River Stour (Kent) Internal Drainage Board

North/ South Streams and Broad Dyke, Northbourne

Biodiversity Action Plan 2026 - 2030

Statement

This Biodiversity Action Plan (BAP) has been prepared by the Kentish Stour Countryside Partnership in partnership with and on behalf of the River Stour (Kent) Internal Drainage Board to demonstrate the Board's commitment to fulfilling its duty as a public body to conserve and enhance biodiversity under various legislation and policy including, but not limited to, the Environment Act 2021, the Natural Environment and Rural Communities Act 2006, the 25 Year Environment Plan and Water Framework Directive.

The Board's primary function is land drainage, flood risk management and water level management on IDB watercourses. However, many of the Board's operational activities which are carried out under permissive powers have benefits for biodiversity, not least its role in water level management and in the course of its routine watercourse maintenance work. It is hoped that this Biodiversity Action Plan will help the Board to maximise the biodiversity benefits from its activities and demonstrate its contribution to the Government's UK Post-2010 Biodiversity Framework targets and other relevant local plans.

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

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

…… Date ……5th February 2026…….

Mr G R Steed

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 this BAP from interested organisations, companies and individuals.

You can contact us about this Biodiversity Action Plan by writing to the following address:

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CT1 3PW

Or by emailing us at: enquiries@riverstouridb.org.uk

Further information is available on the Board's website:

www.rsidb.org.uk

1. Introduction

1.1. What is Biodiversity and why is it important?

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

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

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

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

1.2. Legislative Background

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

The Natural Environment and Rural Communities Act 2006 places a duty on IDBs to conserve biodiversity.The Environment Act 2021 (with amendments), 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.

An amendment to the 2021 Act - The Environmental Targets (Biodiversity) (England) Regulations 2023 set long-term targets for biodiversity under the Environment Act 2021. Key objectives include:

Restoring or creating over 500,000 hectares of wildlife-rich habitats outside protected sites by 2042. Reducing the risk of species extinction by 2042 (compared to 2022); Halting the decline in

species abundance by 2030; These regulations aim to enhance biodiversity and ensure sustainable environmental practices in England.

The Kent and Medway Local Nature Recovery has now been published, November 2025. The Strategy sets out the county's priorities for nature recovery and the recommended actions to deliver these. This spatially framed Strategy also identifies where in the county this action should be targeted to deliver the greatest outcomes for the county's habitats and species. It was coordinated by KCC as the Responsible Authority, but it is not a KCC Strategy, but one for Kent and Medway to be delivered by all stakeholders.

Whilst the Strategy makes no requirement for its measures to be implemented, it offers a comprehensive guide to nature recovery that will present many strategic and financial benefits to farmers, landowners, planners, developers, community groups and others, in taking forward the measures.

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

- The Environment Act 2021
- Conservation of Habitats and Species Regulations 2017
- Eels (England and Wales) Regulations 2009
- Water Environment (Water Framework Directive) (England and Wales) Regulations 2003
- Natural Environment and Rural Communities Act 2006 (Section 40)
- Environmental Impact Assessment (Land Drainage Improvement Works) Regulations 1999
- 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

1.3. Policy & Strategic Background

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

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

The concept of Nature Recovery Networks featured in the Government’s Biodiversity 2020 strategy (2011) and 25 Year Environment Plan (2018). The Environment Act 2021and the development of Local Nature Recovery Strategies (LNRS) expands this concept by also taking 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.

1.4. 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 its functions, for example on or within drainage assets such as watercourses and their banks, the IDB has also to give consideration to how it can contribute to the enhancement of the wider environment.

It is not within the scope of this document to set out the IDB’s 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.

1.5. Vision

The IDB’s vision is:

A drainage district where thriving wildlife and healthy habitats exist side-by-side with agriculture

and other land uses and are an integral part of delivering efficient and effective flood risk and water level management.

1.6. Aims

The aims of this BAP are:

- To ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations;
- To enable more effective monitoring and reporting of progress and outcomes;
- To ensure that priority species and habitats receive effective action within defined targets within the drainage district;
- To identify targets and appropriate actions for other habitats and species of local importance within the drainage district. This includes invasive non-native species;
- 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 IDB and locally of the need for biodiversity conservation, and to communicate with the local and wider community what actions the IDB are undertaking to support biodiversity.
- To ensure the IDB makes a positive contribution to the favourable or recovering condition of statutory sites within the district.

2. The IDB BAP Process

2.1. The Biodiversity Audit

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

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

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

2.2. 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.

2.3. Monitoring and Reporting

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

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

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

3. The Biodiversity Audit

3.1. The River Stour (Kent) Internal Drainage District

The drainage district is located in East Kent and stretches from Lenham Heath in the far west, Sellinge in the south, to Reculver in the north and to Richborough and Deal in the East, passing through Ashford, Canterbury and Sandwich. It encompasses the Main Rivers Great Stour, East Stour, Little Stour, Ruckinge Dyke, Whitewater Dyke, Aylesford Stream, Sarre Penn and North & South Streams (under the jurisdiction of the EA) and large areas of marshland in the Wantsum Channel and the Lydden Valley.

The following outlines the key details of the District:

- Total area of the drainage district: 11,909 hectares
- Catchment area draining to and including the District: 39,000 hectares
- Area of agricultural land: 9,469 hectares
- Area of other (non-agricultural) land: 2,440 hectares

Assets for which the Board has operational responsibility:

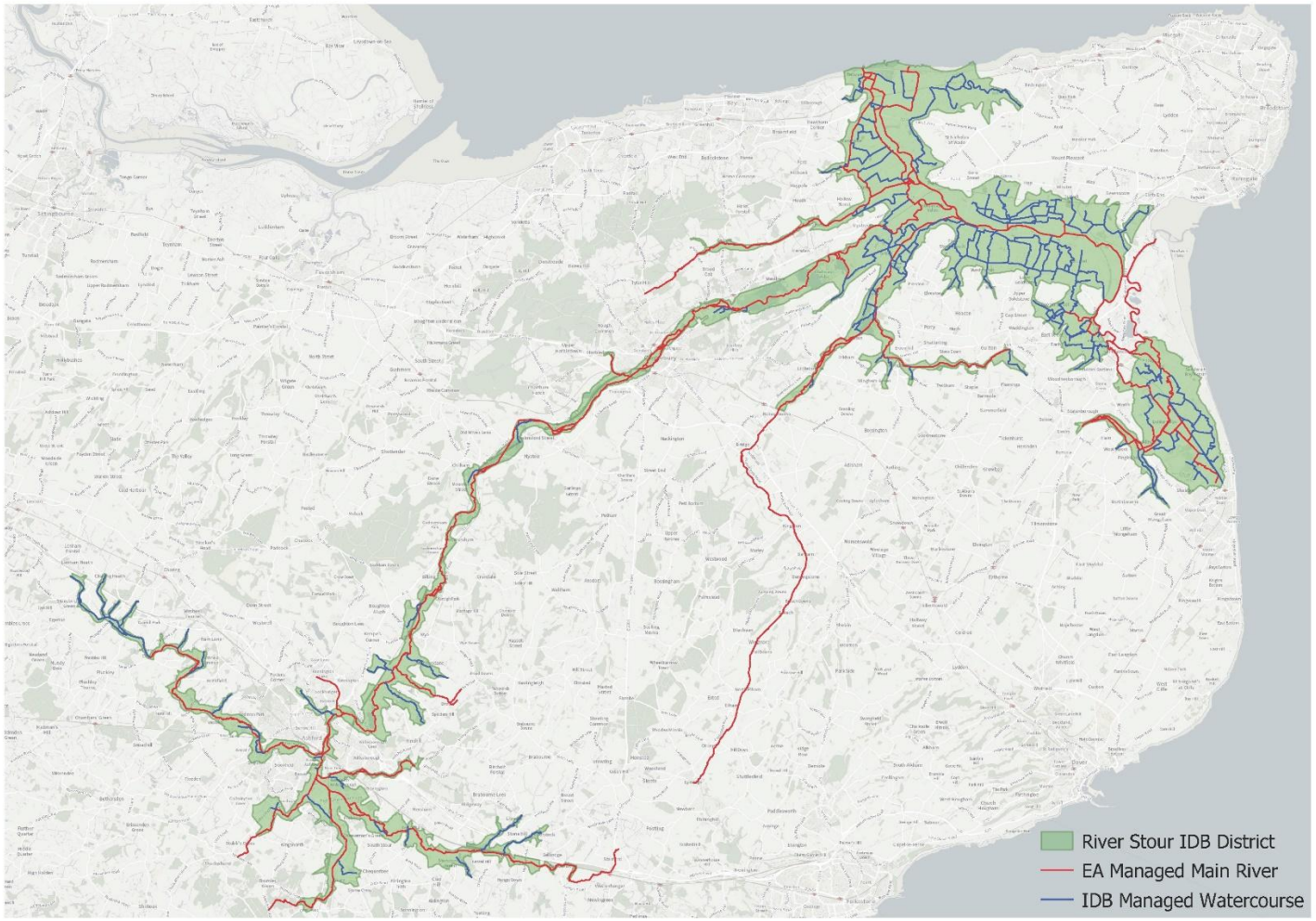
- Water level control structures: 145 number
- Watercourses (maintained): 213 km

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

- Main Rivers: 218 km
- Raised embankments/flood walls: 38 km
- Pumping Stations: 12 number

The Board is currently (2025) exploring the possibility of extending its district to the full watershed of the River Stour catchment.

3.2. Map of Audit Area (Drainage District)



3.3. Geology

The Kentish Stour's two main tributaries - the Great Stour and the East Stour – rise at Lenham and Postling respectively, before flowing towards their confluence at Ashford. The IDB district upstream of this confluence geologically encompasses the Lower Greensand and Wealden Clay. The Great Stour and East Stour both rise on the Greensand before crossing the Weald Clay, as does a lesser tributary, the Aylesford Stream. The Ruckinge and Whitewater Dykes, rise in the Wealden Clay and flow across the South Willesborough Dykes area into Ashford.

North of Ashford, the Great Stour and the IDB district cross the Gault Clay, with small tributaries joining south of Wye, before breaking through the chalk escarpment of the North Downs at the Wye Gap. The IDB district follows the river corridor through the chalk to Canterbury. In these reaches the river Stour is a chalk stream.

East of Canterbury, the drainage district is primarily on the Thanet Beds – this is the dominant geology of the Lower Stour Marshes (Chislet Marshes, Ash Levels, Minster Marshes etc.) although the Woolwich Beds are also present. The Lydden Valley Marshes, however, are on chalk, as are much of the Little Stour, Wingham River and Wade Marsh parts of the drainage district. The Sarre Penn section is on London Clay.

3.4. 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.

Low Weald

The Low Weald is a broad low-lying clay vale which runs around three sides of the High Weald through Kent, Sussex and Surrey. It coincides with the outcrop of the Wealden Clay. It is typically low lying and undulating, rarely exceeding more than 30 m - 40 m AOD, with many areas as low as 15 m. Soils are often wet. The Low Weald is heavily dissected by river floodplains and many small, narrow and commonly sunken streams cut into the heavy clays locally forming flat low-lying areas. Much of the area is prone to flooding. In many cases, the ponds, unimproved permanent pastures, road verges, small rivers and streams of the Low Weald are habitats of high value for nature-conservation.

Other key characteristics:

- Broad, low lying and gently undulating clay vales underline a small-scale intimate landscape enclosed by an intricate mix of small woodlands, a patchwork of fields, and hedgerows. In the IDB district, some areas, for example South Willesborough Dykes, are not typical, having a more open, marshland character.

- The Low Weald generally includes an abundance of ponds and small stream valleys often with wet woodlands of alder and willow. Within the IDB district there are relatively few ponds.
- Tall hedgerows with numerous mature trees link copses, shaws and remnant woodlands which combine to give the Low Weald a well-wooded character. Again, South Willesborough Dykes does not have this character.
- Grassland predominates on the heavy clay soils while lighter soils on higher ground support arable cropping in a more open landscape.
- Rural in character with dispersed farmsteads. In the IDB district some areas are 'urban fringe' in character.
- Historic settlement pattern was dictated by a preference for higher drier outcrops of limestone or sandstone with moated manor houses (e.g. Boys Hall Moat) being a characteristic feature.

Wealden Greensand

This long, curved belt runs across Kent parallel to the North Downs. Its local character varies as a result of changes in local topography, soils and land use but it is unified throughout the area as a result of underlying geology, scarp/dip-slope topography and the distinctive springline settlements below the Downs. Extensive belts of woodland, both ancient mixed woods of hazel, oak and birch and more recent coniferous plantations, give the area a well-wooded feel in some parts, though woodland is scattered in the IDB district. This region includes the outcrops of Upper Greensand, Gault and Lower Greensand. Away from the Gault Clay, the Wealden Greensand is generally noted for its cover of broadleaved and coniferous woodland within a network of pasture with hedgerows, arable land and heathland (e.g Hothfield Common). In contrast to the North Downs, surface water is an important feature on the Greensand. Streams and rivers drain off the dip-slope.

Other key characteristics:

- Settlements are generally scattered villages and hamlets linked by deep, overhanging, winding lanes with some small, irregular fields remnant of Saxon clearances.
- In the east of Kent, the Wealden Greensand has a gentler and more open aspect than the wooded west. This part of the area is also more marked by development with the presence of major towns and communication corridors such as the M20 and railway lines.
- Fruit growing is still a characteristic feature of the Kent Greensand.
- Older deer parks (e.g. Hatch Park, Mersham) and more recent 18th century parklands (e.g. Godinton) are a distinctive feature of the Wealden Greensand with extensive views out over the Low Weald.

North Downs

The North Downs escarpment is a striking and dramatic feature in the surrounding landscape. The Downs run from the narrow ridge of the Hog's Back in west Surrey, across Kent, widening eastwards to end abruptly at the distinctive landmark of the White Cliffs. On the wide northern dip slope in east and mid-Kent, the North Downs merge into the plateau of the North Kent Plain and become urbanised in many places (e.g. around Canterbury). The steep south-facing scarp of the North Downs rises to over 180 metres above the Greensand. The chalk forms the backbone of the North Downs. To the south lies the Wealden anticline exposing older Cretaceous strata. The rivers Stour, Medway, Darent, Wey and Mole cut through the scarp to form deep valleys, showing evidence of river capture in many places.

Other key characteristics:

- Dramatic and distinctive Chalk downland with a continuous and steep scarp giving extensive views.
- Land use includes a few pockets of traditional downland grazing but (especially in Kent) it is largely dominated by arable fields. These fields at the base of the scarp have extended their regular pattern up the sides of the Downs.
- The North Downs are a rural landscape with scattered flint-walled farmhouses and remote settlements. Within the IDB district this tranquility is impacted upon by the mainline railway and A28.
- Woodland and shaws cover much of the dry valleys and, in places, they are a characteristic of the ridgetop.

North Kent Plain

Lying upon the fine loam soils found between the London Clay, and the North Downs chalk to the south, the North Kent Plain is one of the most productive agricultural areas in Kent. The landscape is open in character with a high proportion of arable land. It is characterised by a lack of hedgerows as field boundaries with only a few trees in the landscape. Limited shelter belt planting occurs mainly around small settlements and farmsteads on the few areas of higher ground. The landform is generally low but undulates giving local variations in topography. Poplar dominated shelter belts – or, north of Ash, alder – are particularly characteristic of the open and gently rolling eastern part of this area around the Great Stour Valley. These familiar landscape features to the northwest and south east of Canterbury, relate to the locally distinctive land use of orchards, soft fruits and other horticultural crops. The regular patterns and rectangular shapes of the fields typical of this area are more usually defined by changes in crop type, rather than by hedgerows. Within this landscape, the few small woodland blocks and copses that do exist add variety to the horticultural scene.

The North Kent Plain is underlain by extensive Tertiary deposits, ranging from the light sands and pebbles of the Oldhaven, Woolwich and Thanet Beds to the heavy, difficult-to-work soils of the London Clay. The Tertiary beds give rise to the low, gently undulating landform through which the Darent, Medway and Great Stour rivers drain northwards to the Thames Estuary and the North Sea. Thanet is an outlier of the same Chalk that forms the main body of the North Downs to the

west. It was originally an island separated from mainland Kent by a sea channel, the remains of which are the entirely silted-up Chislet Marshes and Ash Levels. The agricultural character of the area is dominated by a high proportion of arable land with very little stock rearing. Large and exposed intensively cropped fields are common while hedgerows and individual trees are generally limited with few areas of unimproved pasture.

Other key characteristics:

- Extensive areas of grazing marsh (little in the Wantsum Channel) and reedbeds.
- Lines of pylons dominate the open and often treeless landscape.
- Orchards and horticultural crops to the east predominate and are enclosed by poplar or alder
- shelter belts and scattered small woodlands.
- Urbanisation and large settlements are sometimes visually dominant in the landscape due to the lack of any screening woodlands or shelterbelts; this is generally not the case in the IDB district.

3.5. Landscape Designations

Part of the IDB District (approximately between Wye and Chilham) is in the Kent Downs Area of Outstanding Natural Beauty (AONB).

The Kent Downs is the eastern half of the North Downs, stretching from the White Cliffs of Dover to the Surrey border. It is a diverse landscape featuring chalk escarpments, dry valleys, ancient woodlands, traditional orchards, locally distinctive villages, and many sites of historic and cultural interest. The Kent Downs were designated in 1968.

3.6. Sites and Monuments

National sites

The following Scheduled Ancient Monuments fall within or border the drainage district:

- Romano-British settlement and WW2 pill box, Stanhope
- Boy's Hall Moat, Sevington
- Reculver Roman Fort and Towers (bordering)
- Ring ditches NW of Great Brooksend Farm, Birchington (bordering)
- Minster Abbey (bordering)
- Sandwich Town Walls
- Romano-Celtic temple and site, Worth (bordering)
- Wingham Roman Villa (bordering)
- Enclosure of Newnham Farm, Grove Hill (bordering)
- Anglo-Saxon cemetery, Ash Mill, Guilton (bordering)
- Richborough Castle (bordering)

None of these sites are thought to be currently affected by water levels in or maintenance of IDB watercourses, but this may require review in the future.

County Sites

The following section lists sites in Kent's Historic Environment Record (HER) which could potentially be affected by the IDBs operations. These sites are of county importance.

TR269688 South of railway on Wade Marsh

This site is recorded as the cropmark of a ring ditch and some pits and is likely to be a prehistoric site. Works in this area may affect archaeological remains and even drain clearance may reveal archaeological remains as the visible arc of the ring ditch suggest that the feature may be cut by the drain. It would be appropriate for any intrusive works here to include archaeological mitigation.

TR335633 North of Ebbsfleet Farm, Richborough

This site lies alongside the Ebbsfleet peninsula which was a focus for early activity. Archaeological remains, especially those from prehistory are likely to be present and a midden site is recorded close by. Similar remains may be affected by works. It would be appropriate for any intrusive works here to include archaeological mitigation.

TR224657 East of Marshside Farm, Chislet

The HER records 18th Century drover's bridges and sheep washes constructed of red brick with stone or brick copings on this section of the North Stream. Any works here should seek to ensure that these historic features are not impacted upon.

TR239661 Near Whitfield Sewer, Chislet Marshes

The site lies in the former Wantsum Sea Chanel which gradually silted up and was reclaimed during the medieval period. There are a number of undated linear cropmarks here which are recorded in the HER. There are also recorded remains of WWII date which follow the watercourses in this area where they were used to form an anti-invasion line of defence (often with flanking fire from pill-boxes). Works here should avoid any impact on remains associated with this stop-line.

TR233679 North-East of Grays Farm, Reculver

The HER points here relate to at least two medieval salt-mounds which have been identified following field survey. The mounds are understood to have produced pottery of 13th/14th century date. It is possible that work here could affect remains associated with the medieval salt industry and depending on the type of work involved archaeological monitoring may be appropriate.

TR228687 South of Reculver

The site lies in the former Wantsum Sea Channel which gradually silted up and was reclaimed during the medieval period. There are a number of undated linear cropmarks here which are recorded in the HER. It is unlikely that minor works here would affect archaeological remains, but if significant ground disturbance is proposed then archaeological monitoring would be appropriate.

TR344564 North of Great Wood, Worth

The HER points here relate to concentrations of prehistoric flint artefacts which are indicative of past activity in the area. It is unlikely that minor works here would reveal archaeological remains, but if significant ground disturbance is proposed then archaeological monitoring may be appropriate.

3.7. Tree Preservation Orders

Details of TPOs are available on Council websites:

www.ashford.gov.uk

www.canterbury.gov.uk

www.dover.gov.uk

www.folkestone-hythe.gov.uk

www.thanet.gov.uk

3.8. Statutory Nature Conservation Sites

3.8.1 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.

Site name	Designation	Associated WLMP?*	Features Relevant to IDB
Sandwich Bay (part of)	SAC	Yes	Only a very small part of the SAC is within the district.
Stodmarsh	Ramsar	Yes	Grazing marsh, reedbed, wet woodland, river, lakes. Six UK RDB wetland invertebrates including shining ramshorn snail. Two nationally rare plants, and five nationally scarce species, including rootless duckweed and divided sedge. A diverse assemblage of rare wetland birds.
Stodmarsh	SAC	Yes	See above; this citation specifically mentions Desmoulin's Whorl Snail.
Stodmarsh	SPA	Yes	See above; this citation specifically mentions bittern, gadwall, hen harrier, shoveller and an internationally important assemblage of birds, including reed warbler and water rail.

Thanet Coast and Sandwich Bay (part of)	Ramsar	No	The parts of the Ramsar within the drainage district are in the Lydden Valley/Hacklinge Marshes area and the Ham Brooks area, consisting of fen, alder carr, grazing marsh and former grazing marsh with ditches. A range of other habitats either lie outside the drainage district or are not relevant to this plan. Important species include a range of plants such as fen pondweed and whorled water-milfoil, and fifteen UK RBD invertebrates.
Thanet Coast and Sandwich Bay (part of)	SPA	No	See above, but SPA encompasses less grazing marsh; designation focuses on coastal birds and no species relevant to this plan are highlighted.

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

3.8.2 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.

Site name	Designation	Component of an International Site	Associated WLMP?*	Features Relevant to IDB
Hothfield Common (bordering drainage district)	SSSI	No	No	*Note: This SSSI borders the drainage district, none of it falls within, but because of the water-dependent nature of some habitats and the presence of an IDB managed watercourse along the boundary, it is considered to be a relevant site.* Lowland valley bog and associated bog plants such as sphagnum mosses, bog asphodel and round-leaved sundew. Marshy grassland and fen. An outstanding assemblage of over 1,000 insect species including notable odonatans such as four-spotted chaser. Great crested newts. Also other important habitats and species associated with drier, heathland areas.
Preston Marshes	SSSI	No	Yes	Fen, reedbed and grazing marsh. Scarce wetland plants including sharp-leaved pondweed, whorled water-milfoil. Wetland birds including reed bunting, reed warbler, lapwing, teal, wigeon, Cetti's warbler, bearded tit.

Stodmarsh	SSSI	Yes	Yes	Reedbed, open water, grazing marsh, alder carr. Wetland birds include reed bunting, reed warbler, Cetti's warbler, bearded tit, bittern, hen harrier, gadwall. RDB moths including reed dagger. Scarce plants including rootless duckweed.
Stodmarsh	National Nature Reserve (NNR)	Yes	Yes	See Stodmarsh SSSI above. The eastern part of the SSSI forms the NNR.
Sandwich Bay to Hacklinge Marshes (part of)	SSSI	Yes	Yes	The parts of the SSSI within the drainage district are in the Lydden Valley/Hacklinge Marshes, Ham Brooks and Weatherlees Hill areas, consisting of fen, alder carr, marshy grassland, pasture, grazing marsh and former grazing marsh with ditches. Scarce wetland plants including divided sedge, fen pondweed, least bur-reed and river water-dropwort. Many odonatans. Over-wintering birds in large numbers.
Wye and Crundale Downs (part of)	SSSI		No	Only a very small part of this SSSI falls within the drainage district, and the unit in question (no.15) is geological in its interest.

3.8.3 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.

Site name	Designation	Features Relevant to IDB
Hothfield Heathlands (part of)	KWT Reserve	See information on Hothfield Common SSSI, in table 2. Recent extensions to this reserve include an area of wet meadow creation to the south-west of the SSSI – this section falls within the drainage district.
Ham Fen	KWT reserve	Fen and associated plants such as bog pimpernel and greater spearwort. Wet grassland with ditches and aquatic plants such as whorled water-milfoil and least bur-reed. Wet woodland with plants such as great fen-sedge. Beaver have been released at this reserve.
Lydden Valley	RSPB reserve	See information on Sandwich Bay to Hacklinge Marshes in table 2.
Ash Level and South Richborough Pasture	LWS	Agricultural land with drainage channels. Linear habitats such as drove roads, counter walls, hedgerows and arable margins. Semi-improved pasture. Wetland plants, including tubular water-dropwort, hairlike pondweed, rootless duckweed and divided sedge. Birds include reed bunting, and over-wintering species such as teal in large numbers. Invertebrates include shining ramshorn snail. Nationally important population of water voles.
Backhouse Wood (bordering drainage district)	LWS	Note: This LWS borders the drainage district, but because of the nature of the habitats and the presence of an IDB managed watercourse along the boundary, it is considered to be a relevant site. Ancient semi-natural woodland, wet in character, with streams and wet ditches. Plants include opposite-leaved golden-saxifrage, remote sedge and 26 ancient woodland indicators. Serotine bat. Wide range of odonata.
Buxford Meadow	LWS	Unimproved neutral meadow, wet woodland. Good range of wetland plants. Sixteen RDB invertebrates (mostly Nb level). Twelve odonata species. Grass snake.
Chislet Marshes, Sarre Penn and Preston Marshes	LWS	Chislet Marshes: Agricultural land with drainage channels. Linear habitats such as drove roads, counter walls, hedgerows and arable margins. Range of wetland plants in ditches including divided sedge. Reed warbler, reed bunting. Nationally important population of water voles. Sarre Penn: Marshy grassland, reedbeds. Wetland plants including shining pondweed. Grass snake. Good range of odonata. Preston Marshes: Restored wet pasture (former arable) with ditches. Rich aquatic flora including bogbean and whorled water-milfoil. Grass snake. Water vole. Reed bunting and reed warbler. Range of odonatans including hairy dragonfly and variable damselfly.
Elmstone Valley	LWS	Wet woodland, damp pastures with ditches, reedbed, stream, fen. Range of wetland plants. Breeding reed bunting and reed warbler. Wintering birds in grasslands. Grass snake.

Lenham Heath and Chilston Park (part of)	LWS	Only a very small part of this LWS falls within the district. It consists of very damp, semi-improved and unimproved sheep pastures with adjacent shaws and marsh.
Little Chart Mill Ponds and Woodland (part of)	LWS	The part of this LWS within the district consists of the mill ponds upstream of Ford Mill, the Great Stour and its corridor, a calcareous stream and a wet woodland known as River Field Shaw. There is alder carr with plants such as greater tussock sedge and marsh marigold. Wooded, shady river fringes support slender tufted sedge and small teasel. Range of bryophytes. Kingfisher, snipe.
Little Hall and Kemberland Woods and Pasture (part of)	LWS	The part of this LWS within the district is the series of unimproved and species-rich semi-improved neutral pastures to the north-west of Kemberland Woods, which lie in the Sarre Penn valley. Plants include pepper saxifrage, spiny restharrow and meadow vetchling. Stream sides support branched bur-reed and water mint.
River Great Stour etc., Godinton (part of)	LWS	River with natural character, featuring plants such as river and tubular water-dropwort. Ditches with a wide variety of wetland plants. Wet, unimproved pastures and marshy grasslands with sneezewort and marsh speedwell. Wet woodlands, known as Willow Bed and River Spinney. Range of wetland birds including reed bunting, reed warbler and snipe. Presence of white-clawed crayfish one of key reasons for designation.
Seaton Pits and Wenderton Manor Woods (part of)	LWS	Open water in former gravel pits, fringes of tall fen, osier scrub and reedbed, with plants including bogbean and distant sedge. Rough damp grassland with bee orchid. Calcareous stream (Little Stour) with river water dropwort and other plants; brook lamprey is present. Ditches with diverse flora including hairlike pondweed and arrowhead. Excellent bird fauna including gadwall, Cetti's warbler, water rail, goldeneye, smew and other wild fowl on the lakes, marsh harrier, hen harrier, reed bunting. Water vole, water shrew, harvest mouse. Bats including Daubenton's and Pipistrelle. Grass snake, common toad.
South Willesborough Dykes (part of)	LWS	Heavily grazed, slightly improved pasture with ditch network. Some arable and sown leys. Plants include water violet and three species of dropwort. Marsh stitchwort used to occur here at its only site in Kent but is now thought to be absent. Bryophytes include Ulota phyllantha. Good numbers of lapwing. Captains Wood is included in the LWS but is not in the drainage district.
Woods and Grasslands, Minster Marshes (part of)	LWS	Rough grassland, damp scrub, a damp copse, reedbeds, silted ponds. Plants include narrow-leaved reedmace and yellow flag iris. Good lichen and bryophyte flora for the area.
Great Stour, Ashford to Fordwich	LWS	This complex LWS runs from Buxford Bridge west of Ashford to Fordwich. River corridor with natural character. Associated habitats - wet grassland, wet woodland, swamp, a few areas of unimproved neutral grassland. Plants including shining pondweed, river water dropwort, common meadow rue. Rare coleoptera and a range of odonatans. Otters have been recorded. Water voles, white-clawed crayfish, Atlantic salmon. Wide range of birds including water rail, reed bunting, Cetti's warbler, gadwall and other wildfowl, lapwing, occasional sightings of bittern.

3.9. 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.

National Priority Habitat	National Status & Extent	Local Priority Habitat	County 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	3.9 million ha of arable crops and 100,000ha of arable field margins in England	Cereal field margins	2012 Kent Habitat Survey found Arable and Horticulture covers 137,227ha or 35% of the county. Field margins were not recorded	Arable field margins	Throughout drainage district, particularly Lower Stour Marshes.	Medium
Traditional orchards		Old orchards	1,676ha of traditional orchards, around 10% of the traditional orchard priority habitat for England.	Not important	N/A	Low
Boundary and Linear Features	It is estimated that there are 450,000 km of hedgerow in the UK, of which 190,000 km are 'species-rich'	Ancient and/or species-rich hedgerows	1,144 km of species-rich hedgerows in 1995. Not measured in 2012 Habitat Survey	Hedgerows Bankside trees Flood banks Drove roads	Throughout drainage district, particularly Lower Stour Marshes.	Hedgerows and bankside trees - High Flood banks and drove roads - Medium
Lowland mixed deciduous woodland		Mixed broadleaved woodland and plantations	153 ha	Not important	N/A	Low

Wet woodland	50–70,000 hectares UK. Trend not known	Wet Woodland	2012 Kent Habitat Survey recorded 662ha. Increase from 2003 likely due to better survey accuracy	Wet woodland	Scattered throughout drainage district, although few woodlands on Lower Stour Marshes.	Medium - ensure no drainage in vicinity
Lowland fen	25,785 ha in England	Lowland fen	12ha	Lowland Fen	Westbere, Stodmarsh, Ham Fen, Worth Minnis, Hothfield Common (adjacent to drainage district).	Medium
Reedbed	about 5000 ha	Reedbed	545ha (2012) not including reed-lined dredged channels	Reedbed	Mainly Westbere, Stodmarsh, Preston Marshes.	Medium
Coastal and floodplain grazing marsh	216,000 – 300,000 ha in the UK. Trend unknown	Coastal and floodplain grazing marsh	14,170ha	Grazing Marsh	Key areas are South Willesborough Dykes, Stodmarsh, Preston Marshes, parts of Ash Level, Hacklinge Marshes.	Medium
Lowland Meadows	less than 15,000 ha of species-rich neutral grassland	Lowland Meadows	27.7 ha	Lowland Meadows	Preston Marshes, pastures near Kemberland Woods, Minster Marshes, Ham Brooks, Hacklinge Marshes.	Medium
Chalk Rivers	35 chalk rivers in UK	Chalk rivers	Nailbourne and stretches of the Great Stour, Little Stour and North Stream.	Rivers and streams	Near natural sections of IDB maintained watercourses.	Medium
Eutrophic standing waters Ponds	likely to be around 1785 sq. km	Standing open water	Not available	Standing open water – lakes, ponds etc.	Throughout drainage district, particularly river corridors.	Medium
Standing open water	No data available	Standing open water	No data available	Drainage ditches	Throughout drainage district. Main channel networks are in Lower Stour Marshes.	High

3.10. 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. The Local Nature Recovery Strategy, published in November 2025 has a reduced list of priority species. The Kent and Medway Local Nature Recovery Strategy development process required a focussed list of priority species, identified as the species in most urgent need amongst other considerations. However, it is still important to take account of all the county's rare, threatened and significant species in any habitat management, restoration, extension or creation work. A list of Kents Rare, threatened and significant species is also included within the Strategy.

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)
Stoneworts (charophytes)	9 species are on S41 List	Non-KBAP taxon but Important in District	Probably throughout drainage district, but distribution poorly understood.	Improved knowledge of this group is required, but stoneworts are probably suited to IDB watercourses as they are early colonisers of open water. Medium
Frizzled pincushion moss *(Ulota phyllantha)*	Nationally scarce; distribution scattered, more in south-east.	Non-KBAP Species but Important in District. Expanding range in Kent but scarce, coastal north and eastern distribution.	South Willesborough Dykes – 1 of only 2 Kent sites.	Improved knowledge of this species (and other mosses) is required before an assessment of its importance can be made. Medium
Dittander *(Lepidium latifolium)*		Non-KBAP Species but Important in District	Stodmarsh and Grove Ferry area. Associated with Main River and recorded from only 1 IDB watercourse on Ash Level (IDB 177 – Grip Sewer) but probably more frequent. Probably expanding range.	Associated with coasts and estuaries, it does occur on ditch banks. High

Divided sedge (*Carex divisa)*	S41 Species Nationally scarce and declining Restricted to coastal areas in South and East of England, distribution stable since 1960s	KBAP Priority Species. Declining in Kent, coastal and river corridor distribution. LNRS Long list	Ash Level, Preston Valley, Gosshall Valley, Hacklinge – Probably declining.	A species of wet pasture, drove roads and ditch banks, including many IDB watercourses. High
Fen pondweed (*Potamogetan coloratus)*	Nationally scarce, mainly eastern counties, scattered populations elsewhere.	Non-KBAP Species but Important in District. Declining in Kent. KRDB3	Hacklinge (only population in Kent). occurs in a number of IDB watercourses	Does occur in ditches. A significant part of this plant's stronghold is on Worth Minnis Sewer which is IDB managed. High
Hairlike pondweed (*Potamogetan trichoides)*	Nationally scarce, more frequent in south and east.	Non-KBAP Species but Important in District. Restricted to Lower Stour and Romney Marsh in Kent. Probably declining LNRS long list	Ash Level, Richborough Stream, Sarre Penn, Seaton, Hacklinge	Occurs in open ditches. High
Hog's fennel (*Peucedanum officinale)*		Non-KBAP Species but Important in District LNRS Long list	Sea Wall between Reculver and Minnis Bay	A species which occurs on clay banks near the sea and along tidal watercourses and of saltmarsh. Low
Least bur-reed (*Sparganium minimum)*	UK distribution with a north-west trend.	Non-KBAP Species but Important in District and region	Restricted to Hacklinge Marshes, where it occurs in a number of IDB watercourses. This is thought to be the only population in south-east England. NE requested its inclusion. Population declining at this site.	Occurs in ditches. Hacklinge Marshes hold the only population in the South-East. High
Rootless duckweed (*Wolffia arrhizal)*	Nationally scarce, very much a southern distribution – Somerset Levels, Romney Marsh and Lower Stour are strongholds. Trend uncertain.	Non-KBAP Species but Important in District. KRDB2 LNRS Long list	Ash Level is a stronghold, also Stodmarsh and one record from Goshall Valley	Prefers open watercourses, including a number of IDB watercourses. High

Sharp-leaved pondweed (*Potamogetan acutifolius)*	RDB2. Scattered populations mainly in southern counties, East Anglia. Declining across England.	KBAP Priority Species. Probably declining. Occurs on Romney Marsh and lower Stour marshes LNRS Long list	Stodmarsh and Preston SSSIs. Not recorded in IDB watercourses but NE advise it may be present and request this species be included.	A species which occurs in ditches. High
Tubular water-dropwort (*Oenanthe fistulosa)*	S41 Species Distributed across most of England, except far SW and N. Declining across south, east and midlands. Decline due to field drainage and conversion to arable	KBAP Priority Species. Probably declining LNRS Long list	Western Ash Level and Gosshall Valley are stronghold, also single records from Chislet Marshes and Grove area and present at Hacklinge. Also present in west of drainage district – it is mentioned in LWS citations for Godinton and South Willesborough Dykes.	A species which occurs on ditch banks. High
Whorled water-milfoil (*Myriophyllum verticillatum)*	Declining in UK. Widely distributed across south, east and midlands, more scattered in north and west.	Non-KBAP Species but Important in District. KRDB3. Probably declining. LNRS Long list	Preston and Stodmarsh. Recorded from only 1 IDB watercourse in the Preston area (IDB 86 – Supperton Dyke) but may be under-recorded.	Occurs in a wide range of watercourses. High
Shining ramshorn snail (*Segmentina nitida)*	S41 Species formerly widespread in lowland England, now restricted to a few locations in the SE and East Anglia	KBAP Priority Species. The Lower Stour is the only area for this species in Kent. LNRS Long list	Only found in a few ditches at Ash Levels, Westmarsh, Stodmarsh, Grove,	A species of ditches in late successional stage but known to occur in some IDB watercourses. High
A pea mussel (*Psidium psuedosphaeriu m)*		Non-KBAP Species but Important in District	Ash Level, Stodmarsh,	A species of ditches in late successional stage but known to occur in some IDB watercourses. Medium
Desmoulin's whorl snail (*Vertigo moulinsiana)*	S41 Species. Restricted to scattered sites across SE England	KBAP Priority Species. LNRS Long list	Westbere	A species of lush marginal calcareous wetland vegetation. High

White-clawed crayfish (*Austropotamobius pallipes)*	S41 Species. In sharp decline	KBAP Priority Species	Great Stour, Pig Brook	Known to be present in IDB7, formerly in IDB25 also. High.
Variable damselfly (*Coenagrion pulchellum)*	Scattered, fragmented distribution in Britain, mainly southern England, East Anglia, South Wales and south-west Scotland. British Dragonfly Soc currently surveying due to concerns its range may be contracting	Non-KBAP Species but Important in District. KRDB3. In Kent all records are from the Lower Stour apart from two at Graveney. LNRS Long list	The drainage district is an important stronghold for this species. It has been recorded at Stodmarsh, Westbere, Hacklinge and Preston. BDS data from 2012 suggests population stable in Lower Stour	A species of still or slow-flowing ditches, ponds etc. with good marginal vegetation. Conservation requirements not well understood but IDB channels could provide significant habitat. High
Hairy dragonfly (*Brachytron pratense)*	Patchy UK distribution, mainly southern Britain. Uncommon but increasing in range	Non-KBAP Species but Important in District. KRDB3. quite widely distributed in wetland areas and river corridors; appears to be on the increase but may have been under-recorded before. Lower Stour populations are regionally important	Mainly on the Lower Stour but there are also records from Hothfield, Sevington, Chilham and Shalmsford Street areas.	Prefers still, linear water bodies with good marginal vegetation and occasional trees. Medium
Scarce chaser (*Libellula fulva)*	Scattered southern and eastern distribution in the UK, only occurring at 6 locations, but can be locally abundant. National population stable and range may be expanding. Classed as 'Near Threatened'.	Non-KBAP Species but Important in District. KRDB1. Classified as 'endangered' in Kent, with the few sporadic recent records all from the Lower Stour, which is a regionally, and possibly nationally, important population	Two Sub-populations at Westbere/Stodmarsh and Hacklinge Marsh. 2012 survey showed presence on IDB 277 at Hacklinge, while no surveying was carried out at Westbere LNRS Long list	Slow to moderate flowing watercourses, lakes, gravel pits and ponds, with submerged, floating and ample emergent marginal vegetation, plus areas of open water. Tends to occur where there is adjacent scrub but avoids heavy shade. High

Norfolk Hawker (*Anaciaeschna isosceles*)	Nationally important (Endangered). Until recently, restricted to Norfolk Broads and a few areas of North Suffolk.	Recent arrival in Lower Stour. Most endangered and highly protected species of Odonata in the catchment. LNRS Long list	Records mostly from Westbere/Stodmarsh, scattered records include Hacklinge, Chislet, Ash Levels and Little Stour Valley.	Grazing marsh ditch systems and ponds with good marginal vegetation, trees and shrubs – similar to scarce chaser. Associated with Water Soldier (*Stratiotes aloides*) in its primary range, which is rare in the Lower Stour. Sensitive to saline and brackish water. Medium
Scarce emerald Damselfly (*Lestes dryas*)	Nationally important (Near Threatened)	Substantial numbers on North Kent Marshes, small populations in Lower Stour LNRS Long list	Sandwich Bay, Hacklinge Marsh, Reculver	Shallow pools, drainage channels, coastal and estuary marsh. Dense submerged and emergent vegetation. Tolerates brackish water. Medium
Water beetle (*Cercyon granaries)*		Non-KBAP Species but Important in District	Westbere, Stodmarsh	A species of marginal ditch vegetation. Medium
Crawling water beetle (*Haliplus mucronatus)*		Non-KBAP Species but Important in District	Stodmarsh, Hacklinge	A species associated with marsh, ditches. Medium
Great silver diving beetle (*Hydrophilus piceus)*		Non-KBAP Species but Important in District LNRS Long list	Stour Valley, Stodmarsh to Sandwich	Occurs in ditches. Medium
Flowering rush weevil (*Bagous nodulosus)*		Non-KBAP Species but Important in District LNRS Long list	Sandwich area	Associated with grazing marshes, requires flowering rush. Medium
Moths (26 species)		Non-KBAP Taxon but Important in District	No precise data for most. Fisher's Estuarine Moth is present along Northern Sea Wall	A range of moth species use marginal and bankside plants associated with ditches as larval foodplants. General habitat measures will favour this group and species-specific actions not required. High

European eel (*Anguilla Anguilla)*	S41 Species.	KBAP Priority Species LNRS Priority species	Stodmarsh	Strong association with ditches, liking slow flowing watercourses with silty conditions and abundant weed. Present throughout the drainage district. High
Brook lamprey (*Lampetra planeri)*		LNRS Long list	Great Stour (Stourmouth to Worten), East Stour, Little Stour, other tributaries	Prefers medium to fast running rivers and streams. Present in the headwaters of the drainage district. Medium
Brown and Sea Trout (*Salmo Trutta*)	S41 Species	LNRS Long list	Present in Stour and main tributaries. Likely restricted to watercourses which retain natural character and good flow.	Sensitive to oxygen levels and hence silt, water temperature and flow. Exposed gravel bed required for breeding. Vegetation and tree roots for cover from predation. Juveniles likely to use tributaries to escape high flows. Medium
Atlantic salmon (*Salmo salar)*	S41 Species	Non-KBAP Species but Important in District LNRS Long list	Great Stour in small numbers - upstream to Wye, mainly Chartham to Godmersham	Low association with IDB watercourses. Low
Common toad (*Bufo bufo)*	S41 Species. Still quite common and widespread in Britain, but has undergone significant declines in lowland England, thought to be due to loss of breeding ponds, changes to terrestrial habitat and impact of road traffic.	KBAP Priority Species. Patchy distribution but may be under-recorded. LNRS Priority species	Scattered records in upper and middle parts of drainage district, with a concentration around the Stodmarsh/Preston area, but far fewer below Grove Ferry.	A species of deeper, more open waterbodies; can tolerate the presence of fish. IDB watercourses are ideal habitat but lack of woods in lower stour may be limiting factor. High – but depends on outcome of survey
Great crested newt (*Triturus cristatus)*	S41 Species	KBAP Priority Species LNRS Priority species	Sporadic records in the drainage district	Requires ponds and other small water bodies with abundant vegetation and free of fish for breeding. It can occur in ditches, but IDB watercourses are probably not suitable habitat. Low
Grass snake (*Natrix natrix)*	S41 Species	KBAP Priority Species LNRS Long list	Throughout drainage district, many records from Great Stour corridor between Canterbury and Plucks Gutter; far fewer from Lower Stour	Associated with a range of wetland habitats; hunts in and around water. General habitat measures will favour this species and species-specific actions not required. High

Viviparous Lizard (*Zootoca vivipara*)	S41 Species	Locally abundant LNRS Long list	Data not available but species is very widespread so likely to occur throughout district	Diverse habitats – small woods, grassland, heath. Features such as logs, fence posts and piles of rubble used for basking. Require fine mosaic of habitat. Medium
Reed bunting *(Emberiza schoeniclus)*	S41 species. UK population fell by 31% between 1970 and 2007. There has been a partial recovery over the last 15 years. Found throughout Britain and Ireland, scarcer in the uplands.	KBAP Priority Species. Declines in Kent have mirrored national picture. The species' distribution in the county reflects the presence of low-lying farmland and marshland. Declines are thought to be due to changes in agriculture and loss of wetland habitat. LNRS Long list	The reed bunting's distribution in East Kent follows quite closely the boundary of the drainage district, which is almost certainly a stronghold for this species	Breeds, roosts and feeds in reedbeds and reeds along ditches; other habitats also such as bankside trees, hedges and rank grassland. The vegetated ditch margins and banks of IDB watercourses, and adjacent trees and hedgerows are key habitats. Manage banks so as to maintain and extend areas of adjacent rank grassland. High
Reed warbler (*Acrocephalus scirpaceus)*		Non-KBAP Species but Important in District	Throughout drainage district	Strongly associated with reedbeds and reeds in ditches. Lower Stour area population nationally significant. This bird is characteristic of the drainage district, but it is not of conservation concern, and its habitat needs should be met by measure for reed bunting. High
Cetti's warbler (*Cettia cetti)*		Non-KBAP Species but Important in District	Stodmarsh and elsewhere in Lower Stour	Most nest in large reedbeds but also use scrubby areas, may nest and feed in heavily vegetated ditches. Kent population nationally significant. Medium
Barn owl (*Tyto alba)*		Non-KBAP Species but Important in District LNRS Priority species	Ash Levels, other marshes, river corridor	Associated with marshlands, hunts over ditch banks. General habitat measures will favour this species and species-specific actions not required. Medium
Water rail (*Rallus aquaticus)*		Non-KBAP Species but Important in District	Stodmarsh and elsewhere	Breeds in reedbeds but also inhabits reed choked ditches in winter. Thought not to breed often in ditches. Medium

Sky lark (*Alauda arvensis)*	S41 species	KBAP Priority Species LNRS Priority species	Throughout open landscapes in the drainage district	May nest on ditch banks. General habitat measures will favour this species and species-specific actions not required. Medium
Marsh harrier (*Circus aeruginosus)*		Non-KBAP Species but Important in District LNRS Priority species	Marshland areas of drainage district	Most nest in extensive reedbeds but occasionally in reed-filled ditches. Hunt along dykes. Medium
Pochard (*Athya ferina)*		Non-KBAP Species but Important in District LNRS Priority species	Small numbers breed Stour Valley	Nests and feeds in or beside ditches. Prefers those in mid-succession. Kent's population significant nationally. Medium
Garganey (*Anas querquedula)*		Non-KBAP Species but Important in District LNRS Long list	Rare; small numbers breed Stour Valley	Nest and feed in marshland, will use ditches especially in grazing marsh. Prefers those in mid-succession. Medium
Gadwall (*Anas strepara)*		Non-KBAP Species but Important in District	Small numbers breed Stour Valley	Most associated with large marshes but may nest and feed in dyke systems. Prefers ditches in mid-succession. Medium
Shoveler (*Anas clypeata)*		Non-KBAP Species but Important in District LNRS Priority species	Stodmarsh and elsewhere in Lower Stour	Nest and feeds near dykes in grazing marsh & arable in lower Stour valley & coastal marshes; Kent population significant nationally. Medium
Kingfisher (*Alcedo atthis)*	Amber listed species in the 'Birds of Conservation Concern' Schedule 1 WCA 1981 Formerly declining along linear waterways until the mid-1980s, since recovered.	Non-KBAP Species but Important in District LNRS Priority species	Scarce but widespread in drainage district.	Careful management around likely nest sites: holes in steep or vertical banks. Medium
Lapwing (*Vanellus vanellus)*	S41 species	KBAP Priority Species LNRS Priority species	Ash Levels, Hacklinge Marshes, other parts of Lower Stour	Breeds in important numbers in grazing marshes. Medium

Redshank (*Tringa tetanus)*		Non-KBAP Species but Important in District LNRS Priority species	Hacklinge and other parts of the Lower Stour, with a coastal bias.	Mostly coastal in winter but small numbers feed along muddy margins of larger, more open dykes. Medium
Snipe (*Gallinago gallinago)*		Non-KBAP Species but Important in District LNRS Long list	Stodmarsh and other wetland areas in the Lower Stour.	Most in more extensive wetlands and damp fields but some feed along dyke margins, preferring more open channels. Medium
Water Vole (*Arvicola terrestris)*	S41 species, Listed in WCA 1981 Dramatic decline in UK - 1989 survey recorded 67% losses from former sites. Fastest declining mammal in Europe. Loss of bankside habitat and predation by American mink are main causes.	KBAP Priority Species Populations are declining in Kent but the county is thought to be a stronghold for the species. LNRS Priority species	Throughout drainage district, but especially abundant in Lower Stour Marshes, which is thought to be a nationally important population	Lives in well-vegetated banks of rivers, streams and ditches but can also be found in ponds, lakes, gravel pits and canals. Very good populations in IDB watercourses. High
Otter (*Lutra lutra)*	S41 species. Numbers have been slowly recovering since the 1970s. Expanding Southwards and Eastwards.	KBAP Priority Species. LNRS Priority species	Present in Stour catchment. Sightings and signs have been rising in recent years, especially around Canterbury and downriver	Any vegetative or manmade cover can be used for resting. Preservation of a mixture of scrub, longer herbaceous vegetation, woodland and hedges for connectivity. Reedbeds and islands are used. Careful management around potential holts: large, mature bankside trees and large holes in banks. Most important factor is food supply – fish. Medium
Harvest mouse (*Micromys minutes)*	S41 species	Non-KBAP Species but Important in District LNRS Long list	Lower Stour Marshes	A species of hay meadows and traditionally farmed cereal fields, also found in the emergent and bankside vegetation of marsh ditches. General habitat measures will favour this species and species-specific actions not required. High.
Eurasian beaver (*Castor fiber)*		Non-KBAP Species but Important in District LNRS Priority species	Canterbury to Sandwich. Individuals escaped into wild and local population is spreading through the catchment.	Keystone species which maintains wetland habitat by activities which raise water levels and prevent succession: tree-felling, damming water courses, digging tunnels. High potential

				in certain areas for conflict with farming and IDB's core functions due to their effect on water levels within highly managed systems

3.11. Invasive Non-native Species Summary

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

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

Common & scientific name	Location within IDB if known	Local status / Extent within drainage district	IDB potential for controlling species population or range
Japanese knotweed (Fallopia japonica)	IDB 2 Pumping Station Dyke	Wide distribution across catchment, isolated patches, uncommon	Medium. Treat as and when it is located. Engage with landowners about treatment of plants close to IDB channels
Himalayan Balsam (Impatiens glandulifera)	Rarely seen on IDB channels	Occurs mostly on the Great Stour upriver from Canterbury	Low.
Parrots Feather (Myriophyllum aquaticum)	Wade Marsh, Richborough Marsh	Wide distribution across catchment, isolated patches, common in ponds and other still water	High. Mechanical/manual control at known locations is ongoing
Giant Rhubarb (Gunnera tinctoria)	Occasionally found on channel banks due to planting by riparian landowners	Widely distributed across region	High. Engage with landowners about manual removal wherever found.
Australian Swamp Stonecrop (Crassula helmsii)	Rubery Drove, Richborough Marsh	Wide distribution across catchment, isolated patches, common in ponds and other still water	Medium. Eradication is very difficult to achieve. Treat as and when it arises
Giant Hogweed (Heracleum mantegazzianum)	None currently known	Rare, isolated patches including near Main Rivers at Sandwich and on Nailbourne near Bridge.	Low due to lack of occurrence but. maintain vigilance

Floating Pennywort (Hydrocotyle ranunculoides)	None currently known	Present in Medway Catchment	Low due to lack of occurrence but. maintain vigilance
Water Fern (Azolla filiculoides)	Throughout Lower Stour marshes	Widespread, isolated patches, common	High, Biocontrol has been used over 5 years with impact. Monitor presence and consider further biocontrol when required
Signal Crayfish (Pacifastacus leniusculus)	None currently known	A few occurrences within catchment, including at Westbere, more common to the west in the Beult catchment	Low currently due to its absence from most of the catchment
American Mink (Neovison vison)	Many channels in the Lower Stour marshes	Throughout the catchment	High. Water Life Recovery South East partnership project commenced in 2025
Terrapin (Trachemys scripta spp)	Occasionally found in IDB channels	Widespread across the SE of England	Low but remain vigilant

For full list of current and potential INNS in region, refer to Regional Invasive Alien Species Management Plan for the South East and GB Non-Native Species Secretariat website: http://www.nonnativespecies.org.

3.12. 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).

There are three WLMPs in the IDB district (Preston Marshes, Sandwich Bay & Hacklinge Marshes, Stodmarsh). The Environment Agency is the lead authority for all of these WLMPs, but the IDB operates all water levels (in IDB watercourses and Main Rivers). All WLMPs are well overdue review and efforts should be made to address this.

Note on Climate Change

Climate warming resulting from human activity will have an increasing impact on all habitats over the coming decade. 2025 was the warmest summer on record for the UK. Species compositions will alter and the ability of organisms to migrate will become even more important. At present, annual rainfall is largely unchanged, but periods of drought and very heavy rainfall are increasing in duration. Demand for drinking water is expected to exceed available supply before the middle of the century, according to the EA. In this context, maintaining wildlife while performing core functions will become more challenging for the IDB.

4. Habitat and Species Action Plans

4.1. 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.

Actions have been carried out over the last 15 years under the IDB's Biodiversity Action Plan 2010. For details, see the original BAP itself and the 2 review documents, produced in 2015 and 2020.

4.2. Habitat Action Plans

4.2.1 Drainage Ditches and Associated Linear Features

This Habitat Action Plan (HAP) focuses on all watercourses managed by the IDB in its drainage district, but also includes terrestrial linear features that occur adjacent to drainage channels: bankside trees and hedges, drove roads and floodbanks. Linear aquatic and terrestrial habitats have been combined in a single HAP as they tend to be managed as part of the same programme of operations.

The IDB manage a variety of watercourses which vary in size, profile, speed of flow, period of flow (some are seasonally drier than others), and 'naturalness'. Underlying geology, surrounding land use and other environmental factors all affect their physical character and vegetation communities. While many channels, particularly on the Lower Stour Marshes, are man-made ditches, some are natural waterways (with varying degrees on modification) that are essentially streams. These more natural channels, which occur mainly but not exclusively in the Ashford area, can be sinuous, with moderately fast flows and riparian plant communities. The more typical marshland drainage ditches tend to be straight, with little or no base-flow and vegetation typical of standing water; their water levels and flows are more artificially controlled. The connectivity of channels also varies across the drainage district. In the Upper Stour Valley, channels are essentially tributaries to Main Rivers, and are not usually connected to other channels, while in the Lower Stour Marshes, they form large, highly inter-connected linear freshwater networks.

IDB-managed watercourses are part of a wider river system and drainage network, and so should not be viewed in isolation from the other watercourses they are ecologically connected to, even though the IDB exert much less influence over them. Main Rivers and a number of large, arterial drainage channels in the system are managed by the Environment Agency. Those non-Main River watercourses that have not been adopted by the IDB are the responsibility of individual landowners and are referred to in this plan as 'Ordinary Watercourses' or OWCs.

The drainage network as a whole can also be viewed as a spectrum of channel types varying in their degree of management and vegetation cover. At one end of the spectrum are infrequently managed ditches, choked with reeds and other vegetation, with little water

conveyance capacity. At the other end are intensively managed channels which have to be kept open in character in order to manage flood risk in built-up areas and to enable drainage and irrigation of agricultural land. Most IDB watercourses will lie towards the open end of this spectrum and are therefore more suited as habitat for species of more open watercourses. As a whole, the drainage network provides channels in a broad range of successional states due to varying degrees, timing, and periods of maintenance. This results in continuous availability of habitat for many specialist species over time.

Hedgerows and bankside trees are more frequent in the more wooded landscapes of the Middle and Upper Stour, although hedgerows are fairly frequent on the Lower Stour Marshes and mature pollarded willows are characteristic in places. Arable margins occur throughout the drainage district but there is more arable land in the Lower Stour. Drove roads and flood banks are features of the Lower Stour, some having ancient origins.

Good quality boundary and linear habitats function as wildlife corridors and refuges, particularly in arable landscapes. In the same way that drainage channels form an interconnected network, terrestrial linear habitats are important in achieving landscape connectivity, linking areas of semi-natural habitat, which is very important in conserving species that make terrestrial migrations, such as common toad and otter. Their role in linking important sites is as valuable as their role as habitats in their own right.

Riparian boundaries can be very important for the health of waterbodies and farmland. If managed appropriately these habitats can: prevent soil erosion; improve soil structure; enhance biodiversity; improve water quality; and help alleviate diffuse pollution risks from agricultural land. If situated appropriately and managed, water margins act as a buffer between the managed land and the water. They slow the flow of overland runoff, increase infiltration and prevent soil, sediment and nutrient loss from fields.

It is generally the case that boundary and linear habitats are not as important in the drainage district as wetland habitats. Having said this, some will form parts of nationally and internationally important sites. In farmland recently converted to arable crops, hedgerows, drove roads and flood banks may represent the only significant elements of uncultivated dry land, and so become places to which species retreat.

In 2019, in a process known as ‘demaining’, approximately 37km of formerly Main Rivers were reclassified and responsibility for their management passed to the IDB.

In 2024 the IDB adopted a further 3km of watercourses, previously known to be problematic and which will benefit from regular maintenance.

4.2.1.1 *Objectives*

IDB Objectives	
1	Maintain and, where possible, increase the biodiversity present within IDB watercourses while maintaining drainage standards
2	Ensure no net loss of bankside hedges or trees as a result of IDB activities

Partnership Objectives	
1	Improve management of all watercourses in the drainage district for biodiversity and prevent losses of channels
2	Increase net number/length of bankside native trees and hedgerows within IDB district
3	Encourage positive management to maintain and enhance existing features across the drainage district.

4.2.1.1.1 IDB Actions

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Resurvey ditches periodically and compare data to baseline. Prioritise channels based on location, botanical diversity, time since enhancement project, etc. Modify management prescriptions where necessary	Length of channels resurveyed and no. of site visits	Ongoing	IDB Ecologist	IDB staff
1	**1b**	Continue to review survey methods. A comprehensive guide was completed in 2025. Good practice requires regular review	Revision of survey method completed	ongoing	IDB Ecologist	IDB

1	**1c**	Record and monitor invasive species and control where possible to eradicate or prevent spread	Mapping of all known locations of invasive species on IDB watercourses	ongoing	IDB	IDB Ecologist, Landowners, EA
1	**1d**	Avoid culverting, canalization and diversion where possible	Record instances where measures are avoided	ongoing	IDB Staff	, LPAs, Landowners
1	**1e**	Communicate rationale for prescriptions, biodiversity measures, etc to contractors	Delivery of annual briefing for operators	annual	IDB	Ecological consultant
1	**1f**	Maintain communication with site managers/owners of protected sites to ensure favourable condition is maintained/achieved	As a minimum, consult over new management prescriptions and enhancement projects affecting protected sites	ongoing	IDB Ecologist	LOs, NE, RSPB, KWT, IDB
1	**1g**	Complete baseline surveys of recently adopted channels and create management prescription sheets	Completion of surveys and management sheets	ongoing	IDB Ecologist	IDB
1	**1h**	Use channel survey data to assess which channels would benefit most, or suffer least, from reduced management following demaining project.	Completion of modified cutting programme – updates from resurveys will be ongoing	ongoing	IDB	IDB Ecologist
1	**1i**	Work with landowners to address land management practices which negatively impact watercourses and promote best practice	No. of consultations with landowners	ongoing	Ecological consultant	NE, CSF, LOs,
1	**1k**	Ensure that water level controls do not have a deleterious effect on the ecology of channels: where channels have a flow, maintain it where possible to prevent excessive growth of duckweed and algae; where there is no flow, flush to remove blankets of algae or duckweed	Record measures taken to improve flows	ongoing	IDB Ecologist	IDB staff
1	**1lg**	Develop system for prioritising channels for enhancement projects, based on current condition, proximity to designated sites, and potential for improvement	Completion of system	2026	IDB Ecologist	IDB staff

1	**1m**	Carry out one enhancement project per year, with input from stakeholders and experts, and monitor results	Completion of project	annual	IDB Ecologist, IDB Staff	Contractor, EA, landowners
2	**2a**	Ensure that compensation planting with native species takes place if any hedges or individual trees are removed due to IDB activities.	Record trees/hedgerow planted	If required	IDB	IDB Ecologist, Landowners
2	**2b**	Avoid damage to existing hedges and trees (does not preclude management to allow watercourse maintenance, including coppicing)	Check for damage during summer surveys and other site visits	Ongoing	IDB Ecologist	IDB, Landowner

4.2.1.1.2 Partner Actions

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Promote better management of Ordinary Watercourses for biodiversity, water quality and maintenance of water levels; advise on grant schemes for funding relevant work	No. of LO engagements, talks and engagement events, etc	ongoing	KSCP	LOs, NE, EA, IDB
1	**1b**	Increase period of wetting of side channels (OWCs) in grazing marsh	No. of side-channels where this issue is addressed	ongoing	Landowners	IDB, IDB Ecologist
2	**2a**	Replace non-native hedges and shelterbelts with native hedges	Record LO engagement and tree works	ongoing	Landowners	IDB Ecologist/IDB
2	**2b**	Liaise with landowners to prevent net loss of trees and hedgerows in the drainage district.	No. of presentations, etc.	ongoing	KSCP	IDB
3	**3a**	Engage with landowners about boundary and linear habitats: their value for wildlife, best practice management, and sources of funding	No. of LO engagements	ongoing	KSCP	NE, IDB, Landowners

4.2.2 Floodplain Wetlands

This HAP focuses on all wetland habitats in the drainage district other than drainage channels. It encompasses several habitats from 4.9 Habitat Audit Summary: wet woodland, lowland fen, reedbed, coastal and floodplain grazing marsh, lowland meadows, standing water – lakes and ponds. The decision was taken to amalgamate these six habitat types under one plan because the IDB's main direct effect on them is via water level management. While the nature of this management will vary, it was felt that separate plans would duplicate content. In addition, these habitats commonly occur together in mosaics, particularly at larger, protected sites. In the drainage district most of these habitats occur mainly within designated sites, although ponds occur more widely, and the distribution of wet woodland and grazing marsh needs reviewing.

Floodplain wetland habitats are part of a wider wetland ecosystem and should not be viewed in isolation from each other, or from IDB watercourses and Main Rivers. Wetlands in the drainage district have a high degree of ecological connectivity, often linked by rivers, streams and other watercourses. Even where elements within the wider ecosystem are not physically connected, flooding events can have a common influence over them, for example when an isolated floodplain pond is inundated by river flood waters. A continuous, connected mosaic of wetland and other farmland habitats is important for otters, which can travel large distances in search of prey.

Many floodplain wetland habitats in the drainage district are of national importance. Many occur within nationally or internationally important sites (Stodmarsh, Hacklinge, Preston Marshes, Hothfield Common) and all but the smallest known instances of lowland fen, reedbeds and meadows occur in statutory sites. Wet woodland and grazing marsh occur in statutory sites but also in locally important designated sites; improved recording may reveal some in undesignated sites. Lakes and ponds have less restricted distributions and fewer are part of designated sites.

4.2.2.1 Objectives

IDB Objectives	
1	Manage IDB watercourses so that wetland habitats within statutory sites remain in favourable condition

Partner Objectives	
1	Improve condition catchment-wide of wetland habitats outside statutory sites and prevent losses of habitats
2	Aid in the creation of new floodplain wetland habitats within the drainage district

4.2.2.2 *IDB Actions*

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 WLMPs.	Exception reporting	ongoing	IDB	EA, NE, landowners, site managers
1	**1b**	Continue to work with Kent Wildlife Trust at Hothfield Common and Ham Fen, Natural England at Hacklinge and RSPB at Lydden Valley.	Timely response to issues raised	ongoing	IDB	KWT, NE, RSPB
1	**1c**	Work in partnership to review water level management of IDB watercourses affecting LWSs.	Timely response to issues raised	ongoing	IDB	KSCP, KWT, landowners

1	**1d**	Explore methods to reduce spreading of nutrient-rich silt from management operations over relict fen to improve plant diversity in protected sites e.g. N/S Streams	Investigation carried out into alternative approaches	2026	IDB Ecologist	IDB, NE

4.2.2.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Work in partnership towards optimal management of balancing ponds (e.g. SUDS, Highways Agency) and other water bodies that drain into IDB watercourses, addressing any water quality issues.	Timely response to issues raised	As they arise	LA	IDB, Highways Agency, LOs, developers, EA
2	**2a**	Explore opportunities with landowners to relax controls on winter flooding in a few selected channels	Timely response to issues raised	As they arise	Landowner/ managers	IDB Ecologist, EA, IDB
2	**2b**	Where partner organisations/landowners propose creation of new floodplain wetland habitats, work with them to design schemes that will enhance flood risk management and biodiversity.	No. of schemes participated in	As they arise	EA	IDB, RSPB, KSCP, KWT, NE, LOs
2	**2c**	Provide advice on how to manage floodplain wetlands and promote agri-environment schemes to create new wetland in the drainage district where appropriate (e.g. arable reversion to grazing marsh).	No. of landowners advised	As they arise	KSCP	KWT, NE, LOs, IDB
2	**2e**	In areas suitable for Great Crested Newts (mostly Upper Stour), inform landowners about District Level Licensing scheme for pond creation and refer to relevant KSCP officer	No. of referrals	ongoing	IDB Ecologist	KSCP, LOs, IDB

4.3. Species Action Plans

4.3.1 Vascular Plants

This plan encompasses a number of priority plant species occurring in the drainage district. Some have been prioritised because they were UKBAP species, others for their national or regional scarcity. The decision was taken to produce a group plan for these species rather than a series of individual plans because the key objectives – maintaining existing populations and promoting increased population size and range – were common to all. Actions in the plan will facilitate measures to benefit individual species, primarily through including priority species' requirements into management prescriptions for individual channels; distribution maps show where priority species occur. The plan will also benefit vascular plants more widely by targeting channels with high floristic diversity.

Prioritised species are listed below:

- **Dittander (*Lepidium latifolium*)**
- **Divided sedge (*Carex divisa*)**
- **Fen pondweed (*Potamogetan coloratus*)**
- **Hairlike pondweed (*Potamogetan trichoides*)**
- **Least bur-reed (*Sparganium minimum*)**
- **Rootless duckweed (*Wolffia arrhizal*)**
- **Sharp-leaved pondweed (*Potamogetan acutifolius*)**
- **Tubular water-dropwort (*Oenanthe fistulosa*)**
- **Whorled water-milfoil (*Myriophyllum verticillatum*)**

Many of the management prescriptions introduced since the first BAP (2010) – alternating bank cuts, partial weed cuts and desilting - will have improved conditions for these species.

4.3.1.1 *Objectives*

IDB Objectives	
1	Maintain, and increase where possible, known populations of priority species in IDB channels and plant diversity in ditches of high floristic interest

Partner Objectives	
1	Survey IDB watercourses with high floral interest

4.3.1.2 *IDB Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Prioritise resurveying of ditches of high floristic value and those containing priority species	No. of channels resurveyed with high floristic value/priority spp	annual	IDB Ecologist	IDB
1	**1b**	If resurveys indicate deteriorating plant diversity, modify management prescriptions and resurvey	No. of channels where falling plant diversity addressed	annual	IDB Ecologist	IDB
1	**1c**	Survey channels with high floristic interest or priority spp prior to desilt to identify ways of achieving no net loss	No. of surveys of these channels completed	annual	IDB Ecologist	IDB
1	**1d**	Identify suitable channels which have potential to develop high floristic interest (most likely to adjoin channels of existing HFI)	No. of watercourses identified	ongoing	IDB Ecologist	IDB
1	**1e**	Where priority plants occur, employ techniques (see 7. Implementation) to extend their range and population	Extent of priority species	ongoing	IDB Ecologist	IDB

1	**1f**	Include discussion of priority species and HFI channels in engagement with landowners	No of LO engagements	annual	IDB Ecologist	Landowner

4.3.1.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Assist County Recorder or other amateur specialist to survey IDB channels of high floristic interest	No. of channels surveyed	ongoing	County Recorder	IDB Ecologist, IDB

4.3.2 Shining Ramshorn Snail

The shining ramshorn snail (Segmetina nitida) is a planorbid water snail that usually inhabits densely vegetated ditches with unpolluted, usually calcareous water, occurring most abundantly in areas of rough grazing marsh, with a preference for channels in an advanced seral stage. As such, it is not thought to be ideally suited to IDB watercourses, but has been shown to occur in them, so far in low numbers.

It is expected that measures in this plan will also benefit the freshwater pea mussel Pisidium pseudosphaerium which prefers well-vegetated ditches but also occurs in IDB watercourses. This red data book species occurs on the Ash Levels and at Stodmarsh. More generally, actions such as retaining in-channel vegetation will benefit a range of molluscs and other invertebrates.

This species is local and declining in the UK, having undergone a major decline during the 20th century due to unfavourable ditch management, changes in agriculture (particularly the move away from traditional grazing to intensive arable), lowering of water tables and nutrient enrichment. Having once been a much more widespread species it now occurs in only a handful of areas of Britain – the Norfolk Broads, the Pevensey Levels, the Lewes Levels, the Somerset Levels, Hornsea Mere and the Lower Stour Marshes.

A 1996 survey of marshlands in East Anglia and south-east England (Killeen and Willing 1997) confirmed that this species was still present in Kent on the Lower Stour. A detailed survey of the Lower Stour in 1999 (Killeen 2000) showed that it was still living over a wide area of the marshes, being recorded in almost half of ditches sampled. This survey highlighted the Lower Stour population as being nationally important. A comparison of the two surveys indicates little change in the population of ditches surveyed in both years, suggesting that the population was stable. A 2005 survey showed that a decline had occurred in the Ash Levels, Stodmarsh and Westmarsh populations, with the Preston Valley population being the strongest. The most recent survey was carried out by Kent Wildlife Trust in 2012, covering Main Rivers, IDB channels and a selection of OWCs in the Lower Stour Marshes. The results showed a decrease in the number of channels where this species was present. They were found to be absent from several IDB channels where they had previously been present.

Genetic analysis has revealed 2 genetic strains, the UK strain occurring only here and in W Sweden. The UK population has therefore become a greater conservation priority.

Some of the management prescriptions introduced since the first BAP (2010) – particularly partial weed cuts and desilting - will have increased available habitat for this species.

4.3.2.1 *Objectives*

IDB Objectives	
1	Maintain and, where possible, expand suitable habitat for this species

Partner Objectives	
1	Determine current extent of population across the drainage district
2	Expand suitable habitat across Lower Stour marshes

4.3.2.2 *IDB Actions*

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	**1a**	Ensure retention of marginal vegetation following regular maintenance operations on IDB channels where species is or has been present historically	No. of negative reports following visits by Ecologist	ongoing	IDB, contractor	IDB Ecologist
1	**1b**	Survey for species pre- capital works in areas where species occurs and retain habitat, translocate or mitigate for lost habitat	Suitable actions taken to minimize effects on populations	As required	IDB	IDB Ecologist
1	**1c**	If recolonization of previously occupied IDB watercourses is not progressing (see Partner Action 2a), identify negative factors and possible solutions – channel management and surrounding land use	Negative factors identified	2030	IDB Ecologist	LOs, IDB

4.3.2.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
2	**2a**	Repeat water snail survey to determine effects of changes to IDB channel management on extent and population over last 10 years. Consider different approaches e.g. single channel surveys, citizen science	Completion of survey	2028	KSCP	IDB, KWT, local naturalist groups, RSPB, IDB Ecologist
2	**2b**	Engage with landowners about suitable management of OWCs and promote agri-environment schemes to reduce nutrient run-off and increase in grazing marsh area – in one-to-one communication following BAP surveys and through presentations.	No of LOs engaged	ongoing	KSCP	LOs, IDB Ecologist, IDB

4.3.3 White-Clawed Crayfish

The white-clawed crayfish is the only species of crayfish native to Britain. It lives in streams, rivers, lakes, and other water bodies, usually with alkaline, well-oxygenated water. It prefers water courses with little sediment as it requires stones, boulders, submerged tree roots and plants on the stream bed as shelter. It is very sensitive to the introduction of sediment and pollutants, and to low Dissolved Oxygen (DO) levels.

National and international legal frameworks for white clawed crayfish protection include:

- Wildlife and Countryside Act (1981) Schedule 5
- Countryside and Rights of Way Act (2001)
- IUCN Red Data List for Endangered and Threatened Species, category 'Globally Threatened'

This species had a wide distribution before the 1970s. Since then, it has declined but is still abundant in central and northern England, and it is estimated the UK holds about a quarter of the world population. In the south of England, its distribution has become patchy, with many populations being lost to factors such as drought, habitat change and poor water quality. Perhaps the most significant cause of this decline, however, is the spread of the American signal crayfish, which can eliminate native crayfish from whole areas through direct competition, predation and by spreading crayfish plague. Crayfish plague is a virulent fungal infection which the signal crayfish carries but does not suffer ill effects from. The plague can also be spread by water, fish, flood management machinery and other equipment.

In Kent, the white-clawed crayfish has been recorded from the Stour, Medway and Darent catchments but has suffered serious decline and is now mainly restricted to headwaters. The Upper Stour retains fragmented breeding populations. The species has disappeared from lower sections of the main river with new records and evidence of American Signal Crayfish in the Great Stour below Canterbury. Additional isolated populations remain in sensitive locations along independent waterbodies near the North Downs. (e.g. Seabrook Stream).

KSCP survey data (2020) identified surviving populations in stretches of the Great Stour above Buxford Stream. White Clawed Crayfish occur on only one IDB watercourse, IDB7 Pig Brook, and a section of Main River managed by the IDB at Rippers Cross. The management of these two locations will be crucial to the survival of this species in the Stour catchment. Populations at Shalmsford Street and Buxford Stream are thought to have been lost.

KSCP have developed a WCC Strategy for East Kent and have formed a working group, The East Kent White Clawed Crayfish Group (EKWCCG); partners include IDB, EA, NE and Wildwood Trust. Species conservation work undertaken by KSCP and partners will involve catchment-scale monitoring, watercourse management, advice to landowners, captive breeding and release, and identification of ARK sites on several watercourses suitable for WCC, including some managed by the IDB.

4.3.3.1 *Objectives*

IDB Objectives	
1	Prevent further losses of populations on IDB-managed watercourses
2	Maintain suitable habitat on IDB watercourses where populations were historically present

Partner Objectives	
1	Monitor populations in the drainage district
2	Increase number of IDB-managed channels with populations
3	Maintain and, where possible, increase size and extent of populations across IDB district

4.3.3.2 *IDB Actions*

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	**1a**	Ensure that regular management operations at IDB7 Pig's Brook and Rippers Cross (Great Stour) do not cause deterioration in habitat quality through adherence to bio-security measures and minimizing habitat disturbance	Prominent instructions added to Management Sheets No. of negative reports by KSCP and IDB Ecologist following annual site visits.	ongoing	IDB, contractor	KSCP, Ecological consultant

1	**1b**	Avoid one-off works that might impact upon remaining populations (e.g. artificial bank stabilisation, removal of trees with roots in channel)	Evidence that measures have been taken to minimize impact of any planned works	As required	IDB	Contractors, EA, KSCP
2	**2a**	Carry out enhancement projects on IDB channels where WCC are currently or have recently been present to maintain flows, improve silt scouring and water quality (particularly DO).	No. of projects completed	2030	IDB Ecologist	IDB, KSCP

4.3.3.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Survey a selection of watercourses across the district, including IDB, Main River and OWCs	Completion of surveys and results made available to IDB	2025	KSCP	IDB, EA, Landowners
2	**2a**	Consider habitat suitability for ARK sites on headwaters of IDB watercourses	No. of potential Ark sites identified	ongoing	KSCP	EA, IDB, IDB Ecologist
3	**3a**	Consult on any construction projects or other operations that could produce silt; seek to reduce sedimentation/runoff from arable land, tracks and roads.	No. of consultations	As required	LAs	Landowners, Kent Highways.
3	**3b**	Ensure any oil or chemical spills do not reach sites of WCC populations	KSCP to record evidence if pollution incidents affect sites	ongoing	EA	KSCP
3	**3c**	Monitor Main Rivers for American signal crayfish to ensure their presence is detected early; undertake control measures as necessary.	Data made available to IDB	ongoing	EA	KSCP

4.3.4 Dragonflies and Damselflies

This plan encompasses three priority species: hairy dragonfly, variable damselfly and scarce chaser. They were prioritised in the first BAP (2010-2020) because they were listed in the KRDB and because of their strong association with drainage channels. The Kent records for two of these species are restricted to the Lower Stour. Since 2010, two more species - norfolk hawker and scarce emerald damselfly – have become significant for conservation in Kent and may become Priority Species depending on the outcome of further surveying of IDB channels and trends in population and range throughout the county.

The decision was taken to produce a grouped plan for this group of species rather than a series of individual plans because they have similar habitat requirements, so a range of actions leading to adjustments in vegetation management will benefit all prioritised species. These actions will also benefit many other insects – for example, species of moth, butterfly and bee.

A presence/absence survey was carried out of IDB channels by Will Hirstle (2012-2016). A total of 17 species were recorded on the 16 channels surveyed. Variable damselfly was found to be present in 5 out of 10 channels surveyed within tetrads where it had previously been recorded, but distribution was patchy. Due to its scarcity, only 2 watercourses could be surveyed in areas where scarce chasers are known to be present and this species was present on one (IDB277). Hairy dragonfly was found to be present on 5 out of 7 channels which were surveyed in areas where it would be expected to be present, according to habitat requirements, previous records and optimum flight time.

Many of the management prescriptions introduced since the first BAP (2010) – alternating bank cuts, partial weed cuts and desilting - will have increased available habitat for this group of species.

4.3.4.1 *Objectives*

IDB Objectives	
1	Maintain and, where possible, increase suitable habitat for Priority Species and Odonata generally across IDB network

Partner Objectives	
1	Determine current distribution of Priority Species in IDB watercourses
2	Increase population of Odonata across IDB district

4.3.4.2 *IDB Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Use new information on habitat requirements for priority species to update management prescriptions for watercourses where those species are present, plus other nearby suitable channels	Review of management prescriptions completed for relevant channels	2025	IDB Ecologist	IDB
1	**1b**	Use data to update list of Priority Species	Subsequent BAPs updated	2030	IDB Ecologist	IDB
1	**1c**	Seek opportunities to apply further measures through regular management and one-off projects to make general habitat improvements for this group e.g. berm creation on narrow channels, tree planting	No. of channels enhanced through appropriate measures	ongoing	IDB Ecologist	IDB, Landowners

4.3.4.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Repeat survey of a selection of IDB watercourses	Results of survey made available to IDB	2030	KSCP	Clarity, Kent Field Club, County Recorder, IDB Ecologist, IDB
2	**2a**	Engage with landowners about suitable management of OWCs and promote agri-environment schemes to benefit this group of species.	No. of landowners engaged	ongoing	KSCP	IDB Ecologist, Landowners

4.3.5 Fish

This plan aims to bring about biodiversity improvements for fish as a species group in IDB watercourses and does not focus on any individual prioritised species, although certain notable species do occur in the drainage district. The European eel is arguably the most important species identified by the biodiversity audit – it has suffered rapid population decline and is protected under Eels (England and Wales) Regulations 2009. The EA advise that eels are widespread in the Stour catchment and will be present in some IDB watercourses. They are noted as having a strong association with drainage channels, due to their preference for slow flows and silty conditions with abundant weed. Brook lamprey is a KRDB species that is present in small numbers in the headwaters of the catchment and may inhabit some near-natural IDB watercourses. Atlantic salmon is another KRDB species found in the Great Stour. Other notable species include bream, roach and brown trout, but these are restricted to channels with greater natural character.

It may become necessary to define the European Eel as a Priority Species in the future.

Actions taken under other SAPS and HAPS will benefit this species group e.g. 4.2.1 Drainage Ditches and 4.3.3 White Clawed Crayfish

4.3.5.1 *Objectives*

IDB Objectives	
1	Maintain and, where possible, increase suitable habitat to support fish and eel populations
2	Reduce barriers to fish passage

Partner Objectives	
1	Achieve sustainable management of fishing stocks across the drainage district

4.3.5.2 *IDB Actions*

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	**1a**	On near-natural watercourses, retain features such as meanders, pools and riffles.	Comparison of baseline and resurvey data	ongoing	IDB	Contractor, IDB Ecologist
1	**1b**	Maintain flows sufficient to sustain populations wherever possible; on near-natural watercourses, allow natural flow regimes (but avoid very low flows); maintain water quality (especially Dissolved Oxygen)	DO measurements by contractors during routine operations, water quality measurements during watercourse surveys, LO engagement on practices affecting water quality	ongoing	IDB	IDB Ecologist, contractor
1	**1c**	Carry out de-silting operations in a way that is sensitive to fish populations - scalloped desilt where channel vegetation naturally forms meanders	No. of watercourses where a scalloped desilt is carried out	ongoing	contractor	IDB Ecologist, IDB

1	**1d**	On modified reaches of near-natural watercourses, carry out river restoration to restore natural geomorphological features and improve silt scouring – align with WCC actions 5.3.3.2	No. of projects completed	ongoing	IDB Ecologist	IDB, Contractor, EA
2	**2a**	Ensure fish passes are cleared of debris when necessary.	No. of fish passes cleared	As required	IDB	contractor
2	**2b**	Ensure that where control structures are renewed fish passes are included that will allow passage even at lowest flows.	No of fish passes installed	As required	IDB	IDB Ecologist, EA
2	**2g**	Work with landowners to remove and re-install incorrectly set culverts which are preventing fish passage.	No. of culverts replaced/reset	2030	IDB	IDB Ecologist

4.3.5.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Consult with EA, angling clubs and other relevant parties regarding the management of fisheries.	No. of consultations	ongoing	EA	IDB, Angling Clubs, NGOs
1	**1b**	Carry out survey of eels in district as part of wider monitoring program	Completion of survey	2030	EA	KSCP, other volunteer groups

4.3.6 Amphibians

The common toad is likely to be the amphibian best adapted to inhabiting drainage channels. It breeds in a variety of water bodies such as ponds, lakes, gravel pits and ditches, with a preference for deeper water bodies (usually over 40cm). Unlike other amphibians, it can co-exist with fish, since its tadpoles are unpalatable. It is quite well suited to IDB watercourses with their more open, frequently maintained character. Like other amphibians, toads also require good quality terrestrial habitats for shelter, feeding and hibernation, including rough grassland, scrub, and piles of logs or stones - they have a particular preference for woodland and can often be found some distance from water. Toads benefit from a high degree of landscape connectivity in order to migrate successfully back to their breeding ponds in early spring.

In addition to the common toad, actions in this plan will also benefit common frogs, and smooth, palmate and great-crested newts. The latter is an international priority for conservation and is protected under national legislation but is not thought to be sufficiently well-suited to IDB watercourses to warrant a separate SAP.

Common Toad and Great Crested Newt are listed under Schedule 5 of the Wildlife and Countryside Act.

Many of the management prescriptions introduced since the first BAP (2010) – alternating bank cuts, partial weed cuts and desilting, pools at junctions - will have increased available habitat for amphibians.

4.3.6.1 *Objectives*

IDB Objectives	
1	Maintain and, where possible, increase suitable habitat for amphibians

Partner Objectives	
1	Maintain and expand size and extent of populations across drainage district

4.3.6.2 *IDB Actions*

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	1a	Ensure, where possible, water levels are sufficient to sustain populations, especially in areas where toads are known to be present	Identify key watercourses	ongoing	Ecological consultant	IDB, landowners
1	1b	Consider reducing regularity of vegetation control for channels in areas important for this species, as part of general reduction of cutting regularity following demaining. See 5.2.1.2.	Plan completed for reduction in vegetation control	ongoing	IDB	IDB Ecologist
1	1c	Review individual channel management prescriptions in light of survey data e.g. leaving patches of vegetation uncut, planting trees where they are lacking (see 7. Implementation for full list of prescriptions)	Requires completion of survey – see Partner Action below	2030	IDB Ecologist	IDB, Landowners

1	1d	Create hibernacula close to channels with favourable amphibian habitat, utilising spare materials e.g. logs from tree work, rocks from gabions.	Number of hibernacula created annually.	ongoing	IDB	Contractor, IDB Ecologist, Landowners

4.3.6.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	1a	Obtain recent data from KRAG and Froglife (Toad Patrols) on status, trends and important locations within district	Data obtained	2026	KSCP	KRAG, Pondlife, IDB Ecologist
1	1b	Carry out amphibian surveys on a selection of IDB channels, focusing on the Lower Stour, where the Common Toad has historically been present, and channels with suitable surrounding habitat and connectivity	Identify potential funding and/or partner organisations	ongoing	KSCP	KRAG, IDB Ecologist
1	1c	Engage with landowners about importance of habitat connectivity, management of OWCs and hedgerows	No. of landowners engaged	ongoing	KSCP	IDB Ecologist, IDB

Actions under 5.2.1 to maintain and increase hedgerow and woodland are relevant here.

4.3.7 Reed-nesting Birds

The reed bunting is a bird that inhabits dense vegetation, often in association with water, but also other habitats such as young forestry plantations. Recently they have become more associated with farmland, particularly farmland with ditches, where they require good marginal and bankside vegetation for feeding and nesting. IDB watercourses, with their permanent marginal vegetation are quite well-suited as habitat; in the drainage district they will also inhabit hedgerows, reedbeds, vegetation surrounding water bodies and wet scrubby areas.

The actions in this plan will also benefit the reed warbler, a bird that is very characteristic of the Lower Stour Marshes, where it is thought a nationally important population exists. It breeds readily in reeds at ditch margins. Other bird species that can nest in or near ditches, which may benefit from this plan, include water rail, pochard, shoveler, garganey, gadwall, sedge warbler and marsh harrier, but these birds usually prefer reed-filled ditches at a later successional stage than IDB watercourses; survey data will inform the way forward on these species. Changes to bankside vegetation management will also benefit skylark and barn owl, a declining species characteristic of the Lower Stour Marshes. The plan may also benefit bearded tit, although this species requires large reedbeds for breeding.

Many of the management prescriptions introduced since the first BAP (2010) – alternating bank cuts, partial weed cuts and desilting - will have increased available habitat for this group of species.

4.3.7.1 *Objectives*

IDB Objectives	
1	Maintain and, where possible, increase extent of suitable habitat for reed-nesting birds in IDB watercourses

Partner Objectives	
1	Maintain size and extent of population across whole district

4.3.7.2 *IDB Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Identify a set of channels where most benefit for nesting birds could be gained through manageable delays in annual vegetation cutting programme	List of channels created	2030	IDB Ecologist	IDB
1	**1b**	Review watercourse survey data to find areas where emergent vegetation is not improving despite management prescriptions, in areas likely to support reed-nesting birds	Survey data reviewed	2030	IDB Ecologist	IDB

4.3.7.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Raise landowner awareness of reed buntings and other important species in relevant locations, and provide guidance on measures to maintain and improve habitat: OWC management, agri-environment schemes, hedgerow management	No. of landowners engaged	ongoing	KSCP	IDB staff, IDB Ecologist, Landowners

Actions under 5.2.1 to maintain and increase hedgerow, woodland and individual trees will benefit Reed Buntings

4.3.8 Water Vole

Water voles typically inhabit well-vegetated banks of rivers, streams and ditches, but can also be found in ponds, lakes, gravel pits and canals. They are most numerous in mid-successional channels, with abundant in-channel vegetation and vigorous bank cover, but they do well in IDB watercourses: a 2005 survey found that 92% of IDB channels surveyed in the Lower Stour area had water vole populations - an exceptionally high frequency.

The water vole has undergone one of the most dramatic declines of any British mammal and is the fastest declining mammal in Europe. A national survey in 1989-1990 found water vole to be absent from 67% of formerly inhabited sites. Destruction of suitable bank-side habitat through insensitive river engineering, agricultural intensification, vegetation control, heavy grazing and urbanization of floodplains have reduced water vole habitat and fragmented populations. Predation from the American mink is also considered to have played a major role in the decline of this species. Although water vole populations are declining in Kent, the county is thought to be a stronghold for the species.

A 2005 survey by Bramley Associates concluded that the water vole population in the Lower Stour is of national importance, and the marshes are probably one of the best areas for this species in the whole country. The species is widely distributed in the Lower Stour – 85% of all ditches surveyed were occupied by water voles – but with poorer numbers in some areas, namely parts of Minster Marshes and around Reculver. IDB channels were found to have a higher population density than Main Rivers, probably due to differences in routine maintenance. Earlier survey work by Sutherland (1999) indicated the presence of water vole colonies in the middle and upper reaches of the drainage district, although this survey concentrated on Main Rivers. A 2009 survey by KSCP looked at a selection of IDB channels surveyed in the 2005 survey and concluded that IDB sites had marginally higher densities of water voles than Main River or Ordinary Watercourses and that water vole signs had increased slightly since the 2005 survey.

This species is protected under Schedule 5 of the Wildlife and Countryside Act (1981)

Some actions in this plan – those affecting bankside vegetation – will also benefit the harvest mouse, a declining species for which marshland ditches have become an important habitat.

Many of the management prescriptions introduced since the first BAP (2010), especially alternating bank cuts, and leaving a vegetated fringe at water level, will have increased available habitat for this species considerably.

4.3.8.1 *Objectives*

IDB Objectives	
1	Maintain and, where possible, increase water vole habitat quality and extent in IDB watercourses

Partner Objectives	
1	Better understand factors affecting population and extent
2	Increase water vole population size and extent across whole drainage district

4.3.8.2 *IDB Actions*

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	1a	Where channel banks are being severely damaged by poaching, liaise with landowners and partner organisations regarding fencing. N.B. banks with divided sedge should not be fenced as this species requires grazing.	No. of heavily poached areas identified and fenced off	ongoing	IDB	IDB Ecologist, EA, NE, LO

1	**1b**	Use survey data to review management of watercourses where water voles are consistently less prevalent or absent and ensure management is not a factor in their absence– lack of emergent vegetation, close-cut banks, excessive poaching etc. BUT with consideration for competing conservation priorities	List created of channels where habitat can be improved	2030	IDB Ecologist	IDB, landowners, contractor
1	**1c**	Investigate feasibility and benefits of maintaining more stable water levels in locations which are important for water voles	Recommendations made	2030	IDB Ecologist	IDB, Landowners
1	**1d**	Maintain water in side-channels for longer periods e.g. where position of culverts will trap water	No. of watercourses identified where this is possible and will be beneficial for water vole	2030	IDB Ecologist	IDB, Landowners
1	**1e**	Where watercourse surveys find bank top burrows, recommend keeping machinery back from bank edges wherever it is practical to do so i.e. where banks height and gradient are low	Notes added to Watercourse Management Sheets	Ongoing	IDB Ecologist	IDB, Contractor

4.3.8.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Continue to monitor mink; expand existing programme if possible, with support from landowners	No. of rafts	ongoing	WLRSE	IDB, EA, landowners
1	**1b**	Repeat species survey – size of survey to be determined by available funding	Data made available to IDB	2030	KSCP	Bramley Associates, EA

2	**2a**	Liaise with landowners in key areas and provide guidance on measures to maintain and improve habitat, especially OWC management and arable margin options in agri-environmental schemes	No. of landowners engaged	ongoing	KSCP	IDB Ecologist, IDB, Landowners

4.3.9 Otter

The European Otter is a semi-aquatic apex predator which feeds mostly on fish, but also predates water birds, amphibians and crustaceans. As such, its main requirement is a plentiful food supply, which in turn implies high water quality. Other habitat requirements have been difficult to establish: vegetated riverbanks, reedbeds and riparian woodland seem to be important for foraging and breeding. There used to be a belief that riparian woodland was a vital habitat element and that most resting places and natal dens were excavated among bankside tree roots, but more recent research has brought this into question. It is now believed that any cover, be it vegetative or man-made, above or below ground, can be used, and there is no preference shown for underground holts. Otters have also been found to be very tolerant of human disturbance. They have been recorded using every type of watercourse, from large river to small drainage channel.

Nationwide, otter numbers fell sharply through the 1960s and 70s. This was due to pollution of water bodies, especially pesticides which bioaccumulate in the tissue of top predators. Habitat loss or fragmentation, hunting and road deaths are also thought to be contributing factors. Historically, the European otter occurred across the whole country, but they are now most abundant in Scotland, with the West of Wales and South West of England also having significant populations. Although still scarce in England, numbers are slowly recovering and they are recolonizing areas from which they have been absent for decades, steadily moving South and East from their strongholds.

Otter signs have increased significantly in the Stour Catchment over the last 10 years. Records have increased especially rapidly over the last 2 years, with multiple records in the Lower Stour and Canterbury areas, but this could be due to growing awareness among the public, rather than a growing population. Measured population densities elsewhere in the UK and the limited area of suitable habitat in the catchment imply that the maximum population size for the district would still be small.

Otters are protected by the Wildlife and Countryside Act (1981) and cannot be killed, kept or sold, except under licence.

Due to the very varied use of many habitats, making management prescriptions is problematic. Most of the requirements are covered in other Species and Habitat Action Plans. The inclusion of an Action Plan for this species, therefore, is to highlight its importance for conservation and its role as an indicator of wider ecological health of the network of watercourses in the district.

4.3.9.1 *Objectives*

IDB Objectives	
1	Help to monitor the distribution of otters across the IDB district and their use of IDB channels
2	Maintain suitable habitat for otters

Partner Objectives	
1	Maintain habitat connectivity across the drainage district

4.3.9.2 *IDB Actions*

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	**1a**	Include brief guide to otter signs in IDB staff briefings – see Operational Action Plan	Otter sign guide delivered in suitable format	2025	IDB Ecologist	IDB staff
1	**1b**	Record otter signs and share with relevant bodies	Records included in annual submissions	annual	IDB Ecologist	IDB Staff, KMBRC, KMG, EKBWG
2	**2a**	Maintain habitat features used by otters which are directly affected by IDB operations – bankside trees, emergent vegetation, reedbed, wetland, dense scrub - see Ditches and Wetland Habitat Action Plans, 5.2.1 and 5.2.2	Maintenance of these features as recorded in watercourse surveys	ongoing	IDB	IDB Ecologist, contractor

4.3.9.3 *Partner Actions*

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
3	**3a**	Engage with landowners about the spread of otters in the catchment and the importance of habitat connectivity – hedgerows, woodland, wetland	Number of landowners engaged	ongoing	KSCP	Landowners, IDB, IDB Ecologist

4.3.10 Eurasian Beaver

The Eurasian Beaver, *Castor fiber*, was driven to extinction throughout the UK, by the 1500s. Populations of beaver have now been reintroduced across areas of Scotland, England and Wales with Kent having a healthy population, predominantly in the lower Stour catchment. Eurasian beavers are a European Protected Species (EPS) protected under the Conservation of Habitats and Species Regulations 2017 and Wildlife and Countryside Act 1981. Specific protection was given in October 2022 in England - Beavers are now listed in Schedule 2 of the Conservation of Habitats and Species Regulations 2017, making it an offence to deliberately capture, injure, kill or disturb beavers, or damage and destroy their breeding sites or resting places without a wildlife management licence from Natural England. A management framework has been introduced for landowners or managers to follow to obtain a licence to resolve conflicts with beavers.

Beavers live in freshwater habitats, like rivers and streams, and prefer areas surrounded by wetland plants, trees and woodland. They are present on a number of RSIDB watercourses. Slow on land, they are excellent swimmers, so feel safest when close to deep water (around 70cm deep). If the water isn't deep enough for them, beavers can make it deeper by using mud, wood, and stones to build dams across shallow rivers, streams and ditches. The dams are leaky and let some water through but slow down the flow enough for ponds to form, where the beavers can live and feel secure.

Beavers often shelter in burrows dug into a watercourse bank, with an underwater entrance tunnel. Some of these can be enlarged into bank lodges. If the bank isn't suitable for a burrow, they can build a lodge from woody debris, twigs and soil. The lodge could be on a riverbank, or out in the middle of a beaver-built pond. A lodge offers a safe place to eat, sleep and raise young. Beavers are herbivores, feeding entirely on plants. In summer, they prefer pond weeds, grasses, leaves and other parts of plants. In winter they eat the bark of trees, favoring willow, poplars and alder.

Beavers are known as a keystone species – a species that plays a critical role in creating thriving ecosystems. The habitats they create help other wildlife, including water beetles, birds, bats, frogs, and fish. Their dams can also prevent flooding further down the river, keep water flowing during droughts and filter the water passing through them.

The population has continued to grow across the Lower Stour Marshes and spread upstream along the Stour Valley, reaching Canterbury. Further spread has been halted for now by water level control structures and an inhospitable urban environment, although further releases have been made upstream of Canterbury, so populations are expected to increase throughout the whole catchment. IDB staff are developing methods to help prevent, or mitigate for, damage to water level control structures and other beaver-related issues. The IDB is also a member of the East Kent Beaver Advisory Group which was formed in-part to help manage some of the negative impacts of beaver activity.

4.3.10.1 Objectives

IDB Objectives	
1	Help to monitor the distribution of beavers across the IDB district and their use of IDB channels
2	Maintain a functioning drainage system whilst maintaining beaver habitat

Partner Objectives	
1	Protect Beaver and their habitats

4.3.10.2 IDB Actions

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Include brief guide to beaver signs in IDB staff briefings	Beaver sign guide delivered in suitable format	2026	IDB Ecologist	IDB staff
1	**1b**	Record beaver signs and share with relevant bodies	Records included in annual submissions	annual	IDB Ecologist	IDB Staff, KMBRC, EKBAG
2	**2a**	Maintain habitat features used by beavers which are directly affected by IDB operations – bankside trees, emergent vegetation, reedbed, wetland,	Maintenance of these features as recorded in watercourse surveys	ongoing	IDB	IDB Ecologist, contractor
2	**2b**	Work with EKBAG to mitigate impacts of beaver on	Functioning drainage system without impacting	ongoing	IDB	EKBAG IDB Ecologist IDB Staff Contractors

		drainage channels	negatively on beaver, or landowners, or wider ecology			

4.3.10.3 Partner Actions

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
3	**3a**	Engage with landowners about the spread of beaver in the catchment and their importance as an ecosystem engineer	Number of landowners engaged	ongoing	KSCP	Landowners, IDB, IDB Ecologist EKBAG

4.3.11 Water Fern (Azolla)

Azolla is native to the Americas. It was first recorded in the UK in the late 19th Century and is now widespread throughout lowland England. It favours slow-flowing eutrophic waterbodies such as lakes, river margins, ditches, canals and ponds, but can tolerate nutrient-poor conditions. Vectors of dispersal are not confirmed, but machinery, boats and wildfowl are thought to be important. In the UK, Azolla reproduces vegetatively from small fragments and by producing spores.

The main negative impacts of Azolla on native aquatic biodiversity are due to the thick floating blankets it tends to form. These blankets prevent the growth of submerged plants and can reduce oxygenation.

Azolla is widespread in the drainage district, especially in the Lower Stour marshes. Biocontrol using the weevil *Stenopelmus rufinasus* has been employed successfully at a site in the Hacklinge Marsh area.

This species is listed in Schedule 9 of the Wildlife and Countryside Act (1981), making it an offence to release it into the wild.

Some of the actions below will help to prevent the spread of other non-native plant species, such as Parrot's Feather, and pathogens such as Crayfish Plague.

4.3.11.1IDB Objectives

IDB Objectives	
1	Prevent further spread of Azolla across IDB watercourse network

Partner Objectives	
1	Limit impact of Azolla on IDB watercourse network.

4.3.10.1.1 IDB Actions

Action Plan						
Objective ref.	Action number	Action	Measurable / Indicators	Completion date	Action Lead	Partners
1	**1a**	Continue to ensure biosecurity policy is adhered to, especially with respect to known vectors of spread	Promote during contractor induction and monitor during site visits to routine operations	ongoing	IDB	IDB Ecologist, contractors and consultants
1	**1b**	Review biosecurity policy with respect to changes in guidance, legislation and working practices, and to new species of concern	Review completed	2026	IDB	IDB Ecologist
1	**1c**	Map Azolla presence on IDB watercourses across Hacklinge Marshes	Mapping completed	2026	IDB	IDB Ecologist
1	**1d**	Make map available to contractors to highlight channels where greater care is required during routine operations	Map shared with contractors	2026	IDB	IDB Ecologist

4.3.11.1.2Partner Actions

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Trial use of biocontrol on an IDB watercourse to demonstrate effectiveness	Completion of trial	2025	KSCP	CABI, IDB, IDB Ecologist
1	**1b**	Engage with landowners and managers in Hacklinge Marshes area.	Number of people engaged	2025	KSCP	IDB, CABI, EA, NE, landoners, RSPB, KWT, IDB Ecologist
1	**1c**	Identify source of funding	Funding secured to cover entire project	2025	KSCP	NE, EA, IDB
1	**1a**	Write up trial of results of bio control	Report	2025	KSCP	IDB EA
1	**1b**	Monitor azolla presence and base actions on report. Consider biocontrol augmentation if azolla presence becomes persistent at impactful quantities	Quantity of azolla Use of biocontrol	ongoing	KSCP	IDB EA

5. Procedural Action Plan

5.1. Introduction

Procedural targets and actions have been established to better integrate biodiversity considerations into IDB practices and procedures.

5.2. Objectives and Targets

Table 18:

IDB Objectives	
1	Improve biodiversity knowledge of IDB employees and contractors
2	Improve communication of the IDB's achievements under the BAP to partner organisations and the wider public
3	Improve record keeping of work carried out to fulfill the BAP for reporting purposes
4	Improve efficiency through use of technology for data recording, transfer and storage
5	Establish or maintain links to external initiatives which can impact on IDB channel health

5.3. IDB Actions

Action Plan						
Objective ref.	**Action number**	**Action**	**Measurable / Indicators**	**Completion date**	**Action Lead**	**Partners**
1	**1a**	Deliver presentation for staff to introduce the new BAP, focusing on actions to be delivered by staff themselves	Delivery of presentation	2021	IDB Ecologist	IDB
1	**1b**	Create lists of actions to be delivered by staff and contractors, and communicate to both by appropriate means	Produce list, deliver at staff meetings, contractor inductions etc.	List produced 2022	IDB Ecologist	IDB, contractors
1	**1c**	Meet with staff and contractors to cover biodiversity questions and complaints on an annual basis and provide information sheets on topics as required	An annual conversation with staff and contractors. Information sheets provided as required	2030	IDB Ecologist	IDB
2	**2a**	BAP available on IDB website	Updated BAP on website	2026	IDB	
2	**2b**	Promote work carried out under the BAP through social media, newsletters, face-to-face communication, etc	No. of social media posts, etc on biodiversity	ongoing	IDB	IDB Ecologist
2	**2c**	Contribute to external mapping of completed biodiversity projects and opportunity areas. BNG/NN works within /LNRS works will require adding to external mapping if they occur	Data supplied to KWT for Kent Landscape Conservation Tool	2021	IDB	IDB Ecologist
			Improved habitat along watercourses mapped onto external databases	ongoing		
3	**3a**	Decide on most appropriate means of capturing all work carried out against BAP actions, taking into consideration limited resources, staff time	Mechanism established and all new work recorded	2022	IDB	IDB Ecologist
			Continue to review	ongoing		
3	**3b**	Ensure all species survey data is obtained and filed in accessible manner	Obtain and file all applicable survey data, methods and other relevant information	Ongoing	KSCP	IDB, IDB Ecologist, Carol Donaldson, etc.

4	**4a**	Review how technology can be used to improve processes	Identification of technological solutions and their trial in the field	ongoing	IDB	IDB Ecologist
5	**5a**	Meet with local Catchment Sensitive Farming Officer when issues are identified	Meeting held	ongoing	IDB	

6. Summary of Priority Actions

1. Watercourses will be periodically resurveyed, at least every 10 years, to monitor the effects of management prescriptions and one-off projects to ensure management sheets are kept up to date.

2. Any new watercourses adopted by the IDB will be surveyed on adoption and new management sheets will be created.

3. The IDB will aim to deliver at least one enhancement project each year and also develop at least one project proposal for the following year. Prioritisation will be based on presence of priority species, priority habitats, management changes, invasive species presence, length of time from last survey, issues and location within the catchment.

4. In order to better assess the ecological conditions of watercourses and the effects of IDB activities, surveys of priority species will be undertaken.

5. Engagement with partner organisations, external projects and initiatives will be maintained and the IDB will continue to explore how projects can be carried out in collaboration with others.

6. The IDB will continue to engage with landowners on a range of issues, including the occurrence of priority species and land management practices which affect channel health.

7. Identify and record the locations of known INNS on IDB watercourses and develop site specific plans of action to ensure no spread by IDB activities (and eradication where feasible).

8. The effect of reduced maintenance is to be assessed, on watercourses currently on a biennial programme, both positive and negative impacts. Any additional watercourses identified for reduced management will be focused on the most benefit for priority species, or the least negative impact.

9. Plant diversity will be maintained and, where possible, improved. This will involve comparison of baseline and resurvey data to identify areas where plant diversity is significantly falling. Also, suitable methods will be identified and trialled to enable channels/areas of high diversity to spread to surrounding channels/areas.

10. The IDB aims at all times to avoid any tree damage or loss, but in the unlikely event that this occurs the IDB will plant two trees for every one tree lost. As a partnership action, new bankside trees will be planted where they are entirely lacking and will most benefit priority species, such as dragonflies and reed buntings, in agreement with landowners.

11. The IDB will assist KSCP in delivering the East Kent White-Clawed Crayfish Strategy.

12. The impacts of beaver activity, both positive and negative, will be monitored and the IDB will work with landowners and the East Kent Beaver Advisory Group to protect and enhance beaver habitat and help manage risks.

7. Implementation

7.1. Overview

The following sections give an overview of how the major areas of work in this plan can be implemented, subject to financial limitations, and highlights issues to be considered when developing site specific maintenance standards. References are made to The Drainage Channel Biodiversity Manual (ADA Manual) and to the specific management prescriptions it contains.

7.1.1 Land management (channel maintenance and enhancement, water level management etc.)

The implementation of the practical land management aspects of this plan will take place primarily through the IDB's maintenance programmes:

- Through the aquatic weed cutting programme, actions will be delivered to improve the condition of in-channel habitats and enhance habitats for priority species. Some improvements to marginal habitats will also be made.
- Through the grass cutting programme, actions will be delivered to improve the condition of bank habitats, where possible, and enhance habitats for priority species.
- Through the de-silting programme, actions will be delivered to make physical enhancements to channels, where possible and in liaison with landowners, to improve and create habitats for priority species.
- Through one-off projects with specific aims to enhance channels for priority species
- Through water level management, actions will be delivered to maintain, improve and possibly restore floodplain wetland habitats, where appropriate, and to create good conditions for species in IDB watercourses.

7.1.2 Survey and Monitoring

Ecological survey, assessment and monitoring could be delivered in the following ways:

- By maintenance contractors as part of, or extra to, routine maintenance works
- By IDB staff
- By partner organisations such as KSCP
- By consultants, local organisations, groups and specialists, and partner organisations

Decisions on who will conduct various survey and monitoring work in the plan will be made on a case-by-case basis, in the lead-up to the survey, based on available resources, on how specialist the task is, whether any training is needed and availability of specialists. Suggestions for each survey or monitoring task are included in the action plan tables, under 'Action Lead' and 'Partners'.

The creation of management prescription sheets has been a particularly key task, requiring an ongoing, close partnership between the IDB and a partner organisation or consultant. This process will continue through the writing of new sheets for demained channels and review of existing sheets following resurveys.

7.1.3 Policy, advisory, communications, publicity

Actions of this kind do not make up a large proportion of this plan as it is largely practical in nature, but there are a range of actions that IDB staff will need to consider, such as: investigating water level issues and will need to consult with the EA, local authorities and other bodies, in order to review WLMPs, develop new procedures and raise awareness.

7.1.4 Partnership actions

The IDB can assist with actions which partner organisations are leading on, but the IDB is not ultimately responsible for their completion. The Board has no direct control of these actions, which are subject to resource limitations and approval of the Partnership organisations themselves. It is hoped that the plan will be viewed as a document that other key organisations involved in the drainage district will look to for guidance on conserving biodiversity, and that this will result in more partnership working.

The IDB may choose to promote various partnership objectives and possibly initiate discussions with partner organisations on how they might be taken forward.

7.2. Land Management

N.B. It is essential to consult with KCC Heritage on management prescriptions, enhancements through routine maintenance and one-off enhancement projects for channels flagged up as coinciding with county heritage sites, as listed under 4.6.

7.2.1 Channel management guidelines

The sections below, describing how various aspects of routine maintenance can be modified to bring biodiversity benefits, have largely been applied already: individual watercourse management prescription sheets have been completed for the majority of the network. However, some recently adopted channels are yet to have completed management sheets, and it is useful to have a record of recommendations for general reference. Some have been modified or expanded in light of experience in their implementation or published literature on drainage channel management.

7.2.1.1 *Channel banks*

Cutting rotation

Channel bank vegetation cutting is usually carried out annually. Where access to a bank is difficult, or where grazing takes place, it may be cut less frequently. The primary reasons for regular cutting are flood conveyance, appropriate water level management and safe access to structures and channel for routine maintenance.

Following the production of management prescription sheets, the prescription to cut alternately (M5) has been widely made, becoming the standard bank cut prescription. However, this has mostly evolved into ‘cut same bank each year’ – the resulting scrub

development on the uncut bank may have benefits, such as helping to prevent spray drift in some cases, but at the cost of losing plant diversity. Access issues for equipment imply greater time/cost for implementing true alternating bank cuts, so work is needed to identify key channels requiring this prescription. Ongoing monitoring will reveal the benefits brought about by this management change.

Wherever possible, cutting equipment should be kept back from bank edges to avoid water vole burrows.

Timing of cutting

As part of the BAP process, the start of annual vegetation management was delayed to benefit nesting birds. Routine bankside cutting is currently from mid-July to the end of October but can sometimes extend to the end of November due to weather conditions. A later start to the bank cutting season would benefit a range of invertebrate species, reed-nesting bird species (see 5.3.7) and some late flowering plants. Further network-wide delays to weed cutting are not possible due to the requirement to maintain the core drainage function of channels. However, it may be possible to delay management operations on specific channels where operational considerations allow.

Collection of arisings

At present, arisings from bank vegetation cutting are left *in situ*. However, in practice, removal of cuttings will be extremely difficult to implement and will have practical, wider environmental and cost implications. The situation will be reviewed from time to time. (See also ADA BA3).

Grazing

Where watercourses are in pastoral areas, banks are often grazed by sheep or cattle. Grazing can be beneficial from a biodiversity point of view – the most florally diverse ditches tend to be in pastoral areas. Grazing removes nutrients from ecosystems, and so maintains the habitat diversity of channel banks and margins. There is also generally much less use of agri-chemicals in pastoral areas.

However, grazing can also have detrimental effects, in particular over-grazing and poaching:

- Where pastures have very high stocking levels, channel banks may have poor species and structural diversity. The lack of tall vegetation is detrimental to species groups such as dragonflies and damselflies, and moths. Banks can develop bare patches which can lead to erosion.

- Poaching of banks occurs where livestock access channels for drinking water and it tends to be worse where stocking densities are high; indeed poaching and over-grazing frequently occur together. A degree of poaching is inevitable in grazing marshes, but can be detrimental to wildlife if excessive. Eroded soil carries nutrients into the watercourse, causing eutrophication and silting-over of gravel beds downstream, which are important for some invertebrates and for fish to spawn. Excessive poaching can also destroy water vole burrows.

The IDB will not be able to directly control grazing of the banks of the watercourses they manage. However, where issues of over-grazing and poaching are identified during the ecological assessment, the Board will seek to work with partner organisations and

landowners to achieve solutions.

The reduction of stocking densities (preferably through an agri-environment scheme) would prevent over-grazing and reduce poaching. Where this is not practical, banks could be fenced (subject to the Board's formal consent) to prevent poaching and over-grazing of bank vegetation. Drinking bays or remote troughs should be considered so that livestock can still access drinking water. It should be noted that fences should not be installed where bank vegetation is good and their diversity maintained by grazing.

Following the ecological appraisal in 2015, the IDB were advised on channels where continuation of grazing is advisable and where poaching is affecting biodiversity. In these situations, the IDB should work with partner organisations and landowners to try to ensure the continuity of grazing, by raising awareness of the species in question and promoting Government financial incentives.

Where it will not interfere with crops or weed-cut, cut banks on long rotation to provide areas of rough grassland for reptiles, mammals and species which predate them e.g. barn owls Where it will not interfere with crops or weed-cut, leave tops of banks uncut where field margins are narrow or where they border crops of high risk for soil run off (e.g. maize).

7.2.1.2 *Channel margins*

Permanent margin specification

Current channel prescriptions include the retention of a permanent strip of marginal vegetation wherever possible. This most commonly takes the form of an alternating cut with marginal fringe. This is an excellent policy that is beneficial to wildlife, especially for water vole and dragon/damseflies. However, targeted adjustments to this policy in selected watercourses would benefit some species groups. Where the margin has become dominated by common reed, reedmace or reed grass, clearance of the margin in patches (ADA MA1 and MA2) would lead to greater plant species and structural diversity on certain channels. The margin should then be left undisturbed, if possible, for at least 5 years.

It is sometimes necessary to 'top' the marginal fringe to allow operators to see the channel during the weed-cut and to prevent drooping vegetation from restricting flow. This should not become general practice, since seed heads are an important food source for birds.

Where tall marginal vegetation is thought to be competing with or shading out priority aquatic plant species, annual clearance of the margin or parts of it may be beneficial. Where tubular water dropwort is present in margins and dominant species such as common reed are competing with it, selectively remove dominant plants to allow dropwort to re-colonise (ADA MA2). Watercourses with breeding reed bunting should be assessed carefully so as not to impact on their nesting habitat. The planting/redistribution of channel and emergent plants (ADA CL2, CC2, ML1, MC1) has not so far been attempted, but could help to achieve actions under the Vascular Plants SAP. A possible constraint might be significant extra time and financial resources spent working on those watercourses.

7.2.1.3 *In-channel*

Degree and frequency of clearance

At present, in-channel aquatic vegetation is cleared on an annual basis, leaving bankside margins and some specified patches uncut.

Biodiversity improvements are achieved by retaining some in-channel vegetation in the majority of watercourses. Flood risk and water level management is the obvious practical constraint to this. Any retained patches of vegetation should include any priority species.

Where retention of some vegetation is not possible, watercourses should be maintained later in the season, if possible, to minimise the impact on plants with late growing seasons.

Following the creation of management prescription sheets during 2010-2015, a variety of new weed cuts are being followed, including a reduced weed-cut of 50%-80% and a cut in longitudinal strips to encourage meanders and an increase in water velocity. In addition, manual cuts have been suggested where channels are narrow or gravel bottomed to avoid damage to banks and in-channel features. Where weed is not seen to be an issue, cuts will only happen as the need arises and not on an annual basis.

Sectional cuts have not been implemented due to the restriction on water conveyance which results.

It has been found over recent years that the 50% weed cut can cause issues with reed dominance. It should not be applied in channels which favour reed growth i.e. arable ditches with steep banks and low flows – unless the goal is to improve breeding habitat for reed-nesting birds and existing plant diversity is low.

Where high floristic diversity is limited to certain sections of a channel, it is currently the practice to carry out a 50% weed-cut on these sections, with an 80% cut in adjoining, diversity poor sections, with the aim of allowing plant propagules to spread. This technique is being monitored to gauge its effectiveness, with reference to the point made above.

Consideration should also be given to tackling the causes of excessive weed growth such as diffuse pollution. In some instances, it may be beneficial to leave one bank uncut for a number of years to increase the roughness of the field margin and guard the channel against chemical run off and spray-drift from surrounding fields. This will be at the cost of bank plant diversity, so should not be applied where bank plant diversity is high.

The current practice of leaving uncut weed on the bank edge has been developed to allow aquatic invertebrates and molluscs to re-enter the water. However, where banks have been identified as having high quality marginal or bankside flora, care needs to be taken not to allow vegetation to ‘mulch’ banks and enrich the habitat, encouraging the growth of rank vegetation such as nettles. Care must also be taken to prevent thick clumps of weed from blocking water vole burrows.

Ideally, cut weed should be moved further up the bank after a few hours, but this is rarely practical given the additional time/cost involved in the contractor carrying out the operation.

Debris/obstruction clearance

Small items of debris are cleared during regular watercourse maintenance. Woody debris is a valuable part of a healthy river system, providing nursery grounds for fish, habitat for invertebrates, and helping to control flood risk by slowing flows (Natural Flood Management). Where this debris is natural (i.e. woody material, plant matter), small in quantity and not causing a significant obstruction to flow, it should not be removed from a channel until risks and benefits have been considered. In some cases, it may be possible to remove only part of the woody debris or to fix it in place to prevent it washing downstream and blocking structures.

Training of contractors would be beneficial to ensure they fully understand the importance of leaving woody debris in the channel where possible.

Fixing woody debris within the channel can promote out-of-bank topping into wet woodland and marshland areas and hence help in preventing flooding downstream.

Use of machinery

Wherever possible, work from one bank only when carrying out in-channel clearance and as far from the edge of the bank as possible – this will minimise compaction of vegetation and water vole burrows.

Following the ecological assessment, the IDB have been advised on channels where use of machines with large buckets could potentially damage the channel banks or remove gravel from channel beds. Poor visibility or narrow channels sometimes make it difficult for some damage to be avoided and the use of smaller machines or manual cuts should be considered in these channels.

Use of herbicides

The current policy of not using herbicides in vegetation management will continue. The exception to this is in the control of invasive alien species, but even here, the use of this method is limited to certain species.

7.2.1.4 *Problem plant species*

Recommendations on management of problem species develop over time as new research is conducted, new biocontrol measures are approved and regulations on biocide use are introduced. Advice has therefore not been included here due to the likelihood that it will quickly become outdated. Recommended sources of information and management advice:

- Environment Agency staff
- Invasive Non-Native Species Secretariat website
- CABI website
- Regional Invasive Alien Species Management Plans (RIMPS): South East Region (available on GB Non-Native Species Secretariat website)

7.2.2 Physical channel enhancement guidelines

Two of the enhancements which can be carried out during desilting operations - pool creation at junctions and partial desilting (50% of channel width) to create shallow margins - have now become part of standard practice for all watercourses. The creation of berms is more problematic because it requires loss of land and extensive water vole surveys. Berms have also become largely unnecessary due to the general adoption of partial desilting, but they have been created on Waterbrook Dyke.

One situation where berm creation may still be considered is where a channel lacks emergent vegetation and is too narrow to achieve a partial desilt mechanically. This will be particularly applicable in areas important for Priority Species such as Dragonfiles/Damselflies, Shining Ramshorn Snail and Water Vole (see relevant Action Plans).

The redistribution of plants is an under-used method which could be used to increase plant diversity, as described in 5.3.1.

General factors to consider in assessment of channels for enhancements:

- The type of channel – characteristics of near-natural watercourses should be retained
- Channel profile, width and depth
- Impact on flood risk and water supply for appropriate water level management and licensed irrigation
- Impact on existing habitat and species – high quality ditches or those containing species with very restricted distribution should not be altered unless work is necessary to prevent loss of a species from channel
- Access for machinery
- Disposal of silt/soil
- Time and financial cost
- Acceptability of any land-take

The need for de-silting of channels should be addressed on a case-by-case basis. De-silting will not be necessary for all channels and should be approached with caution on channels with natural gravel bottoms and good natural geomorphology. De-silting by machine can easily damage channel beds, creating overly wide and deep channels which encourage more silt to drop out of the system.

Where it will not impede drainage, channels should be allowed to re-naturalise and in-channel meanders should be encouraged. Where a channel has sufficient flow, narrowing a channel may be a feasible option to improve water velocity and create self-scouring channels.

In some areas it would be more beneficial and cost affective to tackle the causes of silt, rather than the symptoms. Leaving banks uncut, installing silt traps on land drains or IDB channels themselves, planting hedgerows and fencing banks may all prove to be better solutions to continual de-silting. Partner organisations can work with landowners to adopt catchment sensitive farming methods to reduce run off.

General guidance on enhancements to be carried out during desilting operations:

Berms (ADA MC2 and MC3)

The ADA manual recommends, “Establishing vegetated berms on all but the smallest channels.” Near-natural watercourses should be avoided. Focus on channels too narrow for partial desilt. Only short stretches of berm may be possible at certain sites, but they will still benefit wildlife. In many cases land-take will be required and the impact on arable margins may need to be considered. Watercourses with high quality marginal vegetation or priority marginal plants should not be altered; works should be targeted on watercourses with little or no emergent habitat. New berms will re-vegetate through natural colonisation but if re-planting is required this will have a time and cost implication; the use of KSCP volunteers should be considered.

Pools (ADA CL3)

The ADA manual recommends locating pools at ditch junctions, but they can go elsewhere where this will not destabilise the bank. They will be particularly useful in shallower channels with periodic low flows, providing a refuge for wildlife; in deep channels they will be harder to excavate and bring little gain. Pools can be created in near-natural watercourses that have lost such features, but with careful planning and location to match the natural ‘pool-riffle-pool’ sequence. Pool creation is especially important for toads – see 5.3.6

Over-deepening of channel centre (ADA CL4)

This is a method for improving the conveyance of channels where in-channel vegetation is vigorous and the watercourse becomes choked every year requiring frequent management. The biodiversity benefits come from the retention of broad strip of marginal vegetation and from deeper water for invertebrates and fish spawning. This operation will produce quite a lot of spoil but the flood-risk management benefits are high. It is broadly equivalent to the partial desilt method which is now widely applied across the network. The ADA manual includes other techniques for similar situations that reduce impact on wildlife (CC1, MC1).

Scalloping of silt (CL1)

This technique could feasibly be applied to a number of IDB watercourses although probably inappropriate on those with high flood risk. These works are unlikely to have major time or cost implications as it is essentially just a different method of de-silting. Following the ecological appraisal and creation of management prescription sheets, a programme of targeted works for scalloping silt was suggested. However, this technique does not work in low-lying marsh ditches lacking flow as the silt banks which remain tend to collapse. It should therefore only be applied where plant growth indicates that the channel is naturally adopting a sinuous form, or as a means of avoiding the loss of patches of high plant diversity.

Redistribution of Aquatic Plants (ADA CC2 and CL2)

Whole plants, rhizomes and tubers are transferred to a nearby section of channel which has recently been desilted and has poor plant diversity. Donor and acceptor sites must be in close proximity for ease of transport. This is an especially useful method for extending areas of high plant diversity within and between channels. See Vascular Plants 5.3.1. Work could be carried out by KSCP volunteers.

The desilting of channels in areas of relict fen currently results in the spreading of nutrient-rich silt onto the banks, preventing the development of the diverse flora characteristic of this habitat. The solutions are complex and expensive: working with landowners to minimize soil run-off from surrounding fields; installing silt traps to stop silt before it reaches the fen; and removing excavated silt away from the fen. The first solution will require significant engagement with landowners – Catchment Sensitive Farming officers may be of assistance here. The second solution will incur installation and maintenance costs. The third is currently prohibited by law.

As enhancements achieved through routine maintenance have become more firmly established as IDB practices, one-off enhancement projects have become the most significant means of achieving channel improvements – see 5 Year Review (215-2020) for more details. These can involve bank and bed modification and installation of woody debris to recreate a more natural channel form. As such, they are mostly applied to channels which retain some natural character, at the upper end of the catchment. The types of methods applied are generally referred to as 'River Restoration' and are described in detail in 2 main sources:

- National Rivers Authority (1994) The New Rivers and Wildlife Handbook
- River Restoration Centre website https://www.therrc.co.uk/

Some of the methods described in the above sources are for larger, more natural rivers, so care must be taken in applying them appropriately to IDB channels lacking natural geomorphology, gradient and flow. Such methods were applied recently to Buxford Stream in Ashford. In this case, expert advice on geomorphology from EA officers played a significant part in shaping the project. In general, it is highly recommended that input be sought from all stakeholders before embarking on such projects, to improve the likelihood of achieving the project's aims.

7.2.3 Water level management and biodiversity guidelines

7.2.3.1 *Low flows*

Low flows in summer can be part of the character of natural watercourses and are not necessarily detrimental to wildlife; for example winterbournes such as the Nailbourne have seasonal flows and are excellent wildlife habitats, because wildlife has adapted to these flows.

Where low flows are caused by over-abstraction, diversion or other non-natural factors, wildlife is much more likely to be adversely affected because changes will be more sudden. If a watercourse that historically has not had very low flows suffers increasing abstraction pressures over a few years, species may be lost as they are not adapted to these conditions.

There are several watercourses in the upper reaches of the drainage district (e.g Waterbrook and Bockhanger Dykes) suffering from low flows for a number of reasons, some of which are unclear. Watercourses in this part of the catchment are by their very nature 'flashier' in character, but this is exacerbated by the urban setting of some. These conditions are detrimental to many wild species. When dry, watercourses can be unsightly and in places have become hot spots for littering and fly-tipping. Elsewhere, they become quickly choked with plants of slow flowing shallow water and damp ground, requiring frequent management and offering poor conveyance when it is needed.

Solutions to these issues will need resolving on an individual watercourse basis, but some suggested possible approaches are listed below:

- Where channels are linked to SUDS, road drainage, balancing ponds, urban wildlife ponds etc, consult with local authorities and site owners to achieve more reliable flows.
- Where shaded channels are littered and dumped into, consider clearance of trees to encourage vegetation growth.
- Work with local authorities and KSCP to tidy up, fence off and enhance habitats around unsightly channels; erect prohibitive signage.
- Create in-channel pools as refuges for wildlife.

7.2.3.2 *Flood events*

Flood events are a fundamental feature of the hydrology of natural river systems, and vital to wetland ecosystems. Natural river valleys are regularly inundated in their lower reaches, across floodplains that feature mosaics of floodplain habitats such as reedbeds and fens. The degree of flood defence in a system dictates the degree of connectivity of a river to its floodplain, and its naturalness.

The Lower Stour retains some characteristics of a natural floodplain – semi-natural wetland habitats, natural meanders – but is also highly characterised by man-made features, most notably artificial drainage channels and floodbanks. The degree of control over water levels is high. Despite this, natural winter flood events do occur. Their extent is generally contained by floodbanks but where flooding occurs, grazing marsh habitats vital to wetland birds can

be found. Elsewhere, lowered water levels in channels provide capacity for flood waters, and the floodplain is not inundated.

The IDB is primarily responsible for land drainage, flood risk management and water level management, but there may be scope for partnership involvement in schemes that create semi-natural habitats, reconnect watercourses to the floodplain and provide new flood storage capacity. In delivery of objective 2 of the Floodplain Wetlands HAP, the IDB will, where appropriate, work in partnership with other organisations to identify schemes such as those outlined below.

Arable reversion to grazing marsh or flood meadow

Payments are currently available to farmers under the Countryside Stewardship Higher Level Tier and under legacy ELS and HLS schemes to revert arable fields to pasture or meadowland. Water levels can then be managed to allow winter flooding. Even where pasture is not of high botanical value, the winter wet fields are valuable habitat for wetland birds and useful flood storage in the system. At time of writing, it is still unclear how the new ELM scheme will operate with respect to arable reversion.

Washlands (ADA CC8)

Designed to store flood waters upstream of land with flooding issues that are affecting development or crops, washlands are embanked areas which could be managed as a variety of wetland habitats, depending on water chemistry, soils and frequency of flooding. Agri-environment payments may be available to landowners. The obvious constraint is the cost of embanking, but, depending on the situation, it may not be necessary.

Ponds (ADA CC9)

Ponds also offer flood storage, particularly if off-line but with a sluice from a channel that can be opened in flood events. Storage ponds will provide habitats for a range of wildlife, but sudden water level fluctuations may be a problem. Off-line ponds close to channels fed by the water table will usually provide more stable conditions and some extra storage in the floodplain (although without the control factor).

Following the ecological assessment a number of locations have been identified where alterations to the drainage channel could help restore on and off line ponds. This work may need to be carried out by partner organisations. Payments for this work may be available under the Countryside Stewardship Scheme or its successor, ELM.

KSCP are delivering the District Level Licensing Scheme for the creation of Great Crested Newt habitat on behalf of Natural England over an area which entirely includes the drainage district. Any opportunities should be passed on to the relevant KSCP officer for further assessment.

'Re-wetting' relict habitats and creating new wetlands

Following the ecological assessment many areas have been identified where improvements could be made to re-wet habitats - woodland, fen or reedbed - where water levels have fallen, leading to a loss of condition. Land which has been out of cultivation for some time which could be used for habitat creation has also been noted. Landowners should be approached with proposals to restore or create habitats primarily by manipulation of water levels, causing

controlled flooding. This may well involve works to Ordinary Watercourses, creation of new channels and the installation of new control structures.

Costs are an obvious constraint to all the above schemes, but partnership with organisations with experience of agri-environment schemes and other sources of funding may be possible.

7.2.4 Tree-work guidelines

Trees and hedgerows adjacent to watercourses, while not in themselves aquatic habitats, can be important in the conservation of aquatic species. For example, they provide shelter for dragonflies and damselflies, and food and nesting places for a variety of wetland birds. They may also be habitats for non-aquatic species such as lichen, fungi, bats and farmland birds. In the lower stour marshes, where the occurrence of trees and hedges is low, ditch-side trees and hedges can be the only such habitat available. Good management of trees and hedgerows will bring biodiversity benefits across the drainage district. The amount of tree work that the IDB undertakes itself is not substantial and is largely functional in nature - usually to facilitate access or prevent obstructions to flow. It can, nevertheless, bring improvements for wildlife. The IDB will also aim to work with partner organisations and landowners to achieve improved management of bankside trees and hedges more broadly. IDB consenting requirements must be met when planting within the IDB Byelaw margin.

The sections below explore how different techniques can be used to manage the bankside tree habitats commonly occurring in the drainage district and how particular species groups can be protected.

7.2.4.1 *Season*

The Board will, wherever possible, carry out tree work during the autumn and winter months (October to March). This will minimise the impact on wildlife and on the trees themselves, which will not be harmed by work during their dormant period.

7.2.5 Work on tree-lined watercourses

Many watercourses in the drainage district are lined with small to medium-sized trees. They are particularly a feature of the upper parts of the drainage district but also occur elsewhere. Alder is the most characteristic species, but oak, hawthorn and other species also occur. Often, both banks are lined with trees. Tree roots help to stabilise banks in many instances. Roots in channels are important habitats for many invertebrates including white-clawed crayfish.

While trees provide habitats for a range of species, channels are sometimes heavily shaded and have poor vegetation. Clearance of trees for access offers opportunities to introduce light into the channel and increase its overall diversity. Trees should be coppiced, i.e. cut to a stump then allowed to regrow. This will also add to the structural diversity of the tree line. Coppicing extends the lifespan of trees and will prevent loss of top-heavy trees to windthrow and the associated damage to banks. It is a way of providing access without removing trees and their stabilising effects. If the access point can be varied over time, a few open patches with more diverse vegetation and trees at different stages of re-growth will be created, enhancing the habitat opportunities in the channel.

This could be taken one step further. In a woodland setting, different areas of the woodland are cut on systematic rotation, to provide a varied structure of sections at different stages of re-growth. This technique could be employed along tree-lined channels, dividing the treeline into strips of say 30m and cutting one strip per year. In practice, such management goes well beyond what the IDB would carry out for access, but could be implemented by a partner organisation in co-operation with the landowner.

Coppicing was traditionally used to harvest timber for different uses. As has recently occurred on the Godinton Estate, trees felled for the purpose outlined above can then be used nearby for enhancement projects, such as cattle drinks and Large Woody Debris.

7.2.5.1 *Shading*

A constraint on tree clearance may be that the shade control of in-channel vegetation will be lost, leading to a need for more frequent clearance. Where shade is controlling dominant duckweed or other problem plants, trees should be retained. In urban settings, there may be an advantage in clearing trees to encourage in channel vegetation (alongside other visual improvements) to deter fly tipping and littering.

Following the ecological assessment a number of channels have been identified where excess shading is reducing the biodiversity value of the channel or where inappropriate planting of species is reducing flows. Further work by the IDB to maintain trees is recommended.

7.2.5.2 *Mature trees and pollards*

Mature bankside specimens of alder and willow, particularly pollards, are characteristic of many wetlands. A pollarded tree is cut above the browse line (roughly head height) and allowed to re-grow from that point. The resulting multiple stems re-growing from the top of the trunk give the characteristic ‘shaving brush’ shape of the pollard. Traditionally, pollarded trees were used to stabilise river and ditch banks, and to provide a renewable supply of wood out of the reach of grazing animals. The drainage district does not appear to have a great many such trees, but they do occur, particularly in the lower reaches. Mature specimens of other species, particularly oak and ash, also occur on channel banks. Mature trees, particularly ‘veterans’ of great age, are very important habitats for invertebrates, birds, bats, lichen and fungi.

It is important that IDB operations do not adversely affect these important features of the landscape. Great care is therefore taken not to damage limbs and roots (including roots in channels). The ground around mature trees should not be churned up or compacted by machinery.

The best approach to veteran trees which are dying off in places is to allow the process to happen naturally wherever possible. Removal of dead limbs should be resisted as they provide rare habitats for specialised invertebrates. Where removal is essential, follow guidelines below under ‘bats’ and leave the parts of the limb in situ on the ground as if it had fallen naturally.

Pollarded trees should be re-pollarded on a regular basis where possible. Pollards that become top heavy with thick stems are more likely to suffer windthrow, shed limbs into

channels and will not live as long. While it is unlikely that the IDB will be carrying out such management themselves, they will work with partner organisations and landowners to conserve these characteristic features.

Following the ecological assessment and creation of the watercourse management prescriptions a number of locations have been identified where pollarding of willows would be beneficial.

7.2.5.3 *Dead wood and 'habitat' piles*

Dead wood is an important element in any ecosystem, providing habitats for a range of wildlife including invertebrates and fungi. Standing dead wood is a particularly rare habitat. Mature, dead trees should be left untouched *in situ* wherever possible to decay naturally. Where a dead crown is shedding limbs, reduce the crown, leaving as much of the tree as possible – at the very least, the trunk or 'snag'. Dead trees should be taken down according to guidelines below under 'bats' and the pieces piled on the ground where they will not interfere with operations.

It has now become a common IDB practice to create log piles as habitat for invertebrates, amphibians, etc., wherever tree work is carried out. Piles should be created in a mixture of shaded and open locations.

7.2.5.4 *Hedgerows*

Hedgerows alongside watercourses are a feature particularly of the lower parts of the drainage district, where they also often occur alongside drove roads They tend to be dominated by hawthorn, but other species such as blackthorn and dog rose can be seen. They provide habitat for birds, mammals, and invertebrates.

Where it is necessary to cut back a hedge to enable access for channel maintenance, this should always be carried in autumn and winter. Manual trimming is preferable to mechanical cutting as the use of flails tends to damage trees, leading to fungal infections and other problems, tree death and a gappy hedge.

From a biodiversity point of view, hedgerows are best managed by 'laying' – a traditional technique where trees are partially cut at the base of the stem, bent, and woven between stakes. There are many techniques and even a summary is beyond the scope of this plan. It can be prohibitively expensive, but the IDB's partner organisations may be able to work with landowners to carry out such management. Payments are available for this technique under the Countryside Stewardship Scheme.

7.2.5.5 *Mosses and lichen*

Trees are important habitats for mosses and lichen. Where coppicing or other cutting is necessary, trees which obviously have a great quantity or variety of species growing on them should be retained, if possible. These will tend to be more mature specimens.

With no survey data on these species groups, targeted recommendations for their conservation cannot be made. However, care should be taken in the South Willesborough Dykes area where the moss *Ulota phyllantha* is found at one of only two locations in Kent.

7.2.5.6 Bats

All species of bat are protected by law. It is an offence to kill, injure or take bats, deliberately disturb them, or damage, destroy or obstruct a bat roost. Any tree can be a bat roost, although mature trees are more likely to be used. It is important that tree work is carried out with an awareness that bats may be occupying trees. The Bat Conservation Trust leaflet 'Bats and Trees' is a comprehensive guide to bat-friendly tree management. The key guidelines are as follows:

- Mature trees with many splits, holes and crevices and/or a covering of ivy should ideally be inspected by a qualified person before work starts.
- Signs of bat occupation include dark staining under holes, scratch marks around holes, droppings below a hole (like powdery rodent droppings), noise coming from hole (squeaking, chattering).
- If a bat or evidence of use by bats is discovered during works, work must stop immediately; contact Natural England or the Bat Conservation Trust or Kent Bat Group for advice; if bats are injured help must be sought urgently from these sources.
- Where possible carry out work in October or March, avoiding the main hibernation period.
- Keep works minimal: retain as much of the crown as possible; retain dead wood unless unsafe.
- Try to cut as far above any holes as possible (no closer than 1m).
- Inspect large cracks or splits held open by weight of a limb that would close if limb removed.
- Where trees are ivy-clad, cut ivy and allow to die back before working on tree or, if not possible, following work leave ivy for 24 hours before disposal.
- Lower cut limbs to the ground wherever possible.
- Retain dead wood wherever possible; if it must be removed, leave for 24 hours before burning/chipping.

See also Appendix 9 of the ADA manual.

7.2.5.7 *Tree planting*

Partner Actions under 5.2.1 include planting bankside trees, but care must be taken in choosing the correct locations – see above. The IDB can advise landowners to focus on areas which are particularly important for species which benefit from bankside trees: dragonflies (especially scarce chaser), reed buntings and toads (see relevant Action Plans).

7.2.6 Targeting management

While this plan will help the IDB to bring biodiversity improvements to IDB watercourses across the drainage district, it is useful to look at how time and effort can be prioritized. A new system for prioritizing channels will be developed, taking into account the following factors: proximity to protected sites, presence of priority species or the potential to support them, current condition and potential for improvement, and landowner support. The notes below on targeting of sites and species will inform this new system.

7.2.6.1 *Targeting sites*

An important factor in the prioritization of channels for enhancement is their proximity to designated sites. The following table sets out all such sites in the district, scoring them on their importance and the level of actual and potential IDB involvement in them.

Site name	Designations	Importance	Level of IDB influence	Total score	Comments
High priority sites					
Hacklinge Marshes	Ramsar, SPA, SSSI	3	3	6	Many IDB watercourses; their management is very important in water level control and key species conservation. IDB have an ongoing dialogue with NE. Includes Ham Fen KWT Nature Reserve and Lydden Valley RSPB Reserve.
Stodmarsh	Ramsar, SPA, SAC, SSSI, NNR	3	2	5	A few IDB watercourses present in the eastern parts. IDB have an ongoing dialogue with NE.
Ash Level	LWS	1	3	4	Multiple IDB watercourses cross this large site and hold much of its biodiversity interest. IDB will target efforts on this site, working with landowners

					and partner organisations, including KWT's LWS Officer.
Chislet Marshes	LWS	1	3	4	Multiple IDB watercourses cross this large site and hold much of its biodiversity interest. IDB will target efforts on this site, working with landowners and partner organisations, including KWT's LWS Officer.
Preston Marshes	SSSI	2	2	4	Small sections of IDB watercourses present.
Buxford Meadow	LWS	1	2	3	This small site encompasses a single IDB watercourse (Buxford Dyke) which is an important habitat within the site for many species, including white-clawed crayfish.
Medium priority sites					
Elmstone Valley	LWS	1	2	3	The two water bodies feeding this small wetland valley are both IDB watercourses. Their management is key to its conservation.
Hothfield Common/Hothfield Heathlands	SSSI, LNR, KWT	2	1	3	A single IDB watercourse runs along the western boundary of the site. IDB have an ongoing dialogue with managers KWT.
River Great Stour etc., Godinton	LWS	1	2	3	This site encompasses a single IDB watercourse (Buxford Dyke)

					which is an important habitat within the site for many species, including white-clawed crayfish.
Seaton Pits and Wenderton Manor Woods	LWS	1	2	3	IDB watercourses run around and between some of the pits. Investigation on the ground needed to ascertain their importance within the site.
Ashford Green Corridor	LNR	1	1	2	Waterbrook Dyke runs through one section of the LNR (known as Frog's Island). There are low flow problems with this watercourse which should be addressed.
Backhouse Wood	LWS	1	1	2	An IDB watercourse (Aldington Dyke) runs along the boundary of this wet woodland. Investigation on the ground needed to ascertain its importance within the site.
South Willesborough Dykes	LWS	1	1	2	This larger site encompasses only one IDB watercourse (Hart Dyke).
Great Stour, Ashford to Fordwich	LWS	1	1	2	This site is primarily the main river corridor but includes parts of a few IDB watercourses.
Low priority sites					
Lenham Heath and Chilston Park	LWS	1	0	1	No IDB watercourses.
Little Chart Mill	LWS	1	0	1	No IDB

Ponds and Woodland					watercourses.
Little Hall and Kemberland Manor Woods	LWS	1	0	1	No IDB watercourses.
Whitehall Meadows and Bingleys Island	LNR	1	0	1	No IDB watercourses.
Woods and Grassland, Minster Marshes	LWS	1	0	1	No IDB watercourses.

7.2.6.2 *Targeting species*

The SAPs in this plan contain species specific management measures which the IDB will consider with its partnership organisations. These should, where possible, be targeted at particular watercourses, based on survey data. There are a number of approaches to doing this. The fact that a species is present in a particular watercourse would seem to indicate that the management must be right for it. While this will be true in some cases, it should not be assumed.

A number of situations may pertain:

- The population of a species is excellent in a watercourse where management is optimal and should not be altered.
- The population of a species is good, in a watercourse where small adjustments to management could be made but are not essential.
- The population of a species is poor in a watercourse where there is a lot of scope to manage it better.
- The species is present in a watercourse but the population of very poor and speedy changes to management are essential to prevent its loss.

It is also worth noting that:

- Some species naturally live at low densities and will always be present in low numbers, even in perfect conditions.
- Management may be optimal but the population is poor for other reasons, which may be beyond the control of IDB and will require partnership working.
- For some species it will not be realistic to expect large populations in the more open, frequently managed conditions of IDB watercourses.

The individual assessment of watercourses combined with other species surveys will enable well-informed management, and decisions should be made on a case-by case basis, but the following guidelines will be considered:

Situation	Response
Channel has a good-sized, stable or increasing population of a priority species.	Do not alter management; the management should be used as a model to be applied to other, similar channels.
Channel has a lower population than one would expect (management seems good)	Analyse management; consider adjustments to management in line with SAP actions.
Channel has a very small population.	Consider whether it is realistic to expect a larger

	population of this species in this channel; if so, take action through management changes in line with SAP actions.
There is evidence of a once good but declining population in this channel.	Take urgent action through management changes; investigate other possible factors.
Species is absent from a channel where management is poor for that species.	Is it achievable to make management good for that species? Will it be able to naturally colonise from existing populations if conditions are improved? If yes to both, make management changes in line with SAP.
Species is absent from a channel where management is good for that species.	Is the channel close to existing populations of this species? If yes, adjust management, but also look into other reasons it may be absent. Consider reintroductions for non-mobile species.
Species is absent from channel and channel is not close to existing populations.	Management for that species not worthwhile, unless: it is a very mobile species e.g. reed bunting; it can be shown historically that species was present in the vicinity of the channel, in which case consider re-introduction for non-mobile species; the species is very local or patchy, threatened with extinction from the District (e.g. white-clawed crayfish), and channels suitable for it exist in the drainage district, in which case consider reintroduction.

In general, an experimental, cautionary approach to changes in management is advisable: managing the habitat along just part of a channel; trialing a widespread technique at single channel initially.

Particular care should be taken where populations of priority species are small and limited to one or a few locations (e.g. least bur-reed) – while action is almost certainly required in these situations, the species could be 'managed out of existence' in just a single year by radical, poorly considered changes to management. Sometimes it is better to leave such populations alone and concentrate on improving conditions nearby.

7.3 Survey and monitoring

7.3.1 Ecological assessment of drainage district and watercourse management prescriptions

The process for assessing channels and producing prescriptions which has been in effect over the last 15years is as follows:

1. Carry out general survey of channel using standard method which includes biodiversity, physical characteristics and water quality
2. Create Management Sheets and Maps which provide an overview of channel condition and act as instructions for operators

3. Resurvey channels to assess effects of management and make adjustments to prescriptions accordingly

An established survey method has been used for a decade to assess channels, with some minor alterations. The method should be assessed periodically to ensure it is simple and repeatable, providing information which is accurate, relevant and actionable. The incorporation of technology for recording and data transfer should be included in the assessment, as this becomes more affordable and usable. Some general notes on the scope and content of surveys from the 2010 BAP which remain relevant and useful:

Positive indicators of habitat quality for watercourses include:

1. Banks with a diverse range of flowering plants, sedges and rushes.
2. A fringe of emergent vegetation at the margin of the water, with a range of plants such as yellow flag iris
3. Diverse aquatic vegetation including plants such as frogbit, pondweed (Potamogetan) species, and areas of open water.
4. Presence of water snails, water beetles, dragonflies and damselflies such as the banded demoiselle.
5. Presence of amphibians, breeding birds such as reed warbler and water voles.

Negative indicators of habitat quality include:

1. Banks dominated by rank vegetation – nettles, docks etc.
2. Large areas of algal growth on the water surface.
3. Unbroken carpet of duckweed to the point where other plants would be shaded out (but note – rootless duckweed is a priority species).
4. Presence of invasive alien species.

Research and guidance documents that should be referred to when developing a survey method are:

PALMER (2008) *Plants of British standing waters: A conservation fact file.* JNCC

MOUNTFORD and ARNOLD (2006) *Aquatic Plant Diversity in Arable Ditches: Scoping Study*. NERC

PALMER, DRAKE AND STEWART (2013) *A manual for the survey and evaluation of the aquatic plant and invertebrate assemblages of grazing marsh ditch systems*. Buglife

The full channel survey is quite time-consuming, so in some cases a quicker, simpler approach may be taken. Two important cases are post-enhancement monitoring, where the focus can be limited to the intended outcomes (e.g. silt scouring, plant diversity), and post weed-cut surveys in areas important for priority species such as Shining Ramshorn Snail and Water vole, where it is essential that margins of uncut vegetation are preserved.

Individual channels are periodically resurveyed to assess the impact of management prescriptions, routine operations, external impacts, and one-off enhancement projects. Channels are already prioritized for resurveying, based on time since last survey, botanical diversity, the presence of highly endangered species (White Clawed Crayfish) and other factors. The system for prioritizing channels should be reviewed and clearly defined in written

form.

Management prescription sheets have now been written for most IDB channels; just a few of the adopted channels remain to undergo this process. Guidance notes for producing management sheets from the 2010 BAP which remain relevant and useful:

Using the ecological assessment as a context, and the guidelines in this plan and Drainage Channel Biodiversity Manual as sources of methods, produce management prescriptions for all IDB watercourses. Prescriptions should include: description and classification of watercourse type, rating of ecological condition, rating of management, relationship to adjacent habitats and watercourses, recommendations for improvements to regular management if any, potential for channel enhancements by physical works to channels and planting. Prescriptions should be designed to:

- benefit any priority species/groups known to be present (surveys will not have been completed for all, so prescriptions will need reviewing following surveys)
- benefit other notable species
- control problem species

Produce a work plan made up of concise, simple management prescription sheets for individual IDB watercourses to be used by contractors. Design work plan with consideration to how the maintenance programme is structured.

As species surveys are carried out, watercourses that have already had prescription sheets written may need to have prescriptions reviewed if surveys show that:

- they have previously unknown populations of priority species;
- they have significant populations of other important species (e.g. great crested newt)
- known populations are declining or have been lost.

7.3.2 Species surveys

Surveys of species that have previously been surveyed in recent years should follow the methods of those studies, to enable comparison and establish trends. They can be found in the following survey reports, which are all held by the KSCP:

BRAMLEY ASSOCIATES (2005) Water Vole Survey of the Lower Stour Valley Marshes in Kent

KILLEEN I.J. (2000) A Survey of the Kent Grazing Marshes for the Freshwater Snail Segmentina Nitida, English Nature

HENDERSON ECOLOGICAL CONSULTANTS (1997) A Survey of the Floristic Interest of the Ditches of the Lower Stour Valley and (1998) A Survey of the Floristic Interest of Additional Ditches of the Lower Stour Valley

DAVID ROGERS ASSOCIATES (1998) Crayfish Survey of the Stour Catchment, Environment Agency

For methodologies for the other species surveys recommended in this plan, the local experts or consultants commissioned to conduct them will be able to recommend the best approach.

Summary methodologies can be found in a number of sources, including the ADA manual*, and species management handbooks.

Some species surveys will require licensed surveyors – see Chapter Six of the ADA manual* for more information.

One priority species survey has been conducted since 2010, KWT's 2012 Mollusc survey which focused on the Shining Ramshorn Snail. A full report has not been obtained from KWT, but data relating to IDB channels in the Lower Stour is available.

As BAP guidance now requires more quantitative data, this is an area where more effort is highly recommended. Many of the practices which have been introduced since 2010, such as leaving marginal vegetation and alternating bank cuts, are highly likely to have had a positive impact on some on priority species such as Shining Ramshorn Snail and Water vole. To ensure these surveys are carried out, approaches to be considered include citizen science (possibly as a KSCP project) and engagement with amateur naturalist groups.

7.3.3 Gaps in knowledge

The surveys recommended in this plan will improve knowledge about prioritised species. The biodiversity audit flagged up a number of species groups which may be important in the drainage district but were not prioritised. In some cases, there was little knowledge about these species, and it may be worth considering survey work. Depending on results, it may be that some species or groups should be considered for new SAPs. The species groups are:

- Lower plants – particularly stoneworts, mosses and lichens, but also fungi and liverworts.
- Moths (Lepidoptera) - particularly species associated with water
- Beetles (Coleoptera) – particularly aquatic species
- Bugs (Hemiptera) - particularly aquatic species
- True flies (Diptera) - particularly species associated with water
- Caddis flies (Trichoptera)

The biodiversity audit also flagged up a number of species that appear to have been lost from the drainage district. Survey work to confirm this and partnership work to investigate the feasibility of reintroducing these species should be seriously considered in the future. The species are:

Hedgehog stonewort	*Chara pedunculata*
Marsh stitchwort	*Stellaria pallustris*
Greater water parsnip	*Sium latifolium*
Bulbous foxtail	*Alopecurus bulbosus*
Ground beetle	*Anisodactylus poeciloides*
Ground beetle	*Amara strenua*

Some species are borderline for inclusion in SAPs: either they are already the subject of SAPs and may need to be demoted, or they are not and may need to be promoted. In both cases, further survey work and monitoring of local and national conservation status will be required to determine if they warrant inclusion in SAPs. Such species include Common Toad and Great Crested Newt, reed-nesting birds other than reed bunting and some species of dragonfly – see individual SAPs for more details.

The 2012 Kent Habitat Survey noted that wet woodland extent was difficult to establish. Extent and condition of this and other wetland habitats which surround IDB channels should be included in surveying effort. A set of criteria for assessing the condition of such habitats should be created for guidance.

7.4 Advisory/awareness raising

7.4.1 Information for landowners

In earlier BAPs, it was recommended that awareness raising should take the form of information leaflets on priority habitats and species. While this may remain an appropriate mode of communication which could be explored in the future, the time and expense required make it unrealistic for the time being. A more direct means of communicating is through conversation with landowners following summer surveys. Interactions between the IDB and landowners can be used to achieve better outcomes for biodiversity in IDB channels, OWCs and the wider district. Some landowners will be more receptive than others, so it may be more effective to focus effort accordingly. Timing of engagement should ideally be soon after surveying ends in September, but this broadly coincides with crop harvesting so farmers may be unavailable. A better time to interact with farmers is therefore during the quiet period over winter. These conversations are also an opportunity to engage about wider land management practices which negatively impact on channel health.

Over time, it is anticipated that IDB staff will become more confident in communicating biodiversity issues to landowners – this is the aim of some of the Procedural Actions (6.3). In the short term, however, this task will mostly fall to the IDB Ecologist. A brief summary of topics to be covered, with reference to the Habitat and Species Action Plans, is as follows:

- Tree management - pollarding, hedge/tree planting
- Field margins – importance for wildlife, funding through agri-environment schemes
- Rationale for reduced levels of regular maintenance by IDB – alternating bank cut, partial desilt
- Impact of farming practices on water quality, including EA's 'Farming Rules for Water' – see www.gov.uk/defra/farmingrulesforwater
- Management of Ordinary Watercourses for general biodiversity
- Measures to reduce silt and nutrient run-off
- Presence of high floral interest channels and priority species on their landholding, and management advice tailored to these
- General advice about agri-environment schemes and other sources of funding or advice
- District Level Licensing scheme: pond creation as Great Crested Newt habitat mitigation

The final point refers to the scheme administered by Natural England and implemented by

KSCP in this drainage district. NE create Strategic Opportunity Area maps to define where effort should be focused for the creation of ponds. Landowners, if interested, can be directed to the KSCP officer responsible for implementing the project.

Guidance on the production of leaflets from the 2010 BAP is included here for reference:

Awareness raising materials should take the form of a series of simple, concise information leaflets. They should be accessible in language and style and focus on explaining the value of the habitat or species, threats and issues affecting it and achievable best practice management. The financial incentives for good management should also be promoted.

Habitat information should be widely distributed to landowners across the drainage district, while species information should be more geographically targeted, according to distribution data.

The following table gives guidelines on producing information on those habitats and species which feature awareness raising in their action plans.

The KSCP produced a leaflet in 2009 on management for water voles which could be used as a template, although shorter publications will be sufficient for some topics.

Topic	Notes
Drainage channels	Probably the most important topic. The content should be a guide to the management of ordinary watercourses, with advice that reflects the role of these watercourses in the overall drainage catchment ecosystem. It should explain the importance of these channels, in particular the importance of not allowing them to silt up and dry out, and contain techniques for wildlife-friendly maintenance. It should include information on agri-environment payments for ditch management.
Floodplain wetlands	Content should focus on the loss of wetlands in the UK and the opportunities and financial incentives for wetland restoration and creation, encouraging landowners to contact partner organisations with proposals for new wetland schemes.
Boundary and linear habitats	A best practice guide to managing all these habitats, in particular those more characteristic of the drainage district such as drove roads and old counter walls. Guidelines earlier in this section and ADA manual techniques can provide content.
Vascular plants	There are likely to be landowners with ordinary watercourses containing scarce plants that neither they or the county recorders are aware of. The content should raise awareness of what the species look like and where they are likely to grow – an appeal for landowners to look out for and report them, and seek management advice.
Shining ramshorn snail	This leaflet should be targeted at landowners in areas where this species occurs, raising awareness of the fact that less open, ordinary watercourses are key habitats. Content should focus on encouraging best practice management for this species.
Dragonflies and damselflies	Probably cover in drainage channels material rather than a dedicated leaflet.

Common toad	Content should focus more on management of channels and water bodies for amphibians generally, as ordinary watercourses less suitable for toads.
Reed bunting	Content should cover a range of farmland/wetland birds as well as reed bunting, putting forward simple changes to management (e.g. leaving bankside vegetation) that can benefit many species.
Water vole	A leaflet has recently been produced and distributed by KSCP.

KSCP have delivered talks on issues affecting watercourse wildlife under the Our Stour Project between 2017 and 2024. Topics included ditch vegetation management for wildlife, American mink, and water quality issues. Alongside 1:1 engagement, this has been an effective method for communicating aims and methods to landowners and it is hoped that further talks will be delivered under an extension of this project from 2025 -2030.

7.4.2 Information for general use

More information on the IDB and its activities is available on the Board's website (www.riverstouridb.org.uk) or by contacting the Board's Clerk at 34 Gordon Road, Canterbury, Kent CT1 3PW (Tel: 01227 462377).

7.4.3 Agri-environment schemes

Biodiversity within the IDB watercourses is heavily impacted by land use surrounding them.

Alteration of land use can reduce pollution and increase habitat but requires incentives when production of crops and livestock is impacted

Countryside Stewardship and Higher Level Stewardship are currently being phased out and replaced by Environmental Land Management (ELM) which was introduced in 2024. There are 3 ELM schemes and supporting capital items – Sustainable Farming Incentive, Countryside Stewardship Higher Tier, (CSHT) and Landscape Recovery. These 3 new schemes allow landowners to choose the most appropriate actions for their land.

Mandatory Biodiversity Net Gain was introduced through the Environment Act 2021 and has now been implemented within the planning system. Alongside this, some of the River Stour IDB catchment falls within Nutrient Neutrality mitigation areas and there is a growing market for carbon credits. These 3 options for payment for land change can be stacked alongside ELM;s payments. All 3 options are still in their infancy and beyond the scope of this BAP however these are streams of income for landowners which could support improved Biodiversity within the IDB catchment area.

The Local Nature Recovery Strategy is now a required mandatory document throughout the UK and will be used to focus conservation efforts, informing local planning decisions and the credit system. The IDB will be aware of where their watercourses fall within the LNRS and direct partnership working for biodiversity improvements. As part of the LNRS, a mapping tool has been created which shows priority habitats and potential measures that could improve these and adjacent land. This mapping tool allows identification of areas suitable for Biodiversity Net Gain uplift and can be found here – *https://www. Kent and Medway LNRS online mapping tool | Making Space For Nature Kent*

8. Monitoring

Ongoing monitoring will be needed to ascertain the effectiveness of the changes in management practice on some watercourses and to determine whether enhancements have been successful. A suggested programme of channels to be monitored will be produced and monitoring guidelines agreed.

9. Reporting

A progress summary will be provided to the Board at each quarterly meeting and a presentation will be made at each AGM by the IDB Ecologist on major areas of work carried out during the previous 12 months.

A review document will be produced every 5 years, summarizing progress made, assessing work carried out and making recommendations for future work.

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 summary reports, survey data and other information available externally in the following ways:

- In the public domain via the IDB's website and Social Media
- 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;
- Kent and Medway Biological Records Centre, Kent Mammal Group

10. Appendices