prevent eels moving downstream to migrate.** **Return eels to the water that have become stranded when de-silting ditches.** |
| Elongated Sedge ***Carex elongata*** | Kent Red Data Book | A very rare sedge which has declined since the 1930's due to drainage. However records from the Low Weald are increasing. | Scattered records in Upper Medway Drainage District. | **Medium** **A plant of wet woodland and meadows. In Kent this plant is strongly associated with wooded ponds in the Low Weald. Drainage has caused a loss of habitat for this species but, where it occurs alongside drainage channels, then the more open habitat caused by cutting should benefit it.** |
| Golden Ringed Dragonfly ***Cordulegaster boltonii*** | Kent Red Data Book | This is a nationally common species but localised in the drainage district. | Hammer Stream | **low** |
| Grass snake ***Natrix natrix*** | S41, UK BAP Species, Specially Protected species | There has been widespread declines in Grass snakes over the last 15 years. | Throughout | **Medium,** **Marginal fringes left alongside ditches should benefit this species.** **Hibernacula could be established alongside channels.** |
| Great Crested Newt ***Triturus cristatus*** | S41 UK BAP Species, Specially Protected species | National decline continuing due to loss of ponds. | Throughout | **Low** **This species is more closely associated with ponds.** |
| Great Silver Water Beetle ***Hydrophilus piceus*** | Kent Red Data Book | This species is classified as Near Threatened by the IUCN register. UK distribution is restricted following recent declines. | Ditches on Sheppey and North Kent Coast between Iwade and Whitstable. | **Medium** **Clean water is likely to be a requirement.** |

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| Greater Water Parsnip ***Sium latifolium*** | S41 UK BAP Species Red Data Book listed, Endangered | Scarce and declining | 1 record close to LM41 | **Medium** **Particularly sensitive to the right amount of disturbance. Not enough disturbance and the habitat can become scrubbed over. Too much grazing and the plants are eaten and the habitat trampled.** |
| Harvest Mouse ***Micromys minutus*** | S41, UK BAP Species | Populations of harvest mice are in decline in the UK. | Throughout | **Low** |
| Kingfisher ***Alcedo atthis*** | UK Scarce species, Amber listed species of conservation concern Specially Protected species | Kingfishers have declined in the UK due to water pollution reducing prey, wetland drainage and clearance of bankside vegetation. | Throughout | **High** **Protection of known nesting sites and creation of artificial nesting sites.** |
| Lapwing ***Vanellus vanellus*** | S41, UK BAP, Species, IUCN Red listed | Lapwing declined by 47% in South England between 1995 and 2012. The estimated breeding population of lapwing in Kent is 980-1200 pairs. | North Kent Marshes | **Medium** **Hydrology is a crucial factor in managing habitat for breeding waders.** |
| Large Wainscott moth ***Rhizedra lutosa*** | S41, UK BAP research species | Classed as vulnerable with an 86% decline in 35 years | Tanbridge area, Burnham Marsh | **Low** **A species of reed bed so drainage will impact.** |
| Marshmallow ***Althaea officinalis*** | Kent Red Data Book | Declined throughout most of its British range due to development and drainage. | The main occurrence of this plant is along Halling and Burnham Marsh with records for UMIDB7 Pottery Stream and Uplees Marsh in the Lower Medway District | **High** **This plant is intolerant of cutting and grazing and areas of ditch containing it should be managed by cutting on rotation.** |
| Marshmallow Moth ***Hydraecia osseola hucherardi*** | S41UK BAP species | This species is restricted to only a few scattered locations in Kent and East Sussex | Halling and Burnham Marshes | **Medium** **Channel management to retain larval food plant, marshmallow.** |
| Marsh Fern ***Thelypteris palustris*** | Kent Red Data Book | Declines due to drainage. | Upper Medway IDB 3 Sherway Occurs on LWS Angley Wood near Headcorn | **Medium** **A plant of wet woodland that has declined due to drainage. This plant may spread into neglected** |

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| | | | | **farm ponds and possibly ditch headwaters if less de-silting takes place.** |
| Marsh Ragwort ***Senecio aquaticus*** | Kent Red Data Book | Decline since 1950 due to drainage. Scrubbing over of former sites has caused local extinctions | Records associated with UMIDB 62 and 72. Upper Medway near to Chiddingstone Hoath | **Medium** **A plant associated with ditch habitat which requires permanently wet ground.** |
| Minor Shoulder Knot moth ***Brachylomia viminalis*** | S41, UK BAP research species | Vulnerable. Decline of 73% in the last 35 years. | Tanbridge area, LM17 | **Medium** **Species associated with wet woodland.** |
| Narrow Leaved Water Dropwort ***Oenanthe silaifolia*** | Kent Red Data Book | Reduced to small colonies on ditch banks and wet meadows in Sussex and Kent. Abandonment of pasture to scrub is likely to lead to further local extinctions. | Seasalter Levels, Near Sheerness, River Eden at Chiddingstone, Vexour Bridge and Moorden, River Medway at Haysden and east of Hale Street | **Low** **A plant of wet meadows that needs grazing or hay cutting to thrive. . Periodic flooding of clean calcareous water benefits this species.** |
| Noctule bat ***Nyctalus noctula*** | S41UK BAP species, Specially Protected | Common and widespread species. All roost sites protected by law. | Around Leybourne Lakes | **High** **Species associated with water. May roost in mature trees alongside rivers.** **All tree work on mature trees should take the possibility of bat roosts into account.** **Installation of bat boxes on structures may help.** |
| Norfolk Hawker dragonfly **Anaciaeschna isoceles** | S41 UK BAP Species | This species has always been scarce but maybe be recolonising historical sites. | Seasalter levels but likely to be in other areas. LM52 | **High** **Channels where this species breeds should be cleaned in stages.** **Water soldier could be introduced into neighbouring channels.** **Avoid year round high water levels. Summer levels should expose mud.** **Control heavy shade.** **Prevent saline intrusion into ditches.** |
| Opposite Leaved Pondweed ***Groenlandia densa*** | Kent Red Data Book | Declined since 1930's due to urbanisation and loss of spring fed ditches due to falling water levels. Decline in Kent has been serious | Historically at Burnham, Halling, Holborough and Graveney Marshes but recent surveys have failed to find this plant. | **Medium** **Maintain stable water levels in ditches in which this plant occurs. Periodic ditch clearance may help to remove competition and prevent eutrophication.** |

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| Otter ***Lutra lutra*** | S41, UK BAP Species, IUCN Amber listed, Near Threatened, Specially Protected | Otters suffered a catastrophic decline since the 1950's largely due to a chemical used in sheep dip. They are slowly recovering former territories. | Locations throughout the Upper Medway District | **Medium** **Advice to still water fisheries to avoid conflict.** **Retention of bankside trees with overhanging roots.** **Creation of artificial otter holts.** |
| Reed Bunting ***Emberiza schoeniclus*** | S41, UK BAP Species. Amber listed | 192,000–211,000 territories in 2000. The UK population fell by 31 per cent between 1970 and 2007. There has been a partial recovery over the last 15 years. | Throughout | **High** **Leave one bank uncut with seed heads intact to provide winter food source.** **Keep isolated bushes.** **Manage banks so as to maintain and extend areas of adjacent rank grassland.** |
| Rootless Duckweed ***Wolffia arrhiza*** | Kent Red Data Book | Declines in Kent | UMIDB72, 62,94, 52,71 | **Medium** **Prefers open water so regular management of watercourses should benefit this species.** |
| Round-headed Club Rush ***Scirpoides holoschoenus*** | S41 UK BAP species | Not known. Possibly extinct n | Near Conyer | **Low** **A plant that needs grazing to maintain its open conditions.** **Fencing of channels should be discouraged.** |
| Slender spike sedge ***Eleocharis uniglumis*** | Kent Red Data Book | Rare grazing marsh species | Holborough Meadows | **Medium** **A plant of wet meadows and calcareous marshes** |
| Slow Worm ***Anguis fragilis*** | S41 UK BAP species, Specially Protected species | Widespread and common | Throughout | **Low** **Leaving marginal fringes is likely to benefit this species** |
| Spruces bristle moss ***Orthotrichum sprucei*** | S41 UK BAP Species | Nationally scare moss with habitat restricted to inundation zone of rivers | Along the Eden and Medway | **Medium** **This plant grows on silt on tree bark so removal of bankside trees, and loss of periodic raises in water levels are likely to affect it.** |
| Three Lobed Water Crowfoot ***Ranunculus tripartitus*** | S41, UK BAP Species, Red Data Book listed, Endangered. | This species has declined severely across much of its range and is in danger of extinction. | UM3 Sherway | **Low** **Grazing is essential for this species and local ponds should not be drained.** |

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| True Fox Sedge ***Carex vulpina*** | S41, UK BAP Species, Red data Book listed, Vulnerable | A rare plant whose population in the Weald is of National significance. | Tanbridge area LM39 Holborough Marshes LM62 and throughout the Weald | **High** **Bankside trees and scrub should be controlled where this plant is present.** **Periodic flooding and disturbance encourages this plant to spread.** |
| Tubular Water Dropwort ***Oenanthe fistulosa*** | S41, UK BAP species, Red Data Book listed, Vulnerable | This species has declined due to drainage and reseeding of old grassland. | Tanbridge area, UM3, Throughout Lower Medway district. | **Medium** **A plant of grazing marsh habitat which needs an open aspect.** |
| Water Shrew ***Neomys fodiens*** | Kent Red Data Book | Because water shrews are never very abundant it is difficult to tell if they are under threat. | Throughout | **Medium** **Drainage schemes and river-bank clearance may adversely affect them by altering the water supply, reducing their food supplies, destroying their burrows and the vegetation cover.** **Bank work should take into account the needs of this species and check for records.** **They are very vulnerable to pollutants and pesticides in the water which they ingest indirectly via their prey and directly through their grooming activities.** |
| White Clawed Crayfish ***Austropotamobius pallipes*** | S41 UK BAP species, Specially Protected Species. | 50% decline in areas where this species occur since 1970's through habitat loss and transference of Crayfish Plague from introduced Signal Crayfish. | Upper Eden UM74 | **High** **Clean water is essential for crayfish.** **Gravels need to remain clean.** **Ensure all operators are aware of the need for stringent bio-security.** **Avoid disturbing channel gravels when cutting.** **Create refuge sites by adding boulders to channel.** **Leave woody debris in situ or pin to channel bed.** |
| Water Soldier ***Stratiotes aloides*** | Kent Red Data Book | Native populations have been in decline due to eutrophication. | Records associated with UM37 and channels on Seasalter Levels. | **High** **Reduce weed cutting to 50% where this plant is present.** |
| Water Vole ***Arvicola amphibius*** | S41, UK BAP species, Specially Protected Species | Britain's fastest declining mammal with a loss of around 30% between 2006 and 2015. | Throughout | **High** **Alternate bank cuts provide year round habitat.** **Culverting of watercourses should be resisted.** |

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|---|---|---|---|---|
| | | Grazing marsh ditches in Kent are of National importance. | | **All bank works must undertake a survey for Water Vole and advice from a qualified ecologist.** |
| Water Violet ***Hottonia palustris*** | Kent Red Data Book | Water violet has undergone a significant decline in the South East in recent years. | Burnham Marsh, Leybourne Lakes, UMIDB9 Hammer Stream and UMIDB3 Sherway | **High** **IDB Channels provide ideal conditions. Improved water quality by management to reduce run off will benefit this species.** |
| Yellow Wagtail ***Motacilla flava*** | S41 UK BAP Species, Red listed. | Yellow wagtail are in severe decline with a 43% reduction between 1995 and 2012. | North Kent Marshes | **Medium** **Maintain appropriate water levels on grazing marsh sites** |

## 4.11. Invasive Non-Native Species Summary

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

Table 9: High risk aquatic invasive non-native species summary

| Common & scientific name | Location within IDB if known | Year first recorded | Local status / Extent within drainage district | IDB potential for controlling species population or range |
|---|---|---|---|---|
| American Mink | throughout | Not known | North Kent Coast, Holborough Marshes with sighting's throughout the Upper Medway Catchment | Medium – High<br>Sightings of mink should be reported. Potential to become involved with partners in trapping projects |
| American Skunk Cabbage | UMIDB91, UMIDB 62 | 2010 | Haysden and Penshurst South, Bedgebury Pinetum close to the River Teise. | High – Spraying and physically digging the plants up are likely to be affective. |
| Chinese Mitten Crab | Close to LMIDB 34 | 2004 | Medway City Estate and Snodland, Allington Lock | Likely to undermine river banks leading to siltation. |
| Demon Shrimp | River Bewl | 2020 | Nearest watercourse UMIDB38 Upper Teise | Demon Shrimp can significantly affect the ecology of watercourses so Check Clean, Dry is imperative in this location. |
| Floating pennywort | Likely to be affecting channels on Seasalter levels | 2012 | Yalding. Seasalter, Claygate and Paddock Wood have historical infestations. Recent reports from the River Eden area are being investigated by the EA. | IDB management plan and control measures, and partnership working with Medway Valley Countryside Partnership carrying out manual removal. Defra are currently consulting on a trial of the weevil Listronotus elongates |
| Giant Hogweed | Upper Medway, Tiese, Gibbs, Beult | | Channels near Sittingbourne, Snodland and throughout Upper Drainage District. | IDB management plan and control measure alongside Medway Valley Countryside Partnership. Recording and treating plants takes place which is beginning to reduce Biomass |

| | | | | |
|---|---|---|---|---|
| Giant Rhubarb | UMIDB51 Close to LMIDB64 | 2018 | Oare Marshes and Groombridge | IDB management plan and control measure alongside partners. Spraying is probably most affective. |
| Himalayan Balsam | Throughout | unknown | Isolated location in Lower Medway, throughout Upper Medway | IDB management plan and control measure alongside partners. Hand pulling by volunteers or cutting are most affective. A Biocontrol agent is currently under preparation for use in the South East. |
| Japanese Knotweed | Exact locations need to be identified. Abundant on River Teise | Unknown | Locations throughout upper and lower Medway district | IDB management plan and control measure alongside partners. A plant classified as controlled waste. Care should be taken not to allow the spread of this plant. **This plant should not be cut or strimmed as this will allow it to spread.** |
| New Zealand Pigmyweed | Exact locations need to be identified. | Unknown | Scattered locations throughout the upper and lower Medway IDB district | Good biosecurity is essential to stop the spread of this species so exact location of channels needs to be identified and a management plan and control measures carried out alongside partners |
| Parrots Feather | Exact locations need to be identified. Appears to be close to UMIDB94A,18, 10 | Unknown | Appears to be close to Tonbridge, Around Snodland, near Queenborough and Faversham | IDB management plan and control measures, and partnership working. |
| Signal Crayfish | Exact locations need to be identified | Unknown | Reported at Eridge Stream, Bourne, Eden Brook, Fellbridge Water and locations around Groombridge. | Good biosecurity is essential to stop the spread of crayfish plague so exact location of channels needs to be identified and a management plan and control measures carried out alongside partners |
| Water Fern | Throughout | Unknown | Throughout | Control by release of North American weevils alongside Medway Valley Countryside Partnership |

| | | | | |
|---|---|---|---|---|
| Zebra Mussel | Leybourne Lake | 2003 | Leybourne Lake | Unlikely to affect IDB Channels. |

## 4.12. Water Level Management Plans

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

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

The table below provides further details of the Water Level Management Plans for which the IDB has some involvement within their drainage district. These Water Level Management Plans are over 20 years old and therefore much of the detail is now out of date.

Table 10: Water Level management plans in operation within the drainage district

| Site Name & Designation | Reason for WLMP (state main species or habitat) | WLMP lead and other key [partners | Favourable/ unfavourable condition (related to water level management) | Active Management by IDB | WLMP Last Updated |
|---|---|---|---|---|---|
| Leysdown to Kingsborough, Isle of Sheppey – Sheppey Cliffs & Foreshore SSSI. Small Section of SWALE RAMSAR site | Grazing marsh, breeding waders, winter wildfowl, water vole. | EA, IDB, Private Landowners | The RAMSAR and SSSI are in favourable condition but overall the WLMP states that the conservation objectives for the grazing marsh could not be met because of insufficient water available for this purpose. | The Plan states that the IDB are nominally responsible for maintaining water levels but no control structures exist. There are a number of private water control structures and pumps. The EA also has powers to control water levels within the district. | 1999 |
| Sheerness , Minster and Queenborough Medway Estuary and Marshes RAMSAR, SPA, SSSI SINCS Diggs and Sheppey Court Marshes, Minster Cliffs, Minster Marshes | Grazing marsh, water vole, breeding waders | IDB, EA, KWT | Lack of water is affecting aquatic floral interest and retention of fresh water on grazing marsh is an urgent requirement. At the time of the report Swale BC were concerned about WLM in Barton Ponds and Queenborough Lines. | The Plan states that the IDB are nominally responsible for maintaining water levels but occupiers modify levels on the **B**oard's behalf to achieve their aims. The EA also has powers to control water levels within the district. IDB maintain a number of drains, outfall sluices and | 1999 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | the Rushenden Pumping Station. | |
| Minster Marshes<br>NNR, RAMSAR, SPA, SSSI, SINCs | Grazing marsh, breeding waders, winter wildfowl, water vole, raptors, aquatic flora, invertebrate interest | EA, IDB, Elmley Conservation Trust, Private Landowners | SSSI's are in favourable condition but lack of water is affecting aquatic floral interest and retention of fresh water on grazing marsh is an urgent requirement for breeding waders. | The Plan states that the IDB are nominally responsible for maintaining water levels but occupiers modify levels on the **B**oard's behalf to achieve their aims. The EA also has powers to control water levels within the district exist. | 1999 |
| Eastchurch Marshes and Windmill Creek<br>NNR, RAMSAR, SPA, SSSI | Grazing marsh, breeding waders, winter wildfowl, water vole, raptors, aquatic flora, invertebrate interest | EA, IDB, RSPB. Elmley Conservation Trust, Private Landowners | SSSI's are in favourable condition but lack of water is affecting aquatic floral interest and retention of fresh water on grazing marsh is an urgent requirement for breeding waders.<br><br>The plan states that there is potential for conflict between arable farmers and graziers due to water shortages. | The Plan states that the IDB are nominally responsible for maintaining water levels but occupiers modify levels on the **B**oard's behalf to achieve their aims. The EA are responsible for maintaining water levels in Windmill Creek<br>The Lower Medway IDB controls one pumping stations in this area at Bells Drain. | 1999 |
| Elmley and Spitend Marshes<br>NNR, RAMSAR, SPA, SSSI | Grazing marsh, breeding waders, wintering wildfowl, raptors, water vole and invertebrate interest | EA, IDB<br>Elmley Conservation Trust | SSSI's for this area are in favourable condition. | The Plan states that the IDB are nominally responsible for maintaining water levels but occupiers modify levels on the **B**oard's behalf to achieve their aims. The EA also has powers to control water levels within the district exist. | 1999 |

# 5. Habitat and Species Action Plans

## 5.1. Introduction

Action plans comprise the objectives, targets and actions that the IDB has identified for each habitat and species to be included within the BAP. The following sections contain action plans for each of the habitats and species that have been prioritised by the IDB.

## 5.2. Habitat Action Plans

### 5.2.1 Boundary Habitats: Hedgerows and Riverside trees

This action plan focuses on hedgerows, a BAP habitat, but includes extra objectives and actions for riverside trees. Isolated and small groups of trees are important features within the drainage district both for their cultural significance and their importance to a range of species.

#### 5.2.1.1 National and Local Targets

Table 11:

| National Targets | Local Targets |
|---|---|
| UK BAP the latest national target was achieve favourable management of 25% of ancient and species rich hedges by 2000 and 50 % by 2005; halt net loss of species rich hedges by 2000 and all losses of hedgerows which are ancient and species rich by 2005; maintain overall numbers of hedgerow trees within each County or District at least at current levels to ensure a balanced age structure | Protect and restore existing trees and hedgerow whilst increasing the county's tree cover with the right trees in the right places to support recovery of wildlife and deliver natural climate change solutions. Restore 2250km and plant 2250km of species rich hedgerow in Kent. |

#### 5.2.1.2 IDB Objectives

Table 12:

| | IDB Objectives |
|---|---|
| 1 | **Ensure no net loss of hedges as a result of IDB activities** |

| | |
|---|---|
| **2** | **Increase extent of hedgerows within IDB** |
| **3** | **Protect ancient and heritage trees.** |
| **4** | **Plant and manage isolated trees and bushes along over exposed sections of river as part of shade management.** |

### 5.2.1.3 IDB Actions

Ensure that the actions relate directly to the objectives for the habitat as listed in the previous section

Table 13: **Objective 1: Ensure no net loss of hedges as a result of IDB Activities**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **1** | **1a** | Ensure that compensation planting takes place if any hedges are removed. To provide enhancement by being a wider species mix. | Length in m of hedges removed and hedges planted | If required | IDB Ops | Landowners |
| **1** | **1b** | Prevent damage to existing hedges (does not preclude management to allow watercourse maintenance, including coppicing) | Intact hedgerow in m this year compared to last | Ongoing | IDB Ops | Landowner |

**Objective 2: Increase extent of hedgerows within IDB**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Identify locations for new hedgerow planting and create new hedgerows or gap up existing hedgerows | Length of hedgerow planted M | **if required** | IDB Ops | Landowners Countryside Partnerships |

**Objective 3: Protect Ancient and heritage trees**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| 3 | 3a | Consider re- pollarding of bankside willow where appropriate to prolong life of trees and prevent trees splitting and blocking watercourses. | Number of willows pollarded | ongoing | IDB Ops | Landowners Specialist tree surgeons |
| 3 | 3b | Where tree management occurs use logs to create piles alongside riverbanks where appropriate to provide habitat for toads and insects. Log Piles can be part buried or held in place to prevent slipping into channel and causing obstructions | Number of log piles created | Ongoing | IDB Ops | Ecologist/ Countryside Partnerships |

**Objective 4: Plant and manage isolated trees and bushes along over exposed sections of river as part of shade management.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| 4 | 4a | Manage isolated bushes to keep them below 3 m providing a compact shape which doesn't impede bank or channel maintenance. | Number of bushes managed. | ongoing | IDB Ops | Maintenance staff |
| 4 | 4b | Identify locations to plant trees alongside over exposed river banks to benefit species such as reed bunting and provide pocket of shade which can help control aquatic plant growth and create more channel diversity. | Number of trees planted | ongoing | Ecologist, IDB Ops | Landowners. |

## 5.2.2 Drainage Ditches

### 5.2.2.1 National and Local Targets

Table 14:

| National Targets | Local Targets |
|---|---|
| N/A other than WFD | N/A other than WFD |

### 5.2.2.2 IDB Objectives

Table 15:

| | IDB Objectives |
|---|---|
| 1 | **To better understand the ecology of drainage ditches in order to identify ditches in favourable and unfavourable condition to create individual management plans for each channel.** |
| 2 | **To maintain the biodiversity present in ditches classified as in favourable condition.** |
| 3 | **To enhance the biodiversity within drainage ditches while maintaining drainage standards.** |
| 4 | **Improve water quality within ditches, rivers and streams.** |
| 5 | **Work to control invasive non-native species and ensure management practices are bio-secure. Actions under section 5.3.10 Invasive Species Action Plan** |

### 5.2.2.3 IDB Actions

Table 16:

**Objective 1: To better understand the ecology of drainage ditches in order to identify ditches in favourable and unfavourable condition to create individual management plans for each channel**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| 1 | 1a | Develop a quick assessment methodology for the survey of IDB watercourses | Methodology created | Winter 2021 | Ecologist | n/a |
| 1 | 1b | Undertake survey of IDB maintained watercourses, prioritising channels within designated sites, channels known to have issues, channels due to be de-silted and channels where capital works are due to take place. | Number of surveys completed each year | To begin 2022-2032 | Ecologist | Kent Botanical Recording group |
| 1 | 1c | Use survey data to produce individual management prescriptions for each channel to be used by contractors when undertaking annual management and by the Ops team when planning capital works. | Number of management sheets completed each year | To begin 2022-2032 | Ecologist | Ops lead |

**Objective 2. To maintain the biodiversity present in ditches classified as in favourable condition.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| 2 | 2a | Maintain marginal fringes of vegetation of at least 15cm wide (approx.)* along at least one side of all drainage ditches where flood risk allows. *Width of vegetation fringe is dependent upon flood risk category and drainage ditch width. Where a wider channel allows a wider fringe then establish, where flood risk prevents, act accordingly. Use drainage channel biodiversity manual as a guide. | Marginal fringes retained. . | Ongoing | Ops Lead | Maintenance staff |

| | | | | | | |
|---|---|---|---|---|---|---|
| **2** | **2b** | Where channel widths allow leave one bank uncut and retain seed heads on plants to provide winter food source for birds and cover for water vole. | Length of channel where one bank is left uncut | Ongoing | Ops lead | Maintenance staff |
| **2** | **2c** | Ensure operators do not scrape banks when undertaking annual maintenance or dredging operations | Banks not scraped | Ongoing | Ops lead | Maintenance staff. |
| **2** | **2d** | Use survey data and information available on land management aims to create water level management plans on designated sites | Number of water level management plans created | Ongoing | Clerk | Ops lead Ecologist Landowners |
| **2** | **2e** | Use Species Action Plans and survey data to maintain channels for priority species through suitable management techniques | Priority species continue to occupy channels | Ongoing | Ops lead | Ecologist |
| **2** | **2f** | Use survey data to identify floristically diverse channels and maintain existing management techniques | Length of channels with no loss of floristic diversity | Ongoing | Ecologist | Ops lead |
| **2** | **2g** | Undertake monitoring to ensure condition remains favourable | Number of channels monitored each year | Ongoing | Ecologist | Botanical recording groups. Countryside Partnerships |

**Objective 3. To enhance the biodiversity within drainage ditches while maintaining drainage standards.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **3** | **3a** | Identify ditches suitable to allow a continuous marginal fringe of vegetation at least 15cm wide (approx.) or more along at least one side of the ditch.* In areas identified, plant with suitable plugs, install coir rolls or allow colonization naturally. | Establishment/colonisation of new marginal vegetation in m each year | 31/12/2032 | Ops Lead | Ecologist |
| **3** | **3b** | Identify ditches which are too narrow for a continuous vegetation fringe to be installed, but where occasional patches of vegetation fringes can be encouraged. Plant with suitable plugs, install coir rolls or allow colonization naturally. | Length of occasional marginal vegetation patches established in m | 31/12/2032 | Ops Lead | Ecologist |

| | | | | | | |
|---|---|---|---|---|---|---|
| **3** | **3c** | Install marginal plant ledges during bank re-profiling and plant with sedge plugs or coir rolls | Length in m of plant ledge created each year | As required | Ops Lead | Ecologist |
| **3** | **3d** | Alternate bank side cutting each year where risk allows. Mowing to take place between August and April to avoid bird nesting season. 20cm or more from toe of bank to be left unmown on ditches where risk and ditch profile allows. | Increased extent of uncut ditch bank | Ongoing | Ops lead | Maintenance staff |
| **3** | **3e** | Remove bank-side cuttings where possible (with conveyor) to encourage sward diversity. Survey to identify diversity baseline and diversity following cuttings removal. | Survey highlights increased sward diversity after 5 years. | Ongoing | Ops Lead | Biological recording groups |
| **3** | **3f** | Establish a pollen-rich sward following bank re-profiling | Floristic species present in bank sward. | As required | Ops Lead | Countryside Partnerships |
| **3** | **3g** | Create pools at channel junctions to provide deep water refuge for fish during dry spells and benefit dragonfly | Number of pools created at ditch junctions | Ongoing during de-siting | Ops lead | Maintenance staff |
| **3** | **3h** | Identify ditches where shallow habitat created on ditch corners will not impeded water movement and create | Number of shallow areas created on ditch corners | 31/12/2032 | Ecologist | Ops lead |
| **3** | **3I** | Identify channels suffering low flows in summer and create two tier channels to allow passage of fish and retention of deep water habitat for invertebrates | Number of low flow channel created. | 31/12/2032 | Ops Lead | Ecologist |
| **3** | **3J** | Identify channels which are overly wide and restore to original width by the installation of artificial berms to create two tier channels and assist with silt transference. This action is dependent on flood risk of channel but could help alleviate flood issues in channel where silt build up is a regular occurrence. | Number of overly wide channels restored to original width. | 31/12/2032 | Ops lead | Ecologist |
| **3** | **3K** | Reduce weed cut to 50% where channel supports aquatic species in small numbers and a reduction in weed cutting could benefit these species. This action is dependent on the flood risk level of the channel | Number of suitable channels receiving 50% weed cut. | Ongoing | Ops lead | Maintenance staff |
| **3** | **3L** | Create cul-de-sac conservation areas at drain ends or headwaters where conditions allow. | Number of conservation areas created. | 31/12/2032 | Ops lead | Ecologist |

**Objective 4: Improve water quality within ditches**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **4** | **4a** | Incorporate testing of nitrates and phosphates into survey of channels | Testing included | Ongoing | Ecologist | Ops lead Maintenance staff |
| **4** | **4b** | Identify where possible source of high nitrate and phosphate levels or pollution incidents and work with partners to investigate. | Number of sources identified | Ongoing | Ops lead | EA |
| **4** | **4c** | Encourage and plant marginal plants alongside ditches to create buffer from chemical run off and spray drift from agriculture | Length of buffer strips planted | Ongoing | Ops lead | Countryside Partnerships |
| **4** | **4d** | Encourage landowners to create 5m buffer strips along channels to provide protection from run off. | Length of buffer strips planted | Ongoing | Ops Lead | Landowners /Natural England/ Catchment Partnerships. |
| **4** | **4e** | Encourage landowners to adopt low input policies to help reduce run off from land leading to accelerated weed growth in channels. | Reduced levels of pollutants in channels | Ongoing | All | Landowners/ Natural England/RPA/ Countryside Partnerships/ Catchment Partnerships |
| **4** | **4f** | Create ongoing monitoring programme of water quality. | Monitoring programme created | Ongoing | Ops lead | Ecologist/ maintenance staff/ Catchment Partnerships |
| **4** | **4g** | Support SERT and partners in Preventing Plastic Pollution in the Medway Project **( 6.3 Actions 8a-8c)** | Support given | Ongoing | Clerk | Ops lead |
| **4** | **4h** | Support SERT in creating reed bed linking sewage works to UMIDB57 Delaware System | Support given | Ongoing | Clerk | SERT |

### 5.2.3 Floodplain Wetland Habitats

This habitat action plan encompasses all habitat types within the drainage district affected by water level management and drainage. This includes grazing marsh, fenland, lowland meadows and wet woodland. Although the nature of the management of these habitats varies they have been included in one action plan to avoid repetition as the actions the IDB can take to enhance and protect these habitats are similar in all cases.

#### 5.2.3.1 National and Local Target

Table 17:

| National Targets | Local Targets |
|---|---|
| **Coastal and floodplain grazing marsh**<br>Maintain extent of habitat with no net loss. Maintain condition of habitat where already favourable and establish favourable management in all areas of grazing marsh by 2010. Restore and improve 7500ha of relict habitat by 2015.<br>**Lowland Fen**<br>Maintain current extent of fen resource and types, maintain condition of fen habitat where already favourable and establish favourable management in all areas by 2020. Initiate restoration of 1500ha of former fen habitat across England by 2015.<br>**Reed bed**<br>Maintain the extent of existing resource by active management, priority being blocks over 2ha, Maintain condition of wet reed bed habitat where favourable and establish favourable management in areas deemed unfavourable by 2020. Create 1900ha of reed bed on land of low nature conservation interest by 2015.<br>**Wet woodland**<br>Maintain current habitat extent. Achieve favourable condition in 80% of the total area of wet woodland and 100% on designated sites by 2004. Initiate restoration of 100% of wet woodland by 2015. Create 6750ha of wet woodland by 2015.<br>**Lowland Meadows**<br>Maintain current extent. Achieve favourable or recovering condition on 7088ha by 2010. Restore 481ha of lowland meadow by 2015. Re-establish 256ha by 2015. | **Coastal and floodplain grazing marsh –** 2000ha restored in Kent by 2025, 11464ha maintained and 917ha restored in Sussex. 7ha created in Holmedale wetland in Surrey.<br>**Lowland Fen –** 908 ha maintained, 454ha restored and 227ha restoration initiated in Sussex.<br>**Reed bed –** 260ha maintained, 208ha in favourable or recovering condition, 104ha created in Sussex. 3ha created in Holmesdale wetlands Surrey.<br>**Wet woodland –** 10ha created in Kent by 2025. 4ha of wet woodland will be created in the Thames Basin Heaths area of Surrey.<br>**Lowland Meadows –** 100ha enhanced and restored in Kent by 2025. 1386ha maintained, 1109ha in favourable or recovering status, 83ha of meadow restored, 41ha re-established in Sussex. |

### 5.2.3.2 IDB Objectives

Table 18

| IDB Objectives | |
|---|---|
| 1 | **Maintain wetland sites in favourable condition in accordance with water level management plans.** |
| 2 | **Work with partners and landowners to achieve optimal water level management on sites managed for wildlife such as flood plain grazing marsh managed for breeding waders.** |
| 3 | **Work with partner to identify locations for restoration of wet woodland and creation of new wet woodlands.** |

### 5.2.3.3 IDB Actions

**Objective 1: Maintain wetland sites in favorable condition in accordance with water level management plans.**

Table 19

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| **1** | **1a** | Maintain water levels in IDB watercourses in accordance with recommendations in Water level management plans. | Water level habitat remains favourable to surrounding habitats. | Ongoing | Ops lead | EA<br>Wildlife Trusts<br>RSPB |

**Objective 2: Assist partners in restoring wetland habitats.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| **2** | **2a** | Work with landowners to encourage beneficial water level management of sites currently in unfavourable | Number of sites achieving favourable status | Ongoing | Ops lead | Wildlife Trusts<br>Landowners |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | status due to drainage. | | | | Natural England Countryside Partnerships EA |
| **2** | **2b** | Use survey data to identify undesignated areas of wetland habitat affected by water level management in IDB watercourses and liaise with landowners to discuss favorable management | Number of discussions with landowners | Ongoing | Ops lead | Ecologist Wildlife Trusts,, EA |
| **2** | **2c** | Investigate option for using natural flood management to reconnect channels with the floodplain where this would be beneficial to habitats such as reed beds. Prioritising areas where downstream flooding is known | Number of NFM projects identified | 31/12/2032 | Ecologist | Ops lead SERT, EA Catchment Partnerships |
| **2** | **2d** | Work with partners to fix broken structures which are contributing to inability to control water in areas of wetland habitat. | Number of structures identified and fixed | Ongoing | Ops lead | EA, Landowners |
| **2** | **2e** | Consent works affecting IDB channels where this would lead to restoration or creation of wetland habitat. | Consents given | Ongoing | Ops lead | Landowners |

**Objective 3**: **Work with partner to identify locations for restoration of wet woodland and creation of new wet woodlands.**

| **Action Plan** | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **3** | **3a** | Use survey data to identify location for restoration of wet woodland. | Number of areas identified | 31/12/2032 | Ecologist | Landowners |
| **3** | **3b** | Use natural flood management to re-establish natural hydrological process's in wet woodlands adjacent to IDB channels. | M of NFM created | 31/12/2032 | Ops lead | Ecologist Wildlife Trusts Catchment Partnerships Landowners |
| **3** | **3b** | Use survey data to identify locations for wet woodland creation prioritising areas where woodland planting would alleviate downstream flooding. Work with landowners and partners to plant new pockets of wet woodland | Ha of wet woodland created | 31/12/2032 | Ops lead | Landowners Wildlife Trusts Catchment Partnerships. |

## 5.2.4 Rivers and Streams

### 5.2.4.1 National and Local Target

Table: 20

| National Targets | Local Targets |
|---|---|
| All SSSI chalk rivers to be in favourable condition by 2030. Achieve good ecological status for all non-designated chalk rivers by 2030. Restore 150km of non designated chalk river habitat quality.<br>The EA aimed to achieve good status on 60% of all rivers by 2021 through the Water Framework Directive. | 105km of waterways improved by 2025 in Kent. Raise the profile and prioritise the restoration of chalk rivers. Sussex to achieve good ecological status for 26km of chalk river and restore 5km. |

### 5.2.4.2 IDB Objectives

Table 21

| | IDB Objectives |
|---|---|
| 1 | **Maintain and enhance natural geomorphology of rivers and stream while maintaining drainage and flood prevention standards.** |
| 2 | **Maintain and enhance biodiversity of rivers and streams.** |
| 3 | **Improve water quality – Actions under 5.2.2 Drainage Ditch Action Plan** |
| 4 | **Work to control invasive non-native species and ensure management practices are bio-secure – Actions under 5.3.10 Invasive Species Action Plan** |

### 5.2.4.3 IDB Actions

**Objective 1: Maintain and enhance natural geomorphology of rivers and streams, while maintaining drainage and flood prevention standard**

Table 22

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **1** | **1a** | Ensure no loss of open channels through culverting consents | No loss | Ongoing | Clerk | |
| **1** | **1b** | Ensure all other options are considered before hard engineering is consented | Number of other options trialled where hard engineering was suggested. | ongoing | Clerk | Ecologist |
| **1** | **1c** | Protect channels from being widened deepened and canalised by dredging | No channels widened, deepened or canalised | Ongoing | Ops lead | Maintenance Staff. |
| **1** | **1d** | Ensure no gravels are removed from river beds during maintenance operations | No loss of gravels | Ongoing | Ops lead | Maintenance staff |
| **1** | **1e** | Identify locations where natural flood management would allow channel to reconnect with their floodplains and alleviate downstream flooding. | Number of locations identified | 31/12/2032 | Ecologist | Ops Lead SERT Catchment Partnerships, EA |
| **1** | **1f** | Remove culverts and weirs where possible such as at UMIDB93. | Number of culverts and weirs removed | Ongoing | Ops lead | SERT |
| **1** | **1g** | Restore overly wide channels to natural width through creation of artificial berms or installation of woody debris. | M of channel restored to original width | 31/12/2032 | Ops lead | Ecologist Countryside Partnerships Catchment Partnerships |
| **1** | **1h** | Create pool riffle sequences in overly homogenous channels through manipulation of gravels or installation of woody debris | M of pool riffle sequence created | 31/12/2032 | Ops lead | Ecologist Countryside Partnerships Catchment Partnerships |
| **1** | **1i** | Restore meanders to channels through installation of woody debris such as along UMIDB107 | M of meanders restored | 31/12/2032 | Ops lead | Ecologist SERT |

**Objective 2 Maintain and enhance biodiversity of rivers and streams.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Install woody debris as fish nursery grounds in channels where this will not impact on flood risk | M of woody debris installed | 31/12/2032 | Ops Lead | Ecologist Countryside Partnerships. |
| **2** | **2b** | Install cobbles in channel which support or historically supported white clawed crayfish and bullhead and where this resource is limited. | number of cobbles installed | 31/12/2032 | Ops lead | Ecologist Countryside Partnerships |
| **2** | **2c** | Create wet berms planted with wetland species alongside channel with hard engineered banks to create refuge spaces for wildlife and | M of wet berms created | 31/12/2032 | Ops lead | Ecologist Countryside Partnerships. |
| **2** | **2d** | Stabilize banks with tree planting where slippage may occur and increase silt load in streams and rivers | Trees planted to prevent slippage | Ongoing | Ops lead | Maintenance staff |
| **2** | **2e** | Use coir rolls or faggots to prevent bank erosion leading to slippages. | M of coir rolls installed | Ongoing | Ops lead | Maintenance staff |
| **2** | **2f** | Remove trees and bushes where channels are overly shaded | M of channel opened up to light | Ongoing | Ops lead | Ecologist |
| **2** | **2g** | Plant trees where channels are overly exposed. | Number of trees planted | Ongoing | Ops lead | Ecologist |
| **2** | **2h** | Install fish and eel passes as per action plans for these species. | Number of fish and eel passes installed | 31/12/2032 | Ops lead | Catchment Partnerships EA Countryside Partnerships |
| **2** | **2i** | Consider creation of two tier low flow channels where this would aid fish passage and provide deep water refuge for species during periods of drought. | M of low flow channel created | Ongoing | Ops lead | Ecologist |

## 5.3. Species Action Plans

### 5.3.1 Wetland plants grouped species

This action plan contains a number of species occurring in the drainage district. Three have been prioritised because they are UK BAP species (Greater Water Parsnip, Spruces Bristle Moss and True Fox Sedge). Other species such as, bladder sedge, dittander, marshmallow, marsh fern, opposite leaved pondweed and water violet are included because of their national or regional scarcity coupled with the impact IDB maintenance activities are likely to have upon them. . The decision was taken to group species in one plan because the key objectives of maintaining and increasing the size and range of species is common to all.

#### 5.3.1.1 National and Local Targets

Table: 23

| National Targets | Local Targets |
|---|---|
| **Carex Vulpina – True Fox Sedge** – ensure viable populations are maintained on all sites. Restore populations at 5 suitable sites by 2003.<br>**Sium Latifolium – Greater Water Parsnip** – Maintain UK range of this plant. Ensure viable populations are maintained. Provide opportunities for the spread of this plant from viable sites.<br>**Orthotrichum sprucei – Spurce's bristle moss** – maintain current populations. | .Kent Biodiversity Strategy includes a target for True Fox Sedge. Update monitoring data for this species with a view to verifying decline and determining what actions might be appropriate (i.e. by managing the invasive growth of trees and scrub around ponds and ditch margins.) |

#### 5.3.1.2 IDB Objectives

Table 24

| | IDB Objectives |
|---|---|
| 1 | **Enable survey work to take place on IDB maintained channels.** |
| 2 | **Ensure appropriate management of IDB watercourses to maintain the size and range of known populations of priority plants and favourable manage ditches of high floristic interest.** |

| | |
|---|---|
| 3 | **Work with partners to better understand appropriate management of existing populations and actions to increase range.** |

### 5.3.1.3 IDB Actions

Table 25

**Objective 1 Enable survey work to take place on IDB maintained channels**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| 1 | 1a | Undertake ditch survey to identify channels of high floristic interest. | Ditch survey undertaken | 31/12/2032 | Ecologist | Specialist Recorders |

**Objective 2: Ensure appropriate management of IDB watercourses to maintain the size and range of known populations of priority plants and favourable manage ditches of high floristic interest.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| 2 | 2a | Using survey data create individual management sheets for watercourses with appropriate management for priority species. | Individual management sheets created for all channels | 31/12/2032 | Ecologist | Ops lead Maintenance staff |
| 2 | 2b | Ensure bank cuts help to maintain populations of priority plant species such as marshmallow. | No loss of priority species through bank cutting | Ongoing | Ops lead | Maintenance staff |
| 2 | 2c | Consider removing vegetation from cut banks in areas of high floristic diversity to prevent build-up of nutrients. | M of cuttings removed | Ongoing | Ops lead | Maintenance staff |
| 2 | 2d | Consider leaving headwaters uncut where a reduction in management would benefit species such as marsh fern. | M of headwaters left uncut | Ongoing | Ops lead | Ecologist Maintenance staff |

| | | | | | | |
|---|---|---|---|---|---|---|
| **2** | **2e** | Consider less frequent weed cuts on channels containing Greater Water Parsnip | Reduction in weed cutting on affected channels. | Ongoing | Ops lead | Ecologist |
| **2** | **2f** | Consider targeted management for priority species where populations are low including removal of other abundant species, transfer of seeds of rhizomes from other sites. | M of targeted management undertaken | Ongoing | Ops lead | Ecologist Maintenance staff Countryside Partnerships Catchment Partnerships |
| **2** | **2g** | Where possible increase the range of priority aquatic plants by planting them in channels where conditions are suitable. | M of planting undertaken | Ongoing | Ops lead | Ecologist Maintenance staff Countryside Partnerships |
| **2** | **2h** | Where capital works are likely to leave bare earth consider reseeding banks or margins with a floristically diverse sward mixtures or planting priority plant species. | Measures undertaken when capital works are necessary | When suitable | Ops lead | Maintenance staff. |

**Objective 3 Work with partners to better understand appropriate management of existing populations and actions to increase range.**

| **Action Plan** | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **3** | **3a** | Enable ongoing monitoring of sites by specialist surveyors to ensure populations of priority plant species are being maintained. | Ongoing monitoring undertaken | Ongoing | Clerk | Kent Biological Recorders |
| **3** | **3b** | Work with partners to better understand the management of priority species. | Management practices altered with increased knowledge | Ongoing | Ecologist | Kent Biological Recorders. |

## 5.3.2 Fish Group Species Action Plan

The grouped action plan for fish hopes to bring about benefits for all fish species but prioritises two UK BAP species European Eel and Brown Trout and two species which are nationally or locally scarce or protected and occur within the drainage district, these are Brook Lamprey and Bullhead or Millers Thumb.

### 5.3.2.1 National and Local Targets

Table 26

| National Targets | Local Targets |
|---|---|
| ***Anguila anguilia – European Eel***<br>Under EU legislation all member states were required to produce a National Eel Strategy with a target of 40% escapement of silver eel.<br>***Salmo trutta- Brown Trout – Not found*** | European Eel – Kent Biodiversity Strategy – Demonstrable progress in silver eel escapement in all catchments. Secure access for eel to an additional 200km habitat |

### 5.3.2.2 IDB Objectives

Table 27

| | IDB Objectives |
|---|---|
| 1 | **Assist with eel survey and monitoring programmes.** |
| 2 | **Ensure appropriate management of IDB channels to maintain and where possible increase the size and range of populations of priority fish species.** |
| 3 | **Undertake enhancement projects to improve habitat quality for fish species.** |
| 4 | **Assist the free movement of fish species through IDB maintained channels.** |

### 5.3.2.3 IDB Actions

Table 28

**Objective 1 Assist with eel survey and monitoring programmes.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **1** | **1a** | Support partner organisations in facilitating access for survey of eel populations. | Partner organisations gain access to undertake survey. | Ongoing | Clerk | Medway Swale Estuary Partnership Zoological Society of London |
| **1** | **1b** | Provide record form to maintenance staff to record eel sightings and landings. | Record form created and used. | 2025 | Ecologist | Ops lead |
| **1** | **1c** | Submit records of eel sighting and landings to KMBRC. | Records submitted | Ongoing | Ops lead | Maintenance staff |

**Objective 2: Ensure appropriate management of IDB channels to maintain and where possible increase the size and range of populations of priority fish species.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Training in use of dissolved oxygen meters given to maintenance staff | Training delivered | 2022 | Ops lead | Maitenance staff |
| **2** | **2b** | Check dissolved oxygen levels before weed cutting especially during warm weather and low flow conditions | No fish kill due to dissolved oxygen levels | Ongoing | Ops lead | Maintenance staff |
| **2** | **2c** | Maintain flow sufficient to sustain fish populations on modified systems and allow natural flow regimes to remain on near natural rivers as long low flows do not breach survival levels. | No fish kill due to low flows | Ongoing | Ops lead | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **2** | **2d** | Do not remove woody debris from channel unless it is a clear flood risk. Consider pinning in place instead of removal. | Number of pieces of woody debris left in channel. | Ongoing | Ops lead | Maintenance staff |
| **2** | **2e** | Consider rotational weed cutting in-channel to create a mosaic of open and densely vegetated areas. | M of rotational cutting | Ongoing | Ops lead | Ecologist Maintenance staff |
| **2** | **2f** | In near natural watercourses retain features such as meanders, pools and riffles. | Natural geomorphology remains in tact | Ongoing | Ops lead | Maintenance staff |
| **2** | **2g** | Create pools at channel junctions to act as deep water refuge for fish. | Number of pools created | Ongoing | Ops lead | Maintenance staff. |
| **2** | **2h** | Consider leaving headwaters and ditch corners as shallow water habitat for eels. | Area of headwaters and ditch corners left as shallow water habitat | Ongoing | Ops lead | Maintenance Staff |

**Objective 3: Undertake enhancement projects to improve habitat quality for fish species.**

| **Action Plan** | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **3** | **3a** | Identify locations in channel supporting fish species such as trout, brook lamprey and bullhead where installation of woody debris would help improve habitat conditions for these species without impacting on flood risk. | Locations identified. M of woody debris installed | Ongoing | Ecologist | Ops lead SERT, EA |
| **3** | **3b** | Install cobbles in channel containing bullhead to provide shelter. | Number of cobbles installed | 2032 | Ecologist | Ops lead Maintenance staff Countryside Partnerships SERT |
| **3** | **3c** | Improve geomorphology of river channels by manipulating gravels to create pool/riffle sequences. | M of pool riffle sequence created | Ongoing | Ecologist | Ops lead Maintenance staff |

**Objective 4 Assist the free movement of fish species through IDB maintained channels.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **4** | **4a** | Ensure that fish passes are included when control structures are renewed which will allow passage even during low flows. | Number of fish passes installed | Ongoing | Ops lead | SERT Catchment Partnerships |
| **4** | **4b** | Install fish pass at UMIDB27 Tudely Brook | Fish pass installed | 2032 | Ops lead | SERT Medway Catchment Partnership |
| **4** | **4c** | Ensure fish passes are regularly cleaned | Fish passes cleaned | Ongoing | Ops lead | Maintenance staff |
| **4** | **4d** | Return eels to the water if they have been landed during weed cutting or de-silting operations | Eels returned | Ongoing | Ops lead | Maintenance staff |
| **4** | **4e** | Consider creating low flow channels in watercourses known to suffer from low flow conditions. | M of low flow channel created | Ongoing | Ops lead | Maintenance staff |
| **4** | **4f** | Assist partners in identifying and removing blockages to fish passage from tidal flaps and outfalls | Number of blockages identified and removed | Ongoing | Ops lead | Catchment Partnerships Zoological Society of London |
| **4** | **4g** | Advise landowners to remove and re-instate raised culverts which may impede fish passage at low flows | Number of landowners advised | Ongoing | Ops lead | Landowners. |
| **4** | **4h** | Support research work into Archimedes Screw Technology at Bells Pumping Station to reduce eel mortality. | | 2032 | Clerk | Ops lead Catchment Partnerships Zoological Society of London EA |

| | | | | | | |
|---|---|---|---|---|---|---|
| **4** | **4i** | Use findings of research at Bells Pumping Station to upgrade other pumping stations to reduce eel mortality | | 2032 | Clerk | Ops lead ZSL |
| **4** | **4j** | Investigate weir removal and creation of rock ramp to allow fish passage at UMIDB93 | Weir removed and rock ramp created | 2032 | Clerk | SERT |
| **4** | **4k** | Investigate with SERT potential removal of Darman's sluice on UMIDB26 to enable free movement of fish and reduce erosion. | Potential investigated | 2025 | Clerk | SERT |

## 5.3.3 Dragonfly and Damselfly Group Species Action Plan

This action plan targets two species, Norfolk Hawker, a BAP species and Dainty blue damselfly, a Kent Red Data Book species but actions are designed to help a range of dragonfly and damselfly species. These actions should also benefit other aquatic invertebrates and species such as moths which rely on marginal vegetation.

### 5.3.3.1 National and Local Targets

Table 29

| National Targets | Local Targets |
|---|---|
| **Norfolk Hawker dragonfly**<br>**Anaci aeshna isoceles**<br>**No Action plan available** | A priority species recorded in Kent. No local targets have been set. |

### 5.3.3.2 IDB Objectives

Table 30

| | IDB Objectives |
|---|---|
| 1 | **Ensure where possible appropriate regular management of IDB watercourses to maintain and possibly increase the size and range of populations of dragonflies and damselflies.** |
| 2 | **Undertake enhancements of channels to improve habitat for dragonflies and damselflies.** |

### 5.3.3.3 IDB Actions

Table 31

**Objective 1: Ensure where possible appropriate regular management of IDB watercourses to maintain and possibly increase the size and range of populations of dragonflies and damselflies.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **1** | **1a** | Undertake less frequent, sectional or minimal weed cut in channels where priority species present and where this will not impact on flood risk. | M of channel weed cut sectionally or on rotation | Ongoing | Ops lead | Maintenance staff |
| **1** | **1b** | Where possible cut vegetation in strips on a 4 year rotation where this will not impact on priority plants. | M of channel cut in strips | Ongoing | Ops lead | Maintenance staff |
| **1** | **1c** | Allow wide marginal shelves and leave one bank uncut in areas where Norfolk hawker breed in order to minimise effects of diffuse pollution. | M of channel with wide margins | Ongoing | Ops lead | Maintenance staff |
| **1** | **1d** | Undertake de-silting on channels containing priority species in stages ensuring that some areas remain undisturbed. | M of channels de-silting in stages | Ongoing | Ops lead | Maintenance staff |
| **1** | **1e** | Prevent incursions of saline water into channels known to contain breeding Norfolk Hawker. | Number of incursions prevented | Ongoing | Ops lead | Maintenance staff |

**Objective 2: Undertake enhancements of channels to improve habitat for dragonflies and damselflies.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Create pools at junctions to benefit damselflies and dragonflies | Number of pools created | Beginning 2022 | Ops lead | Maintenance staff |
| **2** | **2b** | Construct artificial berms along channels where marginal vegetation is scant or absent and where these berms will not impact on flood risk. | M of artificial berms constructed | Ongoing | Ops lead | Maintenance staff |
| **2** | **2c** | Create shallow water habitat on ditch corners where this will not impact on water movement | M of shallow water habitat created | Ongoing | Ops lead | Maintenance staff |
| **2** | **2d** | Do not remove trees from channels close to Norfolk Hawker breeding sites. | Trees not removed | Ongoing | Ops lead | Maintenance staff |

| | | | | | | |
|---|---|---|---|---|---|---|
| **2** | **e** | Consider planting isolated trees along channels that are over exposed to act as resting places for dragonfly where this will not impact on management for species such as breeding wader. | Number of trees planted | Ongoing | Ops lead | Ecologist. |

### 5.3.4 Bat Grouped species action plan

Two bat species, Noctule and Pipistrelle are priorities for the drainage district but it is likely that other bats are using the channels as feeding areas and IDB activities carried out as part of this action plan could benefit all species.

#### 5.3.4.1 National and Local Targets

Table 32

| National Targets | Local Targets |
|---|---|
| Nycatus noctula – Noctule bat<br>There does not appear to be an action plan for this BAP species | There are no local targets for this species. |

#### 5.3.4.2 IDB Objectives

Table 33

| | IDB Objectives |
|---|---|
| 1 | **Ensure that IDB management does not impact on bat roosts or hibernation sites.** |
| 2 | **Undertake management to enhance watercourses for bats where appropriate.** |

#### 5.3.4.3 IDB Actions

Table 34

**Objective 1: Ensure that IDB management does not impact on bat roosts or hibernation sites.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| **1** | **1a** | Undertake a survey of mature trees across the drainage district to check for potential bat roost of hibernations | Number of mature trees check | 21/12/2032 | Suitably qualified | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | sites. | | | Ecologist | |
| **1** | **1b** | Fill in a tree inspection form prior to tree work taking place . | Inspection form created and filled in before work begins | Ongoing | Ops lead | Maintenance staff |
| **1** | **1c** | Retain bankside trees and re plant if removal is necessary. | Number of trees replanted | Ongoing | Ops lead | Maintenance staff |
| **1** | **1d** | Retain standing dead wood alongside channels where possible. | Standing dead wood maintained | Ongoing | Ops lead | Maintenance staff |
| **1** | **1e** | Where tree work is necessary ensure that these works are carried out at time least disruptive for bats i.e. Sept-Nov. | Work taking place only in these months | Ongoing | Ops lead | Maintenance staff. |
| **1** | **1f** | When felling trees covered in ivy allow a 24hr rest period before de-limbing and removing ivy. | Trees left for 24hr | Ongoing | Ops lead | Maintenance staff |

**Objective 2: Undertake management to enhance watercourses for bats where appropriate.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Allow a fringe of vegetation to remain alongside watercourses and, where possible leave one bank uncut to encourage abundant insects | Channels have fringe or alternate bank cut implemented | Ongoing | Ops lead | Maintenance staff |
| **2** | **2b** | Pollard or re-pollard suitable willow trees to provide habitat for bat roosts. | Number of willow pollarded | 31/12/2032 | Ops lead | Tree surgeon |
| **2** | **2c** | Erect bat boxes on structures and tall trees. | Number of bat boxes erected | 31/12/2032 | Ops lead | Maintenance staff. |

## 5.3.5 White Clawed Crayfish Action Plan

### 5.3.5.1 National and Local Targets

Table 35

| National Targets | Local Targets |
|---|---|
| Maintain present distribution of the species by limiting the spread of crayfish plague, limiting the spread of non-native species and maintaining appropriate habitat conditions. | No local targets for this species. |

### 5.3.5.2 IDB Objectives

Table 36

| IDB Objectives | |
|---|---|
| 1 | **Ascertain the distribution of the White clawed crayfish in IDB channels**. |
| 2 | **To maintain number and range of white clawed crayfish in IDB channels.** |
| 3 | **To enhance channels adjacent to white clawed crayfish habitat to allow species to spread.** |

### 5.3.5.3 IDB Actions

Table 37

**Objective 1: Ascertain the distribution of the White clawed crayfish in IDB channels.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| **1** | **1a** | Work with partners to survey for White clawed crayfish as opportunities arise. | Survey of IDB channels conducted | Ongoing | Clerk | EA Catchment Partnerships |

**Objective 2: To maintain number and range of white clawed crayfish in IDB channels**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Cut channels supporting white clawed crayfish in ways to ensure minimal disturbance to the channel bottom. Potentially by hand. | Change in channel cuts to lessen impact on channel bed | Ongoing | Ops lead | Maintenance staff |
| **2** | **2b** | Resist removal of in-channel debris from channels known to support white clawed crayfish unless a major obstruction to flows. | Areas of debris left in tact | Ongoing | Ops lead | Maintenance staff |
| **2** | **2c** | Resist removal of trees with roots in the channel from channels known to support white clawed crayfish | Trees left in situ | Ongoing | Ops lead | Maintenance staff |
| **2** | **2d** | Train maintenance staff in bio-security measures for white clawed crayfish. | Training provided and updated regularly | 31/12/2022 | Ecologist | Ops lead Medway Valley Catchment Partnership |
| **2** | **2e** | Work to maintain flows, oxygen levels and water quality in IDB Channels known to support white clawed crayfish. | Channels are of good quality | Ongoing | Ops lead | |

**Objective 3: To enhance channels adjacent to white clawed crayfish habitat to allow species to spread.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **3** | **3a** | Consider tree planting of alder on channel adjacent to white clawed crayfish channels to provide root habitat alongside banks. | Number of trees planted | 31/12/2032 | Ops lead | Catchment Partnership SERT |
| **3** | **3b** | Allow thick buffer strips to develop alongside channels by cutting in sections or on rotation instead of annually. This will help reduce siltation and run off of agricultural chemicals. | M of thick buffer strips beside White clawed crayfish channels | Ongoing | Ops lead | Maintenance staff |

| | | | | | | |
|---|---|---|---|---|---|---|
| **3** | **3c** | Install woody debris as flow deflectors in overly wide channels to vary flow and create areas of self-scour as well as providing refuges for crayfish | Number of locations where woody debris installed | 31/12/2032 | Ecologist | Ops lead SERT Countryside Partnerships |
| **3** | **3d** | Consider installing boulders i.e. in pools in channels where there are few refuges for crayfish. | Boulders installed | 2032 | Ecologist | Ops lead SERT Countryside Partnerships |

## 5.3.6 Common Toad Action Plan

### 5.3.6.1 National and Local Targets

Table 38

| National Targets | Local Targets |
|---|---|
| **Bufo bufo – common toad**<br>There appears to be no action plan for this species. | There are no local targets for this species |

### 5.3.6.2 IDB Objectives

Table 39

| | IDB Objectives |
|---|---|
| 1 | **Ensure appropriate management of IDB watercourses to maintain and where possible increase the numbers and range of common toad populations.** |
| 2 | **Enhance channels for common toad as part of annual maintenance.** |

### 5.3.6.3 IDB Actions

Table 40

**Objective 1: Ensure appropriate management of IDB watercourses to maintain and where possible increase the numbers and range of common toad populations**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| **1** | **1a** | Ensure water levels remain sufficient to support populations of common toad. | No loss of toads due to low water levels | Ongoing | Ops lead | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **1** | **1b** | Introduce rotational cutting of marginal vegetation in channels known to support common toad. | M of channel cut on rotation | Ongoing | Ops lead | Ecologist |
| **+1** | **1c** | Reduce weed cut in channels supporting common toad where this will not impact on flood risk. | M of channel weed cut at 50% | Ongoing | Ops lead | Maintenance staff Ecologist |
| **1** | **1d** | Retain hedges and trees along channels. | Hedges and trees retained | Ongoing | Ops lead | Maintenance staff. |

**Objective 2: Enhance channels for common toad as part of annual maintenance.**

| **Action Plan** | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Create pools at channel junctions. | Number of pools created | Ongoing | Ops lead | Maintenance staff |
| **2** | **2b** | Use debris from tree cutting to create log piles pinned in place to prevent them falling back into channels during any flood events. | Number of log piles created | Ongoing | Ops lead | Countryside Partnerships. |

## 5.3.7 Reed Bunting Action Plan

### 5.3.7.1 National and Local Targets

Table 41

| National Targets | Local Targets |
|---|---|
| Halt or reverse the decline in numbers of reed bunting. Sustained recovery to 50% higher than 1996 levels | No local targets. |

### 5.3.7.2 IDB Objectives

Table 42

| IDB Objectives | |
|---|---|
| 1 | **Ensure IDB management is appropriate to maintain the size and range of reed bunting population.** |

### 5.3.7.3 IDB Actions

Table 43

**Objective 1: Ensure IDB management is appropriate to maintain the size and range of reed bunting population.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| **1** | **1a** | Where reeds are present consider mowing channels later in the year (August-September) to avoid 2nd brood attempts by late nesting birds. | Number of banks mown later in the year | Ongoing | Ops lead | Maintenance staff |
| **1** | **1b** | Undertake alternate bank cuts where reed buntings are present leaving seed heads on reed where channels are wide enough to support this management. | Number of channel receiving alternate bank cuts | Ongoing | Ops lead | Maintenance staff |
| **1** | **1c** | Where banks are re-profiled reseed with pollen and nectar mixes. | M of pollen and nectar rich mix sown | When need arises | Ops lead | Maintenance staff |

## 5.3.8 Kingfisher Action Plan

### 5.3.8.1 National and Local Targets

Table 44

| National Targets | Local Targets |
|---|---|
| Unknown | Unknown |

### 5.3.8.2 IDB Objectives

Table 45:

| IDB Objectives | |
|---|---|
| 1 | **Manage IDB watercourses so as to maintain potentially suitable kingfisher habitat, particularly breeding habitat.** |
| 2 | **Enhance channels to create potential nest sites for Kingfisher.** |

### 5.3.8.3 IDB Actions

Table 46

**Objective 1: Manage IDB watercourses so as to maintain potentially suitable kingfisher habitat, particularly breeding habitat.**

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

| | | | | | | |
|---|---|---|---|---|---|---|
| **1** | **1a** | Create a form for drivers to monitor wildlife sightings, including kingfisher, during operations | Form created and used. | Ongoing | Ecologist | Ops lead |
| **1** | **1b** | Create database of sightings. | Database created | Ongoing | Ecologist | Ops lead |
| **1** | **1c** | Leave overhanging branches as kingfisher perches where possible. | Branches left intact | Ongoing | Ops lead. | Maintenance staff. |
| **1** | **1d** | Maintain and avoid disturbance to potential nest sites by retaining earth cliffs and avoiding close working. | Number and extent of earth cliffs in m each year. Work schedules detail exclusion zone around known nest sites in the breeding season | Ongoing | Ops lead | |

**Objective 2: Enhance channels to create potential nest sites for Kingfisher.**

| **Action Plan** | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Consider creating artificial nesting sites for kingfishers by drilling holes in sheet piling if this occurs in the drainage district. | New kingfisher hole present | As need arises | Ops lead | Ecologist. |

## 5.3.9 Water Vole Action Plan

### 5.3.9.1 National and Local Targets

Table 47:

| National | Local |
|---|---|
| Maintain the current abundance and range & achieve an increase in range (both across 10km2 areas). | To retain water vole populations on all known sites. Monitor all sites as part of the Water vole Monitoring programme and register new sites. |

### 5.3.9.2 IDB Objectives

Table 48:

| | IDB Objectives |
|---|---|
| 1 | **Ensure appropriate management of IDB watercourses to maintain the size and range of populations of water vole.** |
| 2 | **Ensure bank works only commence following water vole surveys and appropriate mitigation.** |
| 3 | **Work with partners to monitor and record water vole sites.** |

### 5.3.9.3 IDB Actions

Table 49

**Objective 1: Ensure appropriate management of IDB watercourses to maintain the size and range of populations of water vole.**

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

| | | | | | | |
|---|---|---|---|---|---|---|
| **1** | **1** | Implement alternative bank cuts on channels where water voles are breeding. | Alternate bank cuts implemented | Ongoing | Ops lead | Maintenance staff. |
| **1** | **1b** | Maintain stable water levels avoiding sudden fluctuations where possible. (In grazing marsh habitat this might however conflict with management for breeding waders) | Appropriate water levels maintained | Ongoing | Ops lead | |
| **1** | **1c** | Where channels are being poached by livestock consider liaising with landowners about fencing sections of channel although this should not take place in areas where plants require grazing. | Number of discussion about fencing with landowners | Ongoing | Ops lead | |
| **1** | **1d** | Ensure bank toes are not scraped as a result of weed cutting operations. | Banks not scraped during maintenance | Ongoing | Ops lead | Maintenance staff |
| **1** | **1d** | Assist partner organisations in carrying out mink surveys and trapping. | Assistance offered as necessary | As requested | Clerk | Wildlife trusts, Countryside Partnerships, Catchment Partnerships |
| **1** | **1e** | Create pockets of habitat along channels with hard engineering by installing coir rolls or artificial berms. | M of coir rolls or berms installed | 31/12/2032 | Ops lead | Ecologist |

**Objective 2: Ensure bank works only commence following water vole surveys and appropriate mitigation.**

| **Action Plan** | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | Where bank works are necessary these should only be carried out following survey by a qualified ecologist and appropriate mitigation works. | Water vole surveys and mitigation carried out | Ongoing | Suitably qualified and licensed ecologist | Derek Gow Associates |
| **2** | **2b** | Where bank slippage occurs use coir rolls or artificial berm creation to prevent slippage rather than hard engineering. | M of coir roll installed | Ongoing | Ops lead | |

**Objective 3: Work with partners to monitor and record water vole sites.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **3** | **3a** | Report water vole sites to the National Water Vole Monitoring programme. | Sites reported | Ongoing | Ecologist | Kent Wildlife Trust |

## 5.3.10 Invasive Species Action Plan

This plan outlines objectives and actions to control a range of invasive species both through direct action, training and partnership working

### 5.3.10.1 IDB Objectives

Table 50

| IDB Objectives | |
|---|---|
| 1 | **Ensure all invasive species within the drainage district are reported promptly** |
| 2 | **Ensure biosecurity measures are developed and implemented.** |
| 3 | **Work with partners to control invasive species in the catchment.** |

Table 51

**Objective 1 – Ensure all invasive species within the drainage district are reported promptly**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
| **1** | **1a** | All site operatives will be trained to recognise invasive species. | 1 training session given to all staff plus refresher training every 3 years | 31/12/2025 | Ops Lead | Ecologist Medway Valley Countryside Partnership. |
| **1** | **1b** | Invasive species I.D guides created and issued to all operators. | I.D guides created and distributed. | 31/12/2025 | Ecologist | Medway Valley Countryside Partnership |
| **1** | **1c** | All site operatives will be made aware of who to report invasive species and increases in infestations too. | Invasive species reported | Ongoing | Ops lead | |
| **1** | **1d** | Operators encouraged to take photos of invasive species to monitor spread or reduction of infestation. | Procedure in place | Ongoing | Ops lead | Maintenance staff |

| | | | | | | |
|---|---|---|---|---|---|---|
| **1** | **1e** | Encourage machine operators to report mink sightings | Mink sightings reported | Ongoing | Ops lead | Catchment partnerships/ Landowners/ maintenance staff/ Ecologist |

**Objective 2 – Ensure biosecurity measure are developed and implemented**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **2** | **2a** | All operatives will receive training on the importance of biosecurity and best practice. | All staff to receive training plus refresher training every 2 years | Ongoing | Ops Lead | Ecologist Medway Valley Countryside Partnership |
| **2** | **2b** | All staff to be issued with appropriate equipment to carry out biosecurity i.e. brushes, sprays, jet wash etc. | Equipment distributed | Ongoing | Ops lead | |
| **2** | **2c** | Take swift and appropriate action against invasive species not managed by partner organisations | Invasive species controlled | Ongoing | Ops Lead | |
| **2** | **2d** | Develop procedures to ensure that faunal pathogens such as crayfish plague are not spread between watercourses when working. | Procedures in place | 31/12/2022 | Ops Lead | Ecologist. |

**Objective 3 – Work with partners to control invasive species in the catchment.**

| Action Plan | | | | | | |
|---|---|---|---|---|---|---|
| **Objective ref.** | **Action number** | **Action** | **Measurable / Indicators** | **Completion date** | **Action Lead** | **Partners** |
| **3** | **3a** | Support Medway Valley Countryside Partnership and other organisations working to remove invasive species from the Medway Catchment | | Ongoing | Clerk | Medway Valley Countryside Partnership SERT |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | Catchment Partnerships |
| **3** | **3b** | Work with partners to raise awareness amongst landowners of the need to report invasive species and bio-secure practices | Partnership working | Ongoing | Clerk | Ops lead Countryside Partnerships. |
| **3** | **3b** | Consider financial support for Medway Valley Countryside Partnership Invasive Non Native Species programme. | Support given | | Clerk | Medway Valley Countryside Partnership. |

# 6. Procedural Action Plan

## 6.1. Introduction

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

## 6.2. Objectives and Targets

Table 52:

| | IDB Objectives |
|---|---|
| 1 | **To improve all IDB employees knowledge of biodiversity and biosecurity through training.** |
| 2 | **Protect Historic sites from damage.** |
| 3 | **To maintain no net loss of open watercourse through consenting.** |
| 4 | **Raise awareness of best practice with landowners to ensure appropriate management of riparian margin and raise awareness of need for consent** |
| 5 | **Submit all survey records to relevant Biological Recording Centre** |
| 6 | **Raise awareness of work the IDB undertakes to manage habitats for wildlife** |
| 7 | **Increase partnership working with local authorities and conservation bodies** |
| 8 | **Support initiatives to reduce plastic pollution in IDB managed watercourses** |

## 6.3. IDB Actions

Table 53:

| Action Plan |
|---|

| Objective ref. | Action number | Action | Measurable / Indicators | Completion date | Action Lead | Partners |
|---|---|---|---|---|---|---|
| **1** | **1a** | Ensure all staff including contractors have received high-level biodiversity training and refresher training every 3 years. | Numbers of staff and trained | Ongoing | Ecologist | Ops Lead |
| **1** | **1b** | Ecologist to meet with all staff in the field to discuss issues arising from actions required as part of the BAP | Annual visit by ecologist to all staff | Ongoing | Ecologist | Ops Lead |
| **1** | **1c** | Annual staff training undertaken on importance and procedures on biosecurity | Number of training sessions | Ongoing | Ecologist | Medway Valley Countryside Partnership |
| **1** | **1d** | Create I.D. guides for driver cabs to help with reporting of invasive species | I.D guides created and distributed. | 31/12/2025 | Ecologist | Medway Valley Countryside Partnership |
| **1** | **1e** | Staff equipped with Biosecurity cleaning kits. | Biosecurity cleaning kits distributed | 31/12/2025 | Ops lead | |
| **1** | **1f** | Machine operators trained in the use of dissolved oxygen meters. | Training delivered | 31/12/2025 | Ops Lead | |
| **1** | **1g** | Machine operators issued with form to record wildlife sightings and encouraged to use them | Forms created and issued | 31/12/2032 | Ecologist | Ops Lead |
| **2** | **2a** | Apply for consent for capital works likely to affect Scheduled Ancient Monuments or Protected Military Remains | Consent applied for | Ongoing | Clerk | |
| **2** | **2b** | Ensure machine operators are aware of historic sites and know who to report finds to. | Historic information included in Watercourse Management instructions | 31/12/2032 | Ops Lead | Ecologist<br>Historic England |
| **2** | **2c** | Ensure historic sites are taken into account when undertaking bank works | No damage to historic sites through bank works | Ongoing | Ops lead | Maintenance staff |
| **3** | **3a** | Respond to applications for culverts with alternatives to maintain open watercourse. Approve no new culvert applications | Extent of open watercourses maintained | Ongoing | Clerk | |
| **4** | **4a** | Meet with landowners to discuss issues arising from raised culverts, unofficial weirs, bankside works etc. | Number of landowner meetings | Ongoing | Ops lead | |
| **4** | **4b** | Creation of best practice guide for riparian margins to raise awareness among residential property owners of appropriate management and need for consent. Or distribution of existing guide. | Guide created | 31/12/2032 | Ops lead | Ecologist<br>EA |
| **5** | **5a** | Recording form created for drivers to record wildlife and invasive species sightings. | Record form created | 31/12/2025 | | |
| **5** | **5a** | Send records from surveys to Biodiversity Records Centres | All records sent | Ongoing | Ecologist | Volunteers<br>Admin staff |
| **6** | **6a** | Update website with more information on management for wildlife | Website regularly updated | Ongoing | Clerical staff. | Ecologist. |
| **6** | **6b** | Advertise work through press releases where suitable | Number of press releases | Ongoing | Clerk | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **7** | **7a** | Attend meetings with partner organisations | Number of meetings attended | Ongoing | clerk | |
| **7** | **7b** | Engage with partner organisations to achieve BAP aims | Joint projects worked on with partners | Ongoing | Clerk | Ecologist |
| **7** | **7c** | Assist Catchment Partnerships to achieve aims where appropriate | Number of projects jointly worked on. | Ongoing | Clerk | Ecologist. |
| **8** | **8a** | Discuss use of in-channel retention nets to capture plastics with SERT | Discussions have taken place | Ongoing | Clerk | Ops lead SERT |
| **8** | **8b** | Raise awareness among rate payers of issues around plastic pollution through distribution of literature | Literature distributed | Ongoing | Clerk | Admin Staff SERT |
| **8** | **8c** | Remove litter from rivers as part of annual maintenance | Amount of litter removed | Ongoing | Ops Lead | Maintenance Staff. |

# 7. Implementation

## 7.1. Overview

Many of the actions within the Biodiversity Action Plan can be delivered through adjustments to the annual maintenance programme. More ambitious projects can be undertaken when a channel is de-silted or when capital works take place.

However it is easy for opportunities to be lost unless there is good knowledge of individual channels from both a biodiversity and flood risk capacity. Increased channel knowledge through survey work will lead to the creation of tailored management plans for each channel.

It is also important that all members of the IDB team are engaged in the process to improve management for biodiversity. Training of machine operators will increase understanding of the needs of wildlife and the reasons behind the proposed changes to channel management. It is vital to ensure drivers feel involved and have an opportunity to voice their own views.

Partnership working will provide opportunities to tap into specialist knowledge and involve volunteers in undertaking some of the work proposed. This will also lead to increased positive publicity for the Drainage Boards.

Finally, it is important that farmers and other landowners support changes to management practices and their knowledge of the land and needs are listened to when changes are being made. The boards are also well placed to advise farmers on best practice when it comes to management of riparian margins and preventing diffuse pollution to watercourses.

## 7.2. Implementation Plan

### 7.2.1 Annual Management of Channels

Many of the actions in this Biodiversity Action plan can be incorporated into the annual bank cutting and weed cutting programmes. With greater channel knowledge these cuts can be adapted to benefit particular species such as reed buntings, water voles and reptiles, such as grass snakes and slow worms.

**Bank and Marginal Vegetation Cuts**
The majority of watercourses are currently managed on an annual basis except where there are access issues or management has been prevented due to spate conditions. The Upper and Lower Medway IDB's are currently creating a tiered management programme to assess priorities. High priority channels are likely to be classified due to their proximity to roads, housing or because they are main pumping drains.

Currently both banks of the channels are cut leaving a marginal fringe. Occasionally one bank is left uncut either for conservation or security reasons. Leaving a marginal fringe alongside channels is an excellent policy and will be of great benefit to dragonflies and water vole. However, there may be areas of channels where plants such as reed mace dominate where a more vigorous removal could provide opportunities for other plants to colonise. Survey work will help determine where this policy could be trialed.

Expanding on techniques such as alternate bank cuts and sectional bank cuts can benefit

biodiversity This management could be trailed where it will not impact flood risk or access. This change to cutting regimes can save considerable time and expense, which would ensure that channel maintenance is completed in good time to accommodate winter rainfall.

Alternate bank cuts can also help to create a thick barrier of vegetation and alleviate issues of diffuse pollution and run off. This can have considerable benefits in reducing nitrate and phosphate levels in channels and have positive benefits in reducing weed growth and the need for frequent channel de-silting.

Some of these savings in time and cost could then potentially be used to undertake actions such as removing arisings from channels where bankside floristic diversity is particularly rich. Removing arisings would prevent vigorous species gaining a foothold and could improve the situation with water conveyance during the winter. It could also alleviate problems caused by vegetation being blown back into channels following cutting which may lead to blockages.

**Weed Cutting**
Most channels within the Upper and Lower Medway IDB's currently receive an 80% weedcut, Narrow channels or those which are dry for the majority of the year may receive a more vigorous cut.

Regular weed cutting can benefit a range of species such as opposite leaved pondweed and, where channels have a good balance of vegetation, the weed cut programme should remain the same. However, a reduction in weed cutting could benefit some plants and invertebrates and, where this will not impact on flood risk, this could be trialed.

Leaving headwaters and corners of wide channels uncut could help create shallow water habitat which would benefit a wide variety of species such as eels and toads. Again, better knowledge of channels is needed to pinpoint where these actions are appropriate.

**Timing of Cuts**
The period of cutting of banks by excavators begins on June 16th and extends to March 16th. If a channel is deemed to be at risk of causing flooding due to high rainfall it may be cut outside of the traditional season. Mechanical weed cutting commencing on July 16th. Hand cutting of channels takes place all year round although tends not to happen between March and May. All work done outside the traditional season has an internal environment impact assessment and operators are trained to inspect watercourses ahead of time for nesting birds.

The bird nesting season, according to Natural England runs between March 1st and July 31st. Cutting within this period is likely to lead to disturbance to breeding birds and potentially loss of nests. Actions within this plan may lessen the amount of cutting that takes place each season and hopefully make it possible to change the timing of cuts so that there is less impact on breeding wildlife and plants will be able to set seed.

Operators should also have a clear policy to follow should then discover birds nesting alongside channels during their pre work inspection.

**Clearance of Woody Debris**
Currently the boards remove woody debris from the majority of channels. However in 2015 UMIDB9 Hammer Stream became a trial site for the retention of woody debris in the channel. The upper reaches of UMIDB41 Eridge Stream also has woody debris left in situ.

Woody debris encourages conditions where channels can self-scour and where silt is transferred to the margins. This can reduce the need for de-silting, help regulate weed growth and reduce flood risk. Woody debris can also be manipulated to allow channels to 'top out' in areas where periodic flooding is beneficial to bankside habitat and would create minimum impact on people

and property.

Woody debris creates a more varied environment in fast flowing channels leading to natural features such as pools and riffles which greatly benefit fish and crustaceans such as white clawed crayfish. In addition it increases insect numbers in a channel and provides a nursery area for many fish species.

There should be a general understanding in favour of retaining small areas of woody debris. Woody debris should only be removed where it is a clear flood risk problem and other options such as pinning the debris in place should be considered.

Pining debris in place is a specialist skill and this could either be taught to operators or undertaken by volunteers managed by SERT or Countryside Management Partnerships who often have considerable experience of this work.

Accepting woody debris in a channel often takes a change of mindset from landowners and maintenance staff and it is very important that all parties feel involved in decision making and understand the benefits.

**Water Level Management**
Some species such as water vole benefit from stable water levels but others such as the BAP priority plants, Spruces bristle moss and true fox sedge rely on periodic flooding. Winter flooding and high water levels in spring are also a crucial component in management for breeding waders. Many habitats such as wet woodland and lowland meadows also benefit from seasonal flooding which is a crucial part in their cycle.

Greater knowledge of individual channels is needed to ensure suitable water levels are maintained to benefit priority species.

Liaison with farmers and land managers is also crucially important to ensure water levels are meeting their needs without damaging the wildlife interest in channels.

### 7.2.2 De-silting and Capital Works

**De-silting**
Channels are currently de-silted, according to flow, on a 5-10 year programme. De-silting offers opportunities to asses channels and decide if enhancements are possible.

Enhancements could include creation of artificial berms, which can help with issues such as silt transference and run off as well as creating vegetated shelves of marginal plants which benefit insects such as damselflies.

Berms can be created through woody debris held in place close to banks or by constructions of stakes, faggots or coir rolls. Artificial berms could either be created by operators or by volunteers managed by one of the Countryside Management Partnerships.

Desilting also offers opportunities to create low flow channels and create pools at channel junctions.

On more natural watercourses, gravel manipulation can help create more varied channel conditions benefitting species such as fish.

**Capital works**

Capital works provide further opportunities to fulfil some of the actions outlined in the bank. Bank re-profiling offers a chance to reseed banks with a pollen rich sward. Other projects may create opportunities to install fish and eel passes, bat boxes or artificial nesting sites for Kingfishers.

Many of these projects can be done at minimal cost but, once again, partnership working is likely to create joint projects where these enhancements can be incorporated into a wider scheme.

### 7.2.3 Tree Work

**Tree Removal and Maintenance**
The board currently carries out tree work on a case by case basis with some level of pioneering undertaken in the Upper Medway district over a 3-5 year period.

Removing trees may help with access for machines to carry out maintenance work but could also be considered to allow light into some overly shaded areas of watercourses. Survey work could help highlight where tree removal may benefit channel biodiversity. Where trees are cut down, this should be done by coppicing which will allow access without removing the stabalising affect that tree roots have on banks.

All tree work must, by law, take into account the potential for trees to contain bat roosts or birds nests. Bats and their roosts have full legal protection in England against disturbance and destruction. It is illegal to disturb, damage or destroy a bat roost even if bats were not present at the time. It is also an offence under Section 1 of the Wildlife and Countryside Act 1981 to take, damage or destroy the nest of any wild bird while it is in use or being built or intentionally to kill, injure or take chicks or adults or eggs.

Tree work should be planned well in advance in order for trees to be inspected and an inspection form filled in to show that the potential for trees to contain bat roosts and breeding birds was considered before work took place.

Pollarding willows or retrenchment pruning of mature trees are jobs which call for a specialist tree surgeon. This initial outlay may be covered by landowners as part of the Countryside Stewardship scheme. Reducing the crown of mature trees not only prolongs their life but prevents trees splitting or being wind blown into channels and creating blockages which could lead to flooding.

Log piles are a valuable resource and can benefit species such as toads. Instead of chipping cuttings from tree works, branches could be stacked and pinned in place to prevent them slipping into channels. Volunteers from Countryside Partnerships may be able to assist with this work.

**Tree Planting**
Tree planting could be carried out by the boards in incidences where trees or hedges have been removed or where tree planting could help with shade manipulation to prevent weed growth or in order to stabilize banks.

Partnership working may highlight opportunities to be involved in schemes which will provide trees free of charge or provide volunteers to plant trees.

### 7.2.4 Survey Work

Survey work forms the backbone of many of the actions in the Biodiversity Action Plan. Greater

knowledge of each channel can ensure that management is tailored. This not only benefits the species present but potentially could provide a saving in time and money for the board.

However, surveying for species is a specialist skill and it is necessary for surveyors to understand where the opportunities may lie for biodiversity gain as well as understanding the primary objectives of the Drainage Boards to control water level management and flood risk. It is also beneficial for survey staff to have some understanding of the Boards operations.

An ecological survey is a key task of this Biodiversity Action Plan. It is proposed that a set number of channels are surveyed each year, prioritising those in designated areas, channels known to have high biodiversity value or channels conversely known to have issues relating to invasive species or pollution.

A desk study of known survey and historical data should be carried out prior to surveying. This will help the surveyor in their appraisal of the channels biodiversity value.

A methodology for surveys could be created drawing on experience of similar surveys with other IDB's such as the River Stour (Kent) IDB.

Surveys should include an appraisal of floristic diversity along the banks and within the channel. A scoring system for the tangledness of marginal vegetation, which is a factor in insect diversity. Dipping sessions to determine the presence of fish, beetles and pond snails. A search for water vole sign. Sightings of BAP species. Water quality tests for nitrate and phosphate and basic facts about the channel including, depth, width, presence of gravels etc.

Each survey should be accompanied by a map which shows the locations of key species, including any invasive species, along with possible channel enhancements.

Experience suggests that surveys are best carried out on foot although it may be beneficial to survey hard to reach sections by drone.

Surveys will inform the creation of individual management prescriptions and where changes to annual maintenance could enhance the environment.

**Specialist Surveys**

Some species are difficult to identify without specialist knowledge. However it may be possible to come to an arrangement with specialist recorders and recording groups which may provide their services in exchange for help to access +land. Specialist surveyors are keen to improve the management of species which might be rare or vulnerable. IDB's are well placed to provide support for such groups and benefit from their knowledge.

### 7.2.5 Individual Management Prescriptions

Following the surveys of each channel it is proposed that individual management prescriptions are drawn up alongside the Operations Manager and Clerk.

These management prescriptions take the form of work sheets which will be primarily aimed at channel maintenance staff. The sheets will take into account the biodiversity value, flood risk and water level management needs of the channel.

Each management prescription will advise on annual maintenance, de-silting, tree work and issues around invasive species.

The prescriptions will also describe opportunities for enhancements which can be carried out when channels are de-silted or when capital works take place.

The management sheets will be the method through which many of the aspirations of the Biodiversity Action Plan are translated to staff on the ground and will inform both day to day activities and future planning.

Management sheets should not be written in specialist language, should always explain why a particular method has been chosen and should be engaging. This is in order to encourage staff to read them and understand both what is being asked of them and why it is being asked.

### 7.2.6 Field Maintenance Staff Training and Engagement

The support of Maintenance staff will be all important in undertaking many of the actions proposed in the BAP and it is essential they understand why they are being asked to work in a particular way and have a chance to voice their ideas and concerns.

Management prescriptions and i.d. sheets for invasive species should be available to all drivers to inform them of the cut types and aspirations for the channel along with assisting them in reporting of key species.

Training should take the form of classroom sessions for issues such as biosecurity but could also take place in the field to explain different methods of cutting channels or to demonstrate techniques such as installing and pinning woody debris in place.

Experience has also show that it is important to listen to machine operators, if they are having problems achieving maintenance standards and that this can be achieved by regular visits from an ecologist.

Maintenance staff are the eyes and ears on the ground and should feel involved and listened to They are well placed to record wildlife sightings and monitor invasive species and should be encouraged to do so.

### 7.2.7 Partnership Working

Creating partnerships with organisations such as South East Rivers Trust, Countryside Partnerships and Catchment Partnerships members may be mutually beneficial.

The IDB's are well placed to help partners by raising awareness among landowners of projects taking place within the drainage district and by assisting with access to channels in order to undertake surveys for projects such as creating eel passes on tidal flaps.

Partnership working may also enable the IDB's to hear of opportunities to achieve BAP Actions through joint projects.

Through partnerships, the IDB's may be able to access volunteers in order to undertake channel enhancements. Many Countryside Management Partnership volunteers have many years experience in techniques such as installation of wood debris.

Partnership working also provides opportunities to generate positive publicity for the IDB's and raise awareness of the work of the board's role in enhancing biodiversity across the drainage district. .

### 7.2.8 Landowner Liaison

At the time of writing the farm subsidy system is at a point of change. The proposed Environment Land Management Scheme encourages farmers to undertake work to deliver 'public goods' such as clean water and biodiversity. Many of the actions in this plan are likely to help farmers achieve their targets so could be welcomed.

Farmers may also be keen to take advantage of the opportunities offered from Biodiversity Net Gain although these schemes should be thoroughly investigated before an agreement is reached to ensure they really are offering an overall benefit to habitats and species.

If management of watercourses is altered it is important that farmers feel consulted and that their knowledge of the land and water level management is included in deliberations. Farmers often have generations of experience of how drainage channels respond to fluctuations in weather patterns and are likely to respond positively to management for the benefit of wildlife if they are properly engaged.

Conversely the board is well placed to advise landowners on issues such as better management to prevent diffuse pollution, appropriate management of the riparian margin and to assist partners in dealing with issues such as discarded plastic waste.

All staff have a role to play in keeping landowners on board with the aspirations of the Biodiversity Action Plan .

# 8. Monitoring

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

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

# 9. Reporting

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

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

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

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