Lower Crane Valley Environmental Management Plan

January 2024 – December 2028

LONDON BOROUGH OF RICHMOND UPON THAMES

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Foreword

In memory of the late Councillor Martin Ellengorn, a long-time friend of the River Crane and its community, who was always an upstanding advocate of our local biodiversity. Councillor Ellengorn championed many local environmental groups and causes and helped pave the way to a greener borough.

1.0 Introduction

The Lower Crane Valley Environmental Management Plan has been written by Richmond Councils' Ecology Policy and Planning Officer as part of the Councils' commitment to the preservation and enhancement of biodiversity. Each site is managed in accordance with the habitat and species action plans of the Richmond Biodiversity Action Plan, Council Policies, general good management practice and current legislation.

The vision of the plan is to conserve, maintain and improve the quality of habitats, whilst improving the visitor experience on site.

1.1 Caveat

The implementation of prescriptions in this management plan will be subject to available budget. It is anticipated that additional external funding may need to be secured to realise the complete fulfilment of the five-year management plan.

2.0 Terms of reference

This management plan is designed to inform and outline the restoration and maintenance of the Lower Crane Environment from conservation, landscape and visitor perspectives by Richmond Council working in conjunction with Council contractors and community organisations.

Throughout this management plan our goals are to:

1. Restore and enhance the site to develop it as an attractive leisure and environmental asset for residents and visitors alike.
2. Protect and enhance the ecology of the mixed habitats with appropriate management and planting.
3. Enhance the visitor experience by creating an attractive natural space which invites exploration and encourages educational and recreational use.
4. Explore the potential to develop the various Friends groups and engage with a wide cross-section of the community.
5. Preserve and build-upon the legacy of the people and natural environment of the River Crane for future generations.

To deliver these goals, this plan considers the sites' history, ecology and visitor use; it draws together existing data on its trees, habitats and species with new surveys; it sets out refined objectives and the prescriptions to deliver and maintain the site over the next five years.

The management plan should not be regarded as fixed; the prescriptions provide a framework and guidance that enable reaction to changing conditions. Reviewing progress and monitoring key features on a regular basis is important in ensuring the site is managed appropriately and in a sustainable way, as such as a management review will be carried out by the Council annually.

2.1 Supporting documents

This Management Plan should be read and interpreted in conjunction with the following documents:

- Lower Crane Re-naturalisation and Enhancement Plan (ZSL, 2023);
- London Borough of Richmond upon-Thames Nature Conservation Policy Statement 2019;
- Strategy for the Crane Catchment 2018-2028 (Crane Valley Partnership, 2018);
- Tree Policy, London Borough of Richmond upn-Thames (2023).

3.0 Site description

3.1 Site details

Upstream Location	Little Park/Pevensey Road Nature Reserve
Downstream Location	Moormead and Bandy Recreation Ground
Ownership	London Borough of Richmond upon Thames/London Borough of Hounslow
Designation	Site of Importance for Nature Conservation (# RiBII15) Green Belt (GB)
Length	5.5km (approx.)
Key habitats	Grassland, scrub, pond, wetland and woodland.
Key species	Water Vole, Kingfisher, Water Rail, Nuthatch, Long-Tailed Tit, Little Egret, Song Thrush, Grey Wagtail, Greater Spotted Woodpecker, Marsh Tit, Black cap, Goldfinch, Dunnock, Slow Worm, Bat, Badger, Grass Snake and Hedgehog

3.2 Site description

3.2.1 The River Crane is a tributary of the Thames which begins in Harrow and runs through Hillingdon as the Yeading Brook, changing its name to the Crane at the intersection of the Great Western Railway and eventually meeting the Thames at Isleworth. The artificial Duke of Northumberland's River links the Crane Valley to the Colne Valley.

3.2.2 The Lower Crane Valley is a linked network of open spaces within the boroughs of Richmond upon-Thames and Hounslow. Many of these spaces are of high environmental significance and valued for recreation. The variety of flora and fauna create an important wildlife corridor for west London. The River Crane, also supports a diverse range of aquatic and marginal river wildlife. The Lower Crane Valley forms the lower reaches of the Crane Corridor, which is designated as a Site of Metropolitan Importance for Nature Conservation.

3.3 Designation

Designations afforded to this site either in part or in full include:

- A Site of Metropolitan Importance for Nature Conservation (SINC). Full details can be found in Appendix 5;
- Metropolitan Open Land;
- Green Belt (Little Park);
- Local Nature Reserve (Crane Park Island).

3.4 Ecological interest and features

The Lower Crane Valley is an important corridor for wildlife in urban west London. It comprises a wide variety of habitats including the river and marginal wetland, open grassland, woodland and scrub. These habitats support a wide variety of animals including seven species of bats, water voles, kingfishers, reptiles, amphibians, stag beetle, hedgehogs, eels and fish. One Local Nature Reserve, Crane Park Island, is present within the Lower Crane Valley in the London Borough of Richmond Upon-Thames. This site is leased and managed by the London Wildlife Trust.

3.5 Land use history

The landscape of the Lower Crane Valley today reflects its history and past use, which is recognised by its designation as an Archaeological Priority Area (APA) by English Heritage (EH). It has a strong cultural history and has been a major industrial centre in recent centuries.

Man's influence on the history of the River Crane can be seen in some of the place names in current use - for example old industries are represented by Powder Mill Lane, Mill Road and Feltham Marshalling Yards. Mereway Road indicates where the river was widened and Mereway Bathing Place was established and Craneford Way marks where there was once a ford across the River Crane. Hospital Bridge Road is close to the site where King James II set up a field hospital for his troops in 1688 before he fled abroad.

From the late 18th century to 1926 Bedfont Gunpowder Mills operated in the area which is now Crane Park, due to its isolated position, the supply of water power and abundance of willow and alder trees for making charcoal. At Crane Park Island, the waterwheel pits, millstones and machine foundations of the former mills can still be seen in the park.

After the closure of the mills the southern section of the Crane River was formed into a public park and opened to the public in 1935. The river borders parkland in the north, within the London Borough of Richmond, and woodland, scrub and grassland on the south bank in London Borough of Hounslow.

3.6 Community involvement

Friends of River Crane and Environment have been established since 2003 and became a registered charity in 2005. They are a highly active and engaging organisation with over 700 members, who's primary purpose is 'the enhancement of the wildlife value of the River Crane corridor'. The group collates large amounts of biological data from surveys and organises regular events for the benefit of local residents. With all aspects of site management on the Lower Crane, FORCE are involved in the decision making process.

Two other official local Friends groups are active within the Lower Crane Valley. These are Friends of Kneller Gardens and Friends of Moormead and Bandy Recreation Ground. These groups work collaboratively with FORCE and LBRuT for the betterment of these two valuable green spaces. In addition, Richmond Green Gym, an initiative set up by The Conservation Volunteers (TCV) to help people keep fit and improve wellbeing whilst transforming the local environment, holds a weekly workday on the River Crane, primarily caring for Meadway Orchard, where the group has its base.

3.7 Stakeholders

As with all river catchments in England, the Catchment Based Approach (CaBA) is employed in the Crane Valley. This is a civil society-led initiative, engaging relevant organisations and local people in the effort to help protect and improve the country's water environments. Stakeholders and interested parties involved in the management of the Crane river system (and the Longford River) are embodied by the Crane Valley Partnership, the catchment partnership responsible for overseeing the CaBA in the Crane Valley. Core CVP Partners include: the five relevant Local Authorities (London Boroughs

of Harrow, Hillingdon, Ealing, Hounslow and Richmond upon-Thames), Environment Agency,FORCE, Heathrow Airport Limited, London Wildlife Trust, Thames Anglers Conservancy, Thames Water and The Conservation Volunteers. CVP has an extensive network of project delivery partners including a large number of local community volunteering groups. For more information on CVP please see: https://www.cranevalley.org.uk/ .

3.8 Access and visitor experience

It is the aspiration of all partners in the Crane Valley Partnership to create a joined up riverside Crane Valley Trail throughout the catchment. All areas of the Lower Crane as covered within this management plan are linked by at least one footpath which continues from Little Park downstream to Moormead and Bandy Recreation Ground. A tarmacked footpath is present from the Hanworth Road entrance of Crane Park downstream to Moormead and Bandy Recreation Ground, which allows visitors to walk and cycle continuously through the Lower Crane Valley. This path also links with the Duke's River Walk, along the towpath of the Duke of Northumberland's River. A network of secondary surfaced footpaths, woodchipped footpaths and desire lines provide managed access throughout the rest of the area, linking popular nature conservation spaces such as the meadows, woodlands and Crane Park Island Local Nature Reserve.

Visitor engagement and education is encouraged through a series of information boards which describe the ecological value and function of the habitats, as well as the historic significance of the area. These are complimented by the carved benches procured by FORCE, which are located throughout the Lower Crane Valley. The benches are themed to reflect the biological and historical heritage of the area.

There are numerous facilities within the Lower Crane Valley, including cafés, visitor centres, play equipment, pavillions and sports courts and pitches. Kneller Gardens and Moormead and Bandy Recreation Ground are used heavily for play and sports, in particular tennis, basketball and cricket. The historic 'brick tower' at Crane Park (See *Section 3.9*) has been converted into a visitor centre with toilet facilities, and provides a hub for school visits to the Crane Park Island LNR which are hosted by the London Wildlife Trust.

3.9 Duke of Northumberland's River

The Duke of Northumberland's River was constructed in the early 1500's to transfer water for industrial purposes to power mills. It is an artificial man-made channel, which diverges from the River Crane at the junction between Kneller Gardens and Mereway Nature Park and flows northwards towards the borough of Hounslow where it converges with the River Thames at Isleworth. The river is fully accessible to the public via the Duke's River Walk.

3.10 Crane Park Island and brick tower

Crane Park Island is a Local Nature Reserve surrounded by the river in Crane Park, characterised by a mosaic of woodland, scrub, ditches, ponds and reedbed that has developed following the cessation of industrial activity in the area in the mid-20th century. The island is rich in biodiversity and is home to a number of rare species including water vole and water rail. It is used as an educational hub by London Wildlife Trust who manage the reserve and acts as an extremely successful focal point for engaging the Richmond community with the ecology of riparian ecosystems.

The brick tower is a Grade II listed building which stands adjacent to the entrance bridge to Crane Park Island LNR. It was constructed in the late 18th/early 19th century and can be described as a tapering brick tower in English bond, built like a tower mill, roofed with lead. Until recently it was considered to have been built as a 'shot tower' for making lead shot, and was previously listed as such. Today it has a function as a popular visitor centre with toilet facilities.

3.11 Constraints

Invasive species are a significant constraint to the condition and normal functioning of the riparian habitats, in particular Himalayan balsam, which is prevalent along the riverbanks and reedbeds and has spread into the woodlands at Crane Park. The site is quite enclosed in areas and therefore can attract anti-social behaviour and may feel unsafe for some people. Graffiti vandalism is a particular problem throughout. The scrub habitats are in danger of encroaching too much onto the grasslands, which will threaten the diverse range of wildflowers thriving here.

3.12 Evaluation

The Lower Crane Valley is an irreplacable biological, cultural and social resource not only to the local community but to the region of West London. It is incredibly popular with naturalists, walkers and young people. It functions as a vital green artery within an urban landscape for both people and wildlife and is part of a wider green corridor which links the Tidal Thames with the a number of tributaries reaching out to the home counties.

4.0 Policies

4.1 Strategic Principles for Parks and Open Spaces

The borough has the largest area of public open space per head of population of any London borough. We have a local and national reputation for quality and leadership in the delivery of excellent parks. To ensure the quality of our Parks and Open Spaces remains at a high level, following public consultation, we have developed a series of strategic principles by which parks will be managed.

1. Parks and Open Spaces will be a sustainable legacy for future generations.
2. Parks and Open Spaces will continue to define our borough.
3. Parks and Open Spaces will enrich the life, health and wellbeing of residents and visitors.
4. The Council will lead in the delivery of excellent Parks and Open Spaces services.
5. Parks and Open Spaces will offer positive experiences to all visitors.
6. Through innovation, the future development of Parks and Open Spaces services will be ensured.
7. Increased community participation in Parks and Open Spaces will be encouraged and supported.
8. Parks and Open Spaces will be celebrated as centres of excellence.

All Council owned and managed parks and open spaces are controlled by Public Space Protection Orders (PSPOs). These orders impose various restrictions to dog control and other activities in our parks and open spaces, these can be found here: https://www.richmond.gov.uk/services/parks_and_open_spaces/parks_enforcement_and_legislation#pspo.

4.2 The London Plan

The Mayor for London is responsible for the strategic planning in London. Their duties include producing a 'Spatial Development Strategy' for London - the London Plan. Local (Local Authority level) plans must be in 'general conformity' with the plan. The Intent to publish London Plan https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan, last updated in 2016 and currently being reviewed, recognises "the current and potential value of open space to communities, and to protect the many benefits of open space including those associated with sport and recreation, regeneration, the economy, health, culture, biodiversity, and the environment".

4.3 London Borough of Richmond upon Thames planning strategies

4.3.1 Local Plan

London Borough of Richmond upon Thames' Local Plan, adopted July 2018 and March 2020, (a new Local Plan is being prepared for 2024) recognises the importance of open space in the Borough. The extensive areas of open land create a varied and distinct landscape prominently defined by Richmond Hill and the River Thames valley in addition to Kew Gardens, two Royal Parks and many smaller open spaces and water courses. The importance of open space as an urban structure, providing relief from the built environment, is acknowledged, as is the importance of providing for play and recreation. These collectively contribute to quality of life in the Borough.

The role of ecology and open space's ability to provide a range of habitats is recognised, leading the Borough to protect areas of nature conservation value and to manage and enhance wildlife habitats. The strategy seeks to promote open space as a network of recreational, ecological and landscape assets which both serve the people of the Borough and help enhance and preserve the Borough's physical entity.

4.3.2 London Borough of Richmond Biodiversity Action Plan (BAP)

To conserve Richmond's biodiversity, the decline of valuable species and habitats needs to be reversed. The origination of the Biodiversity Action Plan was one of the agreements resulting from the Rio 1992 Earth Summit (for more information see website https://publications.parliament.uk/pa/cm200102/cmselect/cmenvaud/616/61604.htm) promoting the conservation of biological diversity and the sustainable use of biological resources and to encourage protection.

Richmond's BAP priorities habitats and species that are rare, in decline or characteristic of Richmond, and aims to use them to help raise the profile of biodiversity in the borough. The BAP's strategy is based around protecting and celebrating local wildlife and improving the quality of wildlife habitats and the environment in our borough.

There are currently twenty Biodiversity Action Plans covering selected species and habitats for Richmond; they are listed in Appendix 1. The Council is committed to developing and implementing the objectives enshrined in these plans into their management practices; although these are not all relevant to the Lower Crane Environment. The plans that will have most relevance are: broad leaved woodland, neutral grassland, reedbeds, rivers and streams, hedgerows, water vole, bats, hedgehog, pollinators, song thrush and stag beetle.

4.3.3 London Borough of Richmond upon Thames Nature Conservation Policy

Richmond Council adopted a new Nature Conservation Policy in which the Council recognises the special and diverse wildlife found within its Borough and its' duty to protect and preserve biodiversity. The Policy outlines the ways the Council will achieve this through management of its land, planning obligations and monitoring. The policy can be found in Appendix 3.

4.3.4 London Borough of Richmond upon Thames Tree Policy

Richmond Council has a tree management policy which recognises the benefits of trees and outlines a responsible management approach towards trees within the Borough. This can be found at Appendix 4.

5.0 Site vision and objectives

5.1 Site vision

To conserve, maintain and improve the quality of habitats, whilst improving the visitor experience on site.

5.2 Objectives

In line with the site vision, the following objectives have been developed to cover every aspect of management:

5.2.1. Objective 1: Nature conservation

Maintain and improve the structural diversity of habitats on site to increase biodiversity and ensure key species are in optimum conditions. Identify and enhance potential release sites for key species.

5.2.2 Objective 2: Visitor access and experience

Maintain the pathways and on-site information in such a way as to increase visitor enjoyment whilst retaining the sites importance for biodiversity.

5.2.3 *Objective 3*: *Publicity, communication, and community involvement.*

With support from the Council and Habitats and Heritage (H&H), raise the profile of the River Crane and communicate with the various Friends Groups, residents and interested parties. Ensure volunteering work parties are regularly available and tasks are wide ranging to cater for different abilities. Community volunteer engagement is a core component of the Crane Valley heritage and it is important that this legacy is preserved through future generations.

5.2.4 *Objective 4: Monitoring and management planning*

Monitor the key habitats and species to ensure management action is achieving the site vision.

Review the management regularly and amend work plan as appropriate to ensure the site vision is achieved.

Look ahead to the next management plan period, factoring in potential further enhancements and management objectives.

5.3 Target performance indicators

At the end of the five-year period covered by the Management Plan, success will be measured against the following performance indicators:

5.3.1. Performance Indicator 1: Habitat condition and extent

Upon surpassing the five-year period, the key habitats within the Lower Crane Valley will be in a more favourable condition than they were at the inception of this management plan. The key indicators for each habitat type are listed below:

<u>River</u>

1. Completion of at least 3 more medium to large scale river restoration projects, as outlined in *Section 6.0* of this report and supporting documents such as the *Lower Crane Re-Naturalisation and Enhancement Plan (ZSL, 2023);*

2. Delivery of at least 5 small to medium scale restoration interventions, such as shade reduction and deflector creation along chosen 150-250m sections of river;
3. All existing river restoration and re-naturalisation interventions reinstated or maintained in good condition, such as deflectors, berms and backwaters;
4. A measurably decreased impact of Himalayan balsam and other invasive species in riparian habitats in the Lower Crane Valley. **It is accepted that this target will be dependent on successful partnership working with neighboring boroughs and landowners.*

Woodland

1. An improvement in the structural diversity of woodland throughout the Lower Crane Valley;
2. An increase in diversity of tree stock in woodland, with a decrease in the dominance of non-native species or those vulnerable to disease;
3. Clearly identified emergent canopy trees and future veterans, with appropriate management implemented accordingly.
4. An increase in the volume of woodland microhabitats, in particular standing and fallen deadwood.

Grassland

1. Increased floral species diversity within sward;
2. Decrease in the dominance and prevalence of undesirable species such as creeping thistle, burdock and common nettle;
3. Restoration of meadow areas which have been lost to bramble and scrub encroachment;

Hedgerow

1. 100% of hedgerows are in an appropriate cycle of laying or trimming;
2. Decrease in the dominance and prevalence of non/native or undesirable species in hedgerows such as buddleja and holm oak;
3. All gaps in existing hedgerows are planted-up with native whips, and failing specimens have been replaced;
4. Increase the length of actively managed hedgerow by 25%.

Reedbed

1. Reedbed areas are free of encroaching scrub and undesirable/non-native species as far as possible. Where Himalayan balsam is present, a measurable decrease in abundance is observed;
2. Reedbeds are not impeding the natural flow of the river, i.e. choking the channel;
3. Expand the areas of reedbed habitat in the Lower Crane Valley by approximately 20%.

Scrub

1. An improvement in structural diversity of scrub habitats throughout the Lower Crane Valley;
2. Reduction in the level of encroachment on other habitats, in particular grassland meadows.

Other habitats

All other habitats will be reinstated or maintained in a way that they are functioning to their highest ecological potential and are free of undesirable/invasive species and litter as far as possible.

As an addition, it is recommended that baseline habitat condition assessments using the most up to date version of the DEFRA Biodiversity Metric are carried out to allow for measurable long-term comparisons to be made, extending beyond the period of this five-year plan.

5.3.2. Performance Indicator 2: Access and cleanliness

Upon surpassing of the five-year period, the accessibility and cleanliness of the Lower Crane Valley will have been maintained to a high standard and wherever possible, improved through targeted action. The areas of focus upon which this will be assessed are as follows:

1. Formal pathways and seating areas are kept clear of overhanging or encroaching vegetation throughout the year;
2. Woodchip pathways are appropriately maintained during winter months;
3. Infrastructure and signage is maintained in good condition and repaired/reinstated promptly when required;
4. All areas are kept free of litter. Fly-tipping and graffiti incidents are remediated promptly.

5.3.3. Performance Indicator 3: Community involvement

Upon surpassing of the five-year period, there will be a measurable increase in community involvement in the Lower Crane Valley. There are three areas of focus on which this will be assessed:

1. Numbers of people participating in volunteer events;
2. Number of local community groups with a registered interest in or actively using the site;
3. Use of areas/facilities specifically designated for community involvement, such as outdoor classrooms and community orchards.

6.0 Site management

6.1 Rationale

The following sections detail the bespoke aims, objectives and management prescriptions for each individual site within the Lower Crane Valley. The landscape has been broken down into a series of individually recognised sites which make up the Lower Crane Valley. For the purposes of this Management Plan, the river has also been separated from adjoining terrestrial sites and is broken down into four separate reaches for targeted management. There is also an additional management compartment for the Duke of Northumberland's River.

General management prescriptions which are not site specific and apply to the Lower Crane Valley at a landscape scale are described separately in *Section 7.0*.

Key to terms used within the prescriptions and work programme

AC - Arboriculture Contractor

Appropriate Council Officer - This will be advised when the contract starts

FORCE – Friends of River Crane Environment

FOM&B – Friends of Moormead and Bandy

FOKG – Friends of Kneller Gardens

RGG – Richmond Green Gym

GMC – Grounds Maintenance Contractor

LBRuT – London Borough of Richmond upon Thames

NCC – Nature Conservation Contractor

H&H – Habitats and Heritage

Vols – Volunteers and community groups, encompassing Friends Groups, Richmond Green Gym, The Conservation Volunteers, corporate workdays.

Local volunteers – A dedicated local group looking after a small, specific area.

*Minor trees – Trunks and limbs with a diameter of 10cm or less at 1.3m height off ground (DBH, Diameter at Breast Height)

**Brash piles - No more than 15no cubic meter brash piles to be on site at any one time, all excess to be removed off site, to avoid fire hazards

Little Park

Little Park

1. Overview

Little Park is the northernmost part of Richmond's Crane Park, from Hanworth Road in the south to the borough boundary with Hounslow in the north. Bordered by the River Crane to the west – with Hounslow's Pevensey Road NR on the opposite bank – and by the Mill Stream to the east, the site today is mostly secondary ash and sycamore woodland. Hidden by this succession, however, are mature oak, willow and alder trees and an extensive remnant ditch network which give clues to the site's industrial history and provide opportunities for restoration. A single main path with some informal offshoots runs through the site to a footbridge over the river at the north end.

The shrub layer consists of frequent elder, hawthorn and holly, occasional horse chestnut saplings and rare wild privet and purging buckthorn. Ground flora in the woodland is poor, with ivy, common nettle, cow parsley and bramble the main species, with occasional hedge woundwort and wood avens. In wetter areas, stands of remote sedge remain. Himalayan balsam does dominate a significant area along the river but also permeating throughout the woodland west of the footpath.

A new wet woodland glade was created in 2023 and 200m of remnant ditch restored to create a wetland refuge, newly reconnected to the main river.

Features of interest
Footbridge
Riverside viewpoint
Remnant ditches
Wet woodland glade
Former water vole colony

Ref.	Habitat
A	Riverbank with marginals and scrub
B	Wooded riverbank
C	Ditch network
D	Broadleaved woodland
E	Broadleaved woodland
F	Broadleaved woodland

2. Management aims and vision

The management focus for Little Park will be:

a) To maintain and enhance the wet woodland and ditch habitat in the glade

b) To improve the long-term future of the woodland by favouring appropriate species and diversifying the understorey

c) To eliminate invasive non-native plants from Little Park

d) To improve the visitor experience in Crane Park by upgrading the existing path route, increasing opportunities to view the river and interpreting the site's history and management.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Removal of invasive non-native plant species – NCC/invasive weed contractor/volunteers

Eliminate Himalayan balsam and giant hogweed from the site to improve the success in restoring native vegetation; prioritise recently restored habitats and the river channel.

1. Where there are dense stands of only Himalayan balsam, cut these low to the ground with a brushcutter before seeding.
2. Where Himalayan balsam is mixed with other species, hand pull these stems, ensuring roots are removed wherever possible; cut stems do regenerate within the same season.
3. Treat giant hogweed according to the Council's current contract.
4. Monitor monthly for new invasive plants between March and September and programme as required.

Prescription 2: Riverbank management – NCC/Vols

Create a mosaic of marginal vegetation, grassland, bramble scrub and short rotation coppice with occasional wetland trees.

Compartment A

Little Park

1. Maintain the reduced shading within this compartment by re-pollarding and re-coppicing the riverside trees. Leave all large wood (>10cm) either on the bank top or bank face; whole fallen trees can be left - if they protrude slightly into the river they should be staked on the bank top.
2. On a patchwork basis, cut back areas of brambles and nettles and coppice scrub, ensuring that the marginals and grassland are not encroached upon.
3. Plant a small number of riverbank trees where they will not impact the marginal, grassland and in-channel habitats – alder, alder buckthorn, purging buckthorn, hawthorn, native black poplar and willows other than crack.
4. Consider creating small pond or scrape features in the ends of the remnant ditches near the main river.

Compartment B

1. Thin sycamore and ash from the riverbank by 25%, taking 5% each year, to reduce shading and create a more open bank.
2. On a patchwork basis, cut back areas of brambles and nettles and coppice scrub.
3. Plant a small number of riverbank trees where they will not impact the marginal, grassland and in-channel habitats – alder, alder buckthorn, purging buckthorn, hawthorn, native black poplar and willows (excluding crack willow).

Prescription 3: Glade management – NCC/Vols

Maintain the restored ditches and floral diversity within the glade.

1. Remove encroaching bramble and nettle at least twice annually to ensure the marginals, grassland and young trees are retained.
2. Seed or plug plant any bare areas with appropriate species mix.
3. Re-pollard the retained trees on rotation if shading becomes an issue.
4. Once the main glade is in good condition, extend the glade along the cross-ditch to the north.
5. Monitor flood frequency of the glade and adjust ditch connection depth if required, in agreement with Environment Agency.

Prescription 4: Woodland management – NCC/Vols

Diversify the structure and species composition of the woodland using tradition conservation management practices. Where possible, implementation of thinning and coppicing prescriptions should be spread out evenly over the 5-year management plan period. Stack most arisings to be on site as deadwood habitat but chip a portion for the path.

Compartment D & E

1. In compartment D, thin semi-mature sycamore and ash showing signs of dieback by approximately 25%, taking 5% per year. Prioritise removing trees from within the remnant ditch channels.
2. In compartment E, thin semi-mature sycamore and ash by 10% over the course of the plan.
3. Remove ash, horse-chestnut and sycamore regeneration, prioritising the remnant ditch channels.
4. Following thinning, underplant the channel ridges with hazel, disease-resistant elm, wild privet and hawthorn, with alder, alder buckthorn, downy birch and purging buckthorn in more open areas. Include occasional willows other than crack.
5. Thin 20% of holly.
6. Away from the path, ring-bark approximately 5% of early-mature sycamore trees to create future standing deadwood habitat.

Compartment F

1. Manage this compartment as low-intervention, undertaking works only for safety.

Objective 2: Visitor access and experience

Prescription 5: Improve access and views of the river
NCC/FORCE

Little Park

Improve the existing footpath through the woodland rather than create a new route. Consider how to improve views of the river.

1. Agree route with FORCE. Amend path route as needed to simplify bends and avoid any key features.
2. Remove any trees constraining the path along its route.
3. Install ditch crossings (based on the trial pipe design) along the existing route.
4. Woodchip the woodland path each spring following tree management works.
5. Cut back bramble and other pathside vegetation along the path at least twice each summer to maintain comfortable access.
6. At the main riverside viewing point, improve access to the riverbank with a ditch crossing.
7. Add an eco-friendly preservative to the footbridge at appropriate intervals.
8. Consider further viewpoints or access points, one each in *Compartments D* and *E* where the path is close to the river - taking into account further site enhancement works and water vole habitat.

Prescription 6: Improve site information – LBRuT/FORCE

Improve on-site and on-line information about the site's restoration and management.

1. Install one or two interpretation panels about the site and the river restoration.
2. Improve the site's webpage to include more details of the site's management and restoration.

Objective 3: Publicity, communication, and community involvement.

Prescription 7: Work in partnership with LB Hounslow

Maintain communication with LBH and Greenspace 360.

1. Maintain contact with LBH and Greenspace 360 to ensure the strategic management of Little Park and Pevensey Road NR remains in concert.

Little Park

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Removal of invasive non-native plant species	**1**	All	All	All	All	All	Mar – Sep	**NCC/Vols**	Brushcut stands of only Himalayan balsam. Hand pull where mixed with other species. Treat giant hogweed with herbicide.	Areas may need more than one treatment annually.
P2: Riverbank management	**1**	A	A	A	A	A	Oct – Mar	**NCC/Vols**	Maintain the reduced shading within this compartment by re-pollarding and re-coppicing the riverside trees Cut back bramble and other suckers/leaders from the grassland and remove the stumps	Avoid bird nesting when cutting bramble and scrub.
P3: Glade management	**1**	C	C	C	C	C	Mar & Sep (1 & 2) Sep – Feb (3 &4)	**NCC/Vols**	Remove encroaching bramble and nettle at least twice annually. Seed or plug plant any bare areas. Re-pollard trees and manage woodland edge as needed to manage shading. Extend glade along cross-ditch to the north.	
P4: Woodland management	**1**	D, E	D,E	D,E	D,E	D,E	Oct – Mar	**NCC/Vols**	Thin semi-mature sycamore and ash showing signs of dieback; Remove ash, horse-chestnut and sycamore regeneration; Thin or coppice 5% of holly each year; Ring bark 5% of retained early-mature sycamore trees to create future standing deadwood habitat; Underplant woodland in *Compartments D* and *E* with appropriate species as agreed with LBRuT Ecology Officer.	Consider potential impacts to wildlife including nesting birds, roosting bats, and badgers.

Little Park

P5: Improve access and views of the river	**1**	D, E	D,E	D,E	D,E	D,E	Oct – Mar (2) Apr – Sep (3-7)	**NCC/FORCE**	Work closely with FORCE to agree route and viewpoints. Remove trees constraining the path. Install ditch crossings along the existing route and at riverside viewing point. Woodchip the woodland path annually. Cut back pathside vegetation during summer.	
P6: Improve site information	**2**						All year	**LBRuT/ FORCE**	Install interpretation panel. Improve information available on-line.	
P7: Work in partnership with LB Hounslow	**2**						All year	**LBRuT/ FORCE**	Maintain regular contact.	

Crane Park


N
S
Outdoor classroom
Brick tower
Ellerman Island
J
D
H
D
F
G
E
E
C
C
C
D
K
C
A
B

Crane Park

1. Overview

The semi-natural deciduous woodland at Crane Park is relatively undisturbed with numerous fallen trees and branches and areas of dense scrub and undergrowth. The range of tree ages is good and there are saplings, mature and veteran trees present. There are trees with areas of deadwood and holes good for bat roosts and hole nesting birds such as nuthatch and titmice. The most common trees are sycamore, ash, horse chestnut, pendunculate oak and hawthorn. Occasional English elm, alder, grey poplar, purging buckthorn and elder are also present, and each parcel of woodland has its own distinguishable characteristics, particularly in the composition of the understory, such as the field maple in *Compartment F*, hornbeam in *C* and, notably, wych elm in *G*.

The field layer is dominated by common tall herbs including nettle, cow parsley, cocks' foot and false-oat grass with large areas of bramble. Other species present include a mixture of shade tolerant and woodland plants such as ground elder, ground ivy, wood avens and upright hedge parsley with grassland and open ground species such as creeping thistle, creeping buttercup, greater plantain and dock species.

There are two primary meadow areas within Crane Park, the first of which *(Compartment A)* is adjacent to the west of Chertsey Road and is managed for wildflower diversity, with a regular occurrence of the semi-parasitic plant red-bartsia, which suppresses the growth of dominant coarse grasses providing opportunities for less vigorous species and a greater diversity of wildflowers to establish. Other floral species of note include lady's bedstraw, yarrow, wild marjoram, red poppy, white campion and hoary mustard. The second meadow area is Crane Park Meadow *(Compartment E)*, one of the most heavily used areas in Crane Park, located adjacent to the iconic brick tower (See *Section 3.5).* This meadow is managed on an amenity cutting cycle and is used as a picnic/recreational area.

Features of interest
FORCE dragonfly bench
FORCE oak bench
Future veteran trees
Brick tower
Ellerman Avenue Island
Outdoor classroom
Nesting sparrowhawk
Native black poplars
Wild service tree
Earth blast mounds from gunpowder works
Black poplar and wild servicetrees

Ref.	**Habitat**
A	Grassland meadow
B	Bramble scrub
C	Broadleaved woodland
D	Mixed scrub and woodland
E	Amenity grassland meadow
F	Broadleaved woodland
G	Broadleaved woodland
H	Broadleaved woodland
I	Mixed scrub and woodland
J	Orchard area
K	Woodland glade

2. Management aims and vision

The management focus for Crane Park will be as follows:

a) To secure the long-term future of the woodland by diversifying the understory and the next generation of dominant trees, in a way that seeks to further define the uniquity and individual character of each of the various woodland parcels within Crane Park;

b) To improve the floral diversity and overall condition of the meadow *(Compartment A)*, reducing the dominance of undesirable species and pernicious weeds;

c) To develop a varied, mosaic structure of scrub throughout Crane Park with an increased number of scalloped edges and glades which provide ecological niches for invertebrates, birds, small mammals and reptiles;

d) To improve the visitor experience in Crane Park, utilising the spaces available as an outdoor education hub for the Richmond

Crane Park

e) Community, in particular via restoration of the Hanworth Road outdoor classroom and orchard area.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Meadow management – NCC

Improve the floral diversity and overall condition of the wildlife meadow *Compartment A*, reducing the dominance of undesirable species.

1. Take a hay cut biannually, achieving a sward height of 10-15cm and leaving 10% uncut. Any cuttings should be removed off site, however a small proportion can be used to create a hibernaculum in woodland/scrub edge areas. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.
2. Cut dense patches of undesirable species such as burdock and hogweed in mid-summer as appropriate, prior to seed dispersal.

Prescription 2: Clearance of encroaching bramble – NCC/Vols

Extend and conserve the wildlife meadow *Compartment A*, by removing the encroaching bramble.

1. Cut back bramble and other suckers/leaders from the grassland and remove the stumps.
2. Scallop the edges of bramble scrub in *Compartment B* every 2 years to improve the structure of edge habitats around the meadow.

Prescription 3: Woodland management – NCC

Diversify the structure and species composition of the woodland utilising traditional conservation management practices. Where possible, implementation of thinning and coppicing prescriptions should be spread out evenly over the 5-year management plan period. All arisings to be cut and stacked on site as deadwood habitat.

Compartment C:

1. Thin semi-mature sycamore and ash showing signs of dieback by approximately 25%, taking 5% per year.
2. Remove ash, horse-chestnut and sycamore regeneration.
3. Remove non-natives such as turkey oak, Norway maple and false acacia where they occur.
4. Halo-thin around dominant oaks.
5. Following thinning, underplant with suitable canopy and understory trees such as alder, hornbeam, small-leaved lime, disease-resistant elm, field maple, hazel, aspen and wild service tree.
6. Manage hazel and field maple on a 7-year rotational coppice cycle.
7. Thin 10% of holly.
8. Ring-bark approximately 5% of early-mature sycamore trees to create future standing deadwood habitat.

Compartment F:

1. Coppice understory trees on a 7-year rotational cycle.
2. Ring-bark approximately 5% of early-mature sycamore trees to create future standing deadwood habitat.

Compartment G:

1. Remove ash, horse-chestnut and sycamore regeneration.
2. Remove non-natives where they occur.
3. Coppice 10% of holly each year.
4. Following thinning, underplant with hornbeam and hazel.
5. Ring-bark approximately 5% of early-mature sycamore trees to create future standing deadwood habitat.

Compartment H:

1. Thin semi-mature sycamore and ash showing signs of dieback by approximately 25% taking 5% per year.
2. Remove non-natives where they occur.
3. Following thinning, underplant with alder, disease-resistant elm, field maple and hazel.

Crane Park

4. Ring-bark approximately 5% of early-mature sycamore trees to create future standing deadwood habitat.

Prescription 4: Glade creation and management – NCC/Vols
Establish a series of glades within woodland edge areas, which are currently dominated by brambles and nettles.

1. Scallop edges of bramble scrub in *Compartment D* by approximately 2-3m depth along the northern edge of the footpath.
2. Create three new glades within *Compartment D* in areas of dense bramble or ruderal vegetation cover.
3. Within newly created glades and existing glade *(Compartment K)*, manage bramble and ruderal species regrowth intensively during first two growing seasons, removing arisings and bramble stumps.

Prescription 5: Establishment of community orchard – NCC/Vols

Continue the establishment of *Compartment J* as an accessible community space for fruit and nut harvesting.

1. Extend the clearing to the east and establish a dead-hedge boundary.
2. Diversify the stock of fruit trees through additional planting.
3. Undertake regular management of brambles and ruderal regrowth as necessary. Non-woody arisings can be used to create a compost heap in the corner of the site.
4. Manage hazel on a 7-year rotational coppice cycle.

Prescription 6: Management of Ellerman Avenue Island – Local volunteers/FORCE

Establish Ellerman Avenue Island (a small island of planted shrubbery and wildflowers at one of the site's northern entrances off of Ellerman Avenue) as a notable entrance feature to Crane Park.

1. Weed island once per-month throughout summer growing period, removing burdock seedheads when they appear.
2. Prune *wayfaring tree* shrubs during autumn months to encourage dense, bushy growth.

Prescription 7: Wetland creation – LBRuT/NCC/FORCE

Explore options for creation of new ponds or wetland within Crane Park, seeking external funding where necessary to deliver installation.

1. Undertake a feasibility study to establish potential locations for new ponds or wetland within Crane Park.

Objective 2: Visitor access and experience

Prescription 8: Orchard trail – NCC

Create a trail through the community orchard *(Compartment J)* to facilitate access and encourage use and enjoyment of the area.

1. Install a woodchip trail through the orchard to improve access.

Prescription 9: Restoration of Hanworth Road classroom – GMC

Restore the Hanworth Road classroom area and encourage continued use and enjoyment of the area.

1. Repair damage to seating area and inspect regularly for future maintenance requirements.
2. Top-up ground with wood chip during the winter months as necessary.
3. Ensure that the areas around the classroom are kept free of weeds and encroaching brambles.

Crane Park

Objective 3: Publicity, communication, and community involvement.

Prescription 10: Definition and naming of woodlands – FORCE, LBRuT

With a view to improving visitor experience and engagement, consider naming individual woodland parcels throughout Crane Park to celebrate the cultural heritage of the site, and further define each area's individual character.

1. Study in more detail the history of Crane Park and the existing features of heritage, such as veteran trees, earth works and structures within the woodlands to inspire appropriate naming of woodland areas.

Crane Park

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Meadow management	**1**	A	A	A	A	A	Mar - Oct	**NCC**	Carry out a biannual hay cut, leaving 10% uncut and removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs and reptiles.
P2: Clearance of encroaching bramble	**1**	A, B	A	A, B	A	A, B	Oct - Mar	**NCC/Vols**	Cut back bramble and other suckers/leaders from the grassland and remove the stumps. Scallop the edges of bramble scrub in *Compartment B* every 2 years to improve the structure of edge habitats around the meadow.	Avoid bird nesting
P3: Woodland management	**1**	C, F, G, H	C, F, G, H	C, F, G, H	C, F, G, H	C, F, G, H	Oct - Mar	**NCC**	Thin semi-mature sycamore and ash showing signs of dieback; Halo thin around dominant oaks; Remove non-natives such as turkey oak and Norway maple; Remove ash, horse-chestnut and sycamore regeneration; Thin or coppice 10% of holly each year; Rotational coppice of hazel and field maple; Ring bark 5% of retained early-mature sycamore trees to create future standing deadwood habitat; Underplant woodland in *Compartments C, F* and *H* with appropriate species as agreed with LBRuT Ecology Officer.	Consider potential impacts to wildlife including nesting birds, roosting bats, and badgers.

Crane Park

P4: Glade creation and management	**1**	D, K	D, K	D, K	D, K	D, K	Oct – Mar (1&2) Apr – Sep (3 &4)	**NCC/Vols**	Scallop edges of bramble scrub by approximately 2-3m depth; Create three new glades within northern bramble scrub areas. Manage bramble and ruderal species regrowth intensively during first two growing seasons, removing arisings and bramble stumps.	Avoid bird nesting and badgers setts
P5: Establishment of community orchard	**1**	J	J	J	J	J	Oct – Mar (1,2 & 4) Apr – Sep (3)	**NCC/Vols**	Extend and maintain the clearing, keeping it free of brambles and ruderal vegetation. Create a dead hedge along the eastern boundary; Diversify fruit tree stock within the orchard.	Encourage community involvement in managing the orchard
P6: Management of Ellerman Avenue Island	**1**	C	C	C	C	C	Apr – Sep (1) Oct – Dec (2)	**FORCE**	Weed island once per-month throughout summer growing period, removing burdock seedheads when they appear. Prune *wayfaring tree* shrubs during autumn months to encourage dense, bushy growth.	
P7: Wetland creation	**2**	All	All	All	All	All	Apr- Sep	**LBRuT/NCC/ FORCE**	Undertake a feasibility study to establish potential locations for new ponds or wetland within Crane Park.	
P8: Orchard trail	**1**	J	J	J	J	J	Oct - Mar	**NCC**	Install a woodchip trail through the orchard to improve access.	

Crane Park

P9: Restoration of Hanworth Road classroom	**1**	I	I	I	I	I	All year	**GMC**	Repair damage to seating area and inspect regularly for future maintenance requirements.Top-up ground with wood chip during the winter months as necessary. Ensure that the areas around the classroom are kept free of weeds and encroaching brambles.	
P10: Definition and naming of woodlands	**3**	C, F, G, H	C, F, G, H	C, F, G, H	C, F, G, H	C, F, G, H	N/A	**FORCE/ LBRuT**	Study in more detail the history of Crane Park and the existing features of heritage, such as veteran trees, earth works and structures within the woodlands to inspire appropriate naming of woodland areas.	

Crane Park Island Local Nature Reserve

1. **Overview**

   Crane Park Island is a Local Nature Reserve surrounded by the river in Crane Park, characterised by a mosaic of woodland, scrub, ditches, ponds and reedbed that has developed following the cessation of industrial activity in the area in the mid-20th century. The island is rich in biodiversity and is home to a number of rare species including water vole and water rail. It is used as an educational hub by London Wildlife Trust who manage the reserve and acts as an extremely successful focal point for engaging the Richmond community with the ecology of riparian ecosystems.

2. **Management aims and vision**

   This site is managed by London Wildlife Trust, who work to a bespoke management plan for the site, independently from LBRuT. Riverside willow and osier are regularly coppiced, reedbeds are cut on rotation, and invasive species management is undertaken regularly.

Features of interest
Reedbed
Water vole population
Water rail
Ponds

Hospital Bridge Meadow

1. Overview

The Hospital Bridge Meadow is a triangular wildflower meadow approximately 0.6 Ha in size on the northern bank of the River Crane. It lies in between the junction of Chertsey Road and Hospital Bridge Road. It has historically been sown with a cultivated/ornamental annual wildflower mix but has since been established as a native wildflower meadow which is rich in native species, including yarrow, wild sage, greater knapweed, yellow rattle, lady's bedstraw, black medick, wild marjoram, field scabious, tansy, meadow barley, meadow cranesbill and common toadflax. The meadow is however blighted by the prevalence of species undesirable and invasive in wildflower meadows such as creeping thistle, common nettle and burdock, which in places have formed a localised monoculture.

A number of boundary trees exist around the boundaries, including Lombardy poplar, hornbeam, narrow-leaved ash, lime and box elder.

Features of interest
Diverse wildflower sward

Ref.	Habitat
A	Grassland meadow

2. Management aims and vision

The overarching aim of management will be to enhance the condition of the species-rich grassland. This will primarily be achieved through intensive tackling of the dominant undesirable species. It is also proposed to plant a hedgerow around the site boundary.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Meadow management – NCC

Improve the floral diversity and overall condition of the wildlife meadow.

1. Take a hay cut **annually**, achieving a sward height of 10-15cm. Any cuttings should be removed off site. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.

Prescription 2: Remove undesirable species – NCC

Reduce the dominance of undesirable species.

1. Hand-pull common nettle and creeping thistle patches during early summer before the plants flower.
2. Cut off burdock flowers to prevent seed spreading.
3. Remove all arisings from site.

Hospital Bridge Meadow

Prescription 3: Native hedge planting – NCC/Vols

Plant approximately 100m of native hedgerow along the eastern and north-western boundaries of the site. The hedgerow will continue to be traditionally managed by laying with stakes and binders, however it is not likely to require laying or re-laying within the time-frame of this management plan.

1. Plant whips of native species such as hawthorn, field maple, hazel, guelder rose, dogwood, hornbeam, wayfaring tree and blackthorn. Species will be chosen by LBRuT in agreement with FORCE. If appropriate the ground will need to be prepared and dug over.
2. Monitor hedge annually. Replace any failed whips during the autumn or winter.

Hospital Bridge Meadow

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Meadow management	**1**	A	A	A	A	A	Sep – Oct	**NCC**	Annual hay cut of meadow to be undertaken during the autumn, removing arisings from site.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs and reptiles.
P2: Remove undesirable species	**1**	A	A	A	A	A	Jun – Jul (1) Jul – Oct (2)	**NCC**	Hand-pull creeping thistle and common nettle during early summer, cut off burdock flowers between July and October.	Remove arisings from site.
P3: Native hedge planting	**1**	A	A	A			Oct - Mar	**NCC/Vols**	Plant whips of native species to on eastern and north-western boundaries of site.	Species to be chosen by LBRuT Ecology Officer in agreement with FORCE.

Willow Way

1. Overview

Willow Way is a small mosaic of grassland, scrub and riparian woodland, located in the junction between Chertsey Road and Hospital Bridge Road. A hedgerow is present along the southern boundary of the site adjacent to the grassland meadow. The woodland has a fairly open canopy across most of the site, consisting primarily of white poplar, ash and sycamore, with occasional oak, common alder and Italian alder. Areas directly adjacent to the riverbank are dominated by crack-willow scrub.

There is a grassland meadow of a moderately species-rich sward approximately 0.06 Ha in size adjacent to the eastern entrance to the site, with a species-rich hedgerow along the southern boundary (dogwood, guelder rose, hawthorn, spindle, blackthorn, field maple, wild privet and rose). To the west of the meadow extends an area of dense bramble scrub of similar size, which eventually graduates into mature woodland towards the western entrance to the site on Chertsey Road.

Features of interest at this site include the FORCE egret bench, a riverbank viewing area, and an overflow ditch in the woodland running parallel to Chertsey Road.

Features of interest
FORCE egret bench
Future veteran oak trees
Riverbank viewing area
Overflow ditch

Ref.	Habitat
A	Grassland meadow
B	Bramble scrub
C	Native mixed hedgerow
D	Bramble scrub
E	Woodland
F	Willow scrub
G	Woodland

2. Management aims and vision

Enhancement of the grassland meadow, which has a high density of undesirable species including burdock, horseradish and encroaching bramble, forms the primary focus of management at this site.

Woodland management prescriptions have also been included to improve structure and diversity in the long-term, and support the development of the dominant trees, with a focus on identification of possible future veterans.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Meadow management – NCC

Improve the floral diversity and overall condition of the wildlife meadow *(A)*, reducing the dominance of undesirable species.

1. Take a hay cut biannually, achieving a sward height of 10-15cm. Any cuttings should be removed off site, however a small proportion can be used to create a hibernaculum in woodland/scrub edge areas. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.
2. Cut or dig-out dense patches of undesirable species such as burdock and horseradish in mid-summer as appropriate, prior to seed dispersal.

Prescription 2: Clearance of encroaching bramble – NCC/Vols

Extend and conserve the wildlife meadow *(Compartment A)*, by removing the encroaching bramble.

1. Cut back bramble and other suckers/leaders from the grassland and remove the stumps.
2. Mow bramble in *Compartments B and D* to extend the wildflower meadow *(A)*. Remove remaining stumps following cutting to prevent regrowth.

Prescription 3: Hedgerow management – NCC/Vols

Manage the hedgerow *(C)* on site to establish dense, bushy lateral growth.

1. Flail boundary hedgerow to a height of 2m, once every 2 years.

Prescription 4: Woodland management – NCC

Diversify the structure and species composition of the woodland utilising traditional conservation management practices. All arisings to be cut and stacked on site as deadwood habitat.

1. Plant the woodland understory with suitable riparian species where appropriate in *Compartment E*, such as alder and willow, with a view to the succession of future canopy trees.
2. Halo-thin sycamore around mature oaks in *Compartment G*.

Prescription 5: Installation and maintenance of bat and bird boxes – FORCE

Additional bat and bird boxes will be installed to increase roosting and nesting opportunities on site. Boxes must be maintained in good condition to ensure their longevity and availability for continued use. An ecologist holding a Natural England Bat Survey Licence to disturb bats must be consulted prior to bat box maintenance.

Installation

1. Install a minimum of two bat and two bird (suitable for nuthatch and treecreeper) boxes on site on appropriately located mature trees or buildings.
2. Bat boxes should be hung at approximately 4m height, away from any low hanging branches or obstructions, at a south-westerly through to south-easterly aspect.
3. Bird boxes should be hung between 3 and 5m high on a tree or building, with a clear flight path away from disturbance. The entrance to the box should face away from prevailing weather conditions.

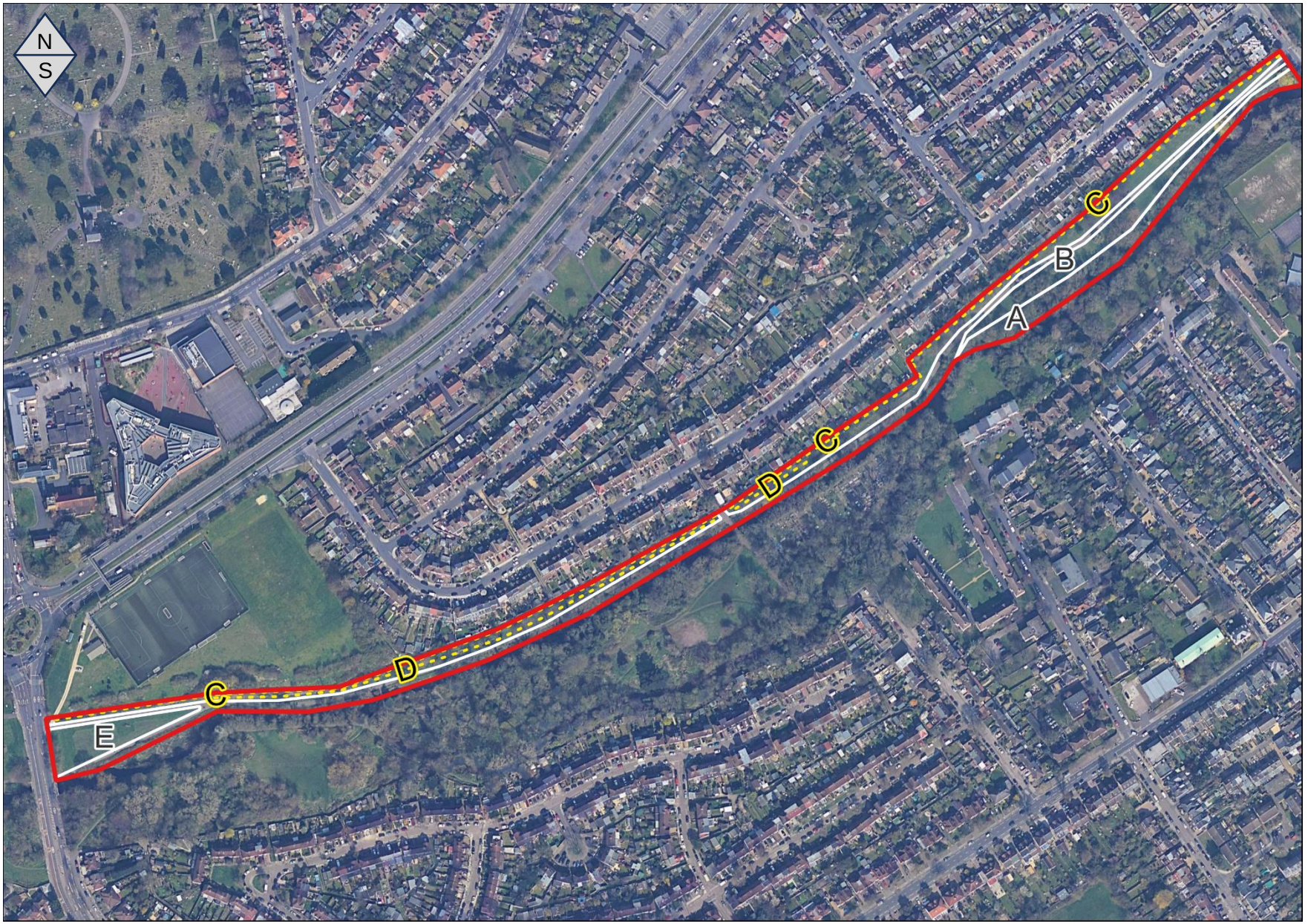
Annual maintenance:

1. Ensure box is still hung securely.
2. Adjust fixings as appropriate, check box for any damage.
3. Clean out old nest material/droppings and debris.

Willow Way

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Meadow management	**1**	A	A	A	A	A	Mar - Oct	**NCC**	Carry out a biannual hay cut, removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs and reptiles.
P2: Clearance of encroaching bramble	**1**	A, B, D	A	A	A	A	Oct - Feb	**NCC/Vols**	Cut back bramble and other suckers/leaders from the grassland and remove the stumps. Mow bramble to extend the wildflower meadow. Remove remaining stumps following cutting to prevent regrowth.	Avoid bird nesting
P3: Hedgerow management	**1**	C	C	C	C	C	Oct - Feb	**NCC/Vols**	Flail hedgerow top to maintain at a height of 2m.	Avoid bird nesting
P4: Woodland management	**1**	G, E	G, E				Oct - Feb	**NCC**	Plant the woodland understory with suitable riparian species such as alder and willow. Halo-thin sycamore around mature oaks in woodland at the western end of the site.	Avoid bird nesting
P5: Installation and maintenance of bat and bird boxes	**2**	All	All	All	All	All	October	**FORCE**	Install in first year. Check condition of boxes annually, adjust fixings as appropriate, clean out boxes.	Licenced bat ecologist required. Consult appropriate Council Officer

Hospital Bridge Road to Meadway



Hospital Bridge Road to Meadway

1. Overview

This narrow linear section of park includes areas of grassland, wetland, reed beds and a native hedge planted with fruit trees. A tarmacked footpath runs parallel to the river bordered by the riverbank to the south, with amenity grass and mature trees to the north, including a copse of lime towards the Meadway end.

The Lincoln Field wildflower meadow *(Compartment E)* is situated to the westerly end adjacent to the Hospital Bridge Road entrance. A linear sustainable urban drainage scheme (SUDS) channel is present along much of the northern edge of the site, running from the eastern end of Lincoln Field downstream to just beyond the Mill Road footbridge. This channel consists of marshy habitat and wetland vegetation, and functions equally as a valuable habitat enhancement.

The areas to the south of the river on this reach are described separately in this management plan as Mill Road and Fulwell Park Meadow in the following sections below.

Features of interest
FORCE Robin bench
FORCE kingfisher bench
Traditionally laid hedgerow
SUDS ditch

Ref.	Habitat
A	Broadleaved woodland
B	Amenity grassland
C	Native mixed hedgerow
D	Marshy ditch (SUDS)
E	Grassland meadow

2. Management aims and vision

This section of the Lower Crane has an important function as a wildlife corridor, and therefore management of this area aims to maintain and enhance the linear terrestrial habitat. Hedgerows and dead hedging will be managed to ensure longevity, whilst the meadow and SUDS channel will be kept free of encroaching scrub and undesirable species.

3. Prescription

Objective 1: Nature conservation

Prescription 1: Meadow management – NCC

Improve the floral diversity and overall condition of Lincoln Field *(E)*, reducing the dominance of undesirable species.

1. Take a hay cut biannually, achieving a sward height of 10-15cm. Any cuttings should be removed off site, however a small proportion can be used to top up dead hedges. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.
2. Cut dense patches of undesirable species such as burdock prior to seed dispersal.

Prescription 2: Hedgerow management – NCC/Vols

Manage the hedgerow *(C)* on site using traditional methods to establish dense, bushy lateral and vertical growth.

1. Lay hedgerow along northern boundary, laying approximately 20% in each year. Hedgerows should not be laid unless exceeding a minimum of 2m height. There are sections of the hedgerow of varying age, and therefore a pre-commencement visual inspection should be undertaken in the late summer/early autumn to determine the most appropriate section to be laid each year.
   **Utilise arisings from hazel coppicing and willow pollarding to supply poles and binders for hedge laying.*

Hospital Bridge Road to Meadway

2. Maintain the dead hedge which fills the small gaps in the hedgerow along the northern boundary as required, with off-cuts from on-site maintenance works.

Prescription 3: SUDS channel management – NCC

Maintain the SUDS channel *(D)* as both a functional flood alleviation mechanism and an ecological habitat.

1. Keep the channel clear of encroachment from undesirable species such as bramble, creeping thistle and burdock as necessary.
2. Carry out maintenance as required of post and wire fencing which surrounds the western sections of the SUDS channel.

Hospital Bridge Road to Meadway

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Meadow management	**1**	E	E	E	E	E	Mar - Oct	**NCC**	Carry out a biannual hay cut, removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs and reptiles.
P2: Hedgerow management	**1**	C	C	C	C	C	Oct - Feb	**NCC/Vols**	Lay approximately 20% in each year. Maintain the dead hedge with off-cuts from on-site maintenance works.	Avoid bird nesting. Hedgerows should not be laid unless exceeding a minimum of 2m height.
P3: SUDS channel management	**1**	D	D	D	D	D	All year	**NCC**	Keep channel clear of encroachment from undesirable species. Maintain post and wire fence as required.	

Fulwell Meadow

1. Overview

Fulwell Meadow lies to the east of Hospital Bridge Road, on the southern bank of the River Crane. The site as described in this management plan includes the meadow (A) and the surrounding woodland, scrub and tall-herb/ruderal habitats.

The meadow is approximately 0.2 Ha in size and is dominated by perennial rye grass and meadowsweet. Red-bartsia is also well established, which suppresses the growth of the coarse grasses in the meadow such as Yorkshire fog and timothy, which would likely otherwise be dominant.

The woodland habitat to the west and south of the meadow is diverse with a range of tree species including ash, white poplar and oak in the canopy, and an understory of hazel, horsechestnut, elder, field maple, field elm and bramble. Scrub habitats to the east consist of crack willow and bramble.

Features of interest
FORCE bench
Native black poplars

Ref.	Habitat
A	Grassland meadow
B	Woodland and scrub
C	Willow scrub

2. Management aims and vision

The primary aim of management at Fulwell Meadow is to enhance the condition of the grassland and increase species diversity. Opportunities for the creation of a new pond or standing water body will also be explored.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Meadow management – NCC

Improve the floral diversity and overall condition of Fulwell Meadow.

1. Take a hay cut biannually, achieving a sward height of 10-15cm and leaving 10% uncut. Any cuttings should be removed off site, however

Fulwell Meadow

a small proportion can be used to create habitat features on site. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.

2. Create 2 small turf scrapes (approx. 50m^2) and sow a native neutral grassland wildflower seed mixture. Seed should be sown by hand and trodden in firmly. Where appropriate, plug-plants may also be used to augment wildflower establishment.

Prescription 2: Clearance of encroaching bramble – NCC/Vols

Extend and conserve the wildlife meadow by removing the encroaching bramble.

1. Cut back bramble and other suckers/leaders from the grassland and remove the stumps.

Prescription 3: Scrub management – NCC

Establish a series of glades within woodland edge areas, which are currently dominated by brambles and nettles.

1. Scallop edges of willow and bramble scrub on edges of grassland by approximately 2-3m depth.
2. Within scalloped areas, manage bramble and ruderal species regrowth intensively during first two growing seasons, removing arisings and bramble stumps.
3. In subsequent years, manage glades on a biannual cut and lift cycle as grasses and wildflowers begin to establish.

Prescription 4: Woodland management – NCC/Vols

Remove non-native species from woodland understory and extend the area of hazel coppice.

1. Remove non-native understory trees such as false acacia.
2. Manage hazel understory on a seven-year coppice cycle.

Fulwell Meadow

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Meadow management	**1**	A	A	A	A	A	Mar - Oct	**NCC**	Carry out a biannual hay cut, leaving 10% uncut and removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs and reptiles.
P2: Clearance of encroaching bramble	**1**	A	A	A	A	A	Oct - Feb	**NCC/Vols**	Cut back bramble and other suckers/leaders from the grassland and remove the stumps.	Avoid bird nesting
P3: Scrub management	**1**	B, C	B, C	B, C	B, C	B, C	Oct - Feb	**NCC**	Scallop edges of willow and bramble scrub on edges of grassland by approximately 2-3m depth. Within scalloped areas, manage bramble and ruderal species regrowth intensively during first two growing seasons, removing arisings and bramble stumps. In subsequent years, manage glades on a biannual cut and lift cycle as grasses and wildflowers begin to establish.	Avoid bird nesting and badgers setts
P4: Woodland management		B	B	B	B	B	Oct - Feb	**NCC/Vols**	Remove non-native understory trees such as false acacia. Manage hazel understory on a seven-year coppice cycle.	

Mill Road

1. Overview

The site known as Mill Road is a unique and attractive mosaic of habitats which sits upon an island in between two branches of the River Crane, accessed by a bridge adjoining Mill Road in Twickenham. It consists of a meadow approximately 0.45 Ha in size, woodland, scrub and an allotment. Additional features of interest include an insect bank, the FORCE shire horse and stag beetle benches and a veteran pear tree.

The woodland is mature but sparse and open, with large alder, hybrid poplar, ash and willow dominating. The understory consists of shrubs such as elder and dense bramble, and the ground flora is dominated by tall herbs such as common nettle.

The most abundant floral species in the meadow are false-oat grass, perennial rye grass, wall barley, cock's foot grass, tansy, field mustard, ragwort, yarrow, ribwort plantain, common knapweed and black horehound. The meadow is bordered by ash and sycamore trees along the riverbanks.

Three nationally rare invertebrates, Rambur's pied shieldbug *(Tritomegas sexmaculatus), Raglius albracuminatus* and *Chrysolina banksii* feed on the black horehound around the edges of this meadow.

Features of interest
FORCE shire horse bench
Insect bank
Black horehound and associated rare invertebrates

Ref.	Habitat
A	Grassland meadow
B	Woodland and scrub
C	Amenity grassland
D	Mixed native hedgerow

Mill Road

2. Management aims and vision

The aim of management at Mill Road is to enhance the condition of the grassland and woodland and increase species diversity. Preserving the primary features of ecological interest, such as the veteran pear tree, the insect bank and the population of nationally rare invertebrates are also key considerations.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Meadow management – NCC

Improve the floral diversity and overall condition of Mill Road Meadow.

1. Take a hay cut biannually, achieving a sward height of 10-15cm. Any cuttings should be removed off site, however a small proportion can be used to create grass snake egg-laying heaps on site. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.
2. Cut or dig-out dense patches of undesirable species such as burdock in mid-summer as appropriate, prior to seed dispersal.

Prescription 2: Clearance of encroaching bramble – NCC/Vols

Extend and conserve the wildlife meadow by removing the encroaching bramble. Care must be taken to preserve black horehound where present on meadow edges.

1. Cut back bramble and other suckers/leaders from the grassland and remove the stumps.

Prescription 3: Woodland management – NCC/Vols

Remove undesirable non-native species from woodland where they occur, such as turkey oak, Norway Maple and false acacia.

Prescription 4: Woodland glade creation – NCC/Vols

Establish a series of glades within bramble scrub dominated areas in woodland understory and underplant with trees to develop the understory.

1. Create one new glade (approximately 50-100m^2) within dense bramble understory of woodland.
2. Plant glade edges with hazel shrubs.
3. Within glade, manage bramble and ruderal species regrowth intensively during first two growing seasons, removing arisings and bramble stumps.
4. Continue to manage as required in future years.

Prescription 5: Insect bank maintenance – NCC/Vols

Restore and maintain insect bank in good condition, keeping the feature clear of coarse grasses, pernicious weeds and encroaching scrub.

1. Remove coarse grasses, pernicious weeds and encroaching scrub from the insect bank as necessary.

Prescription 6: Hedgerow management – NCC/Vols

Manage newly planted hedgerow (D) to ensure successful establishment during first 5 years of management.

1. Replace any failed whips during first 2 winters, and continue to gap-up hedgerow as necessary.
2. Remove competing weed species and maintain a layer of bark mulch around base of hedgerow.

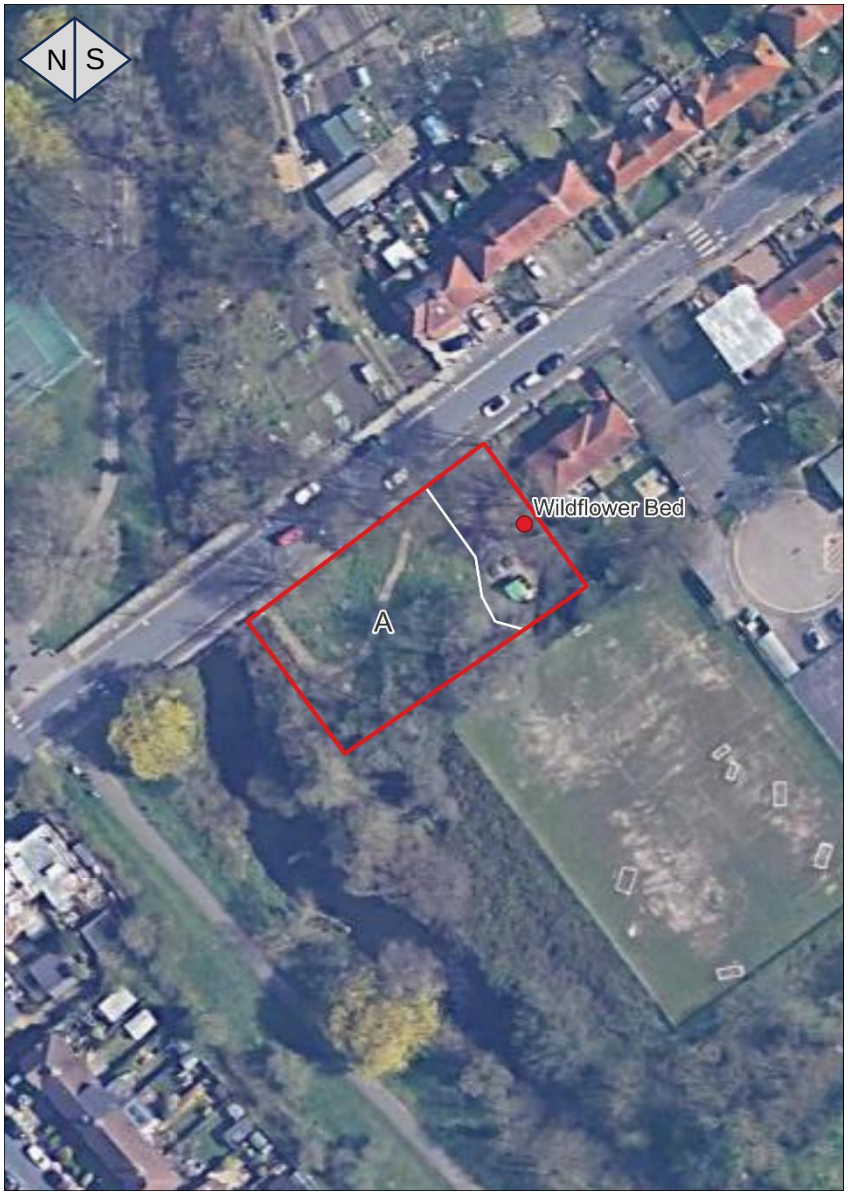
Mill Road

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Meadow management	**1**	A	A	A	A	A	Mar - Oct	**NCC**	Carry out a biannual hay cut, removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs.
P2: Clearance of encroaching bramble	**1**	A	A	A	A	A	Oct - Feb	**NCC/Vols**	Cut back bramble and other suckers/leaders from the grassland and remove the stumps.	Avoid bird nesting
P3: Woodland management	**1**	B	B	B	B	B	Oct - Feb	**NCC/Vols**	Remove undesirable non-native species from woodland.	Avoid impacts to bats and nesting birds
P4: Woodland glade creation	**1**	B	B	B	B	B	Oct - Feb	**NCC/Vols**	Create one new glade within dense bramble understory of woodland. Plant glade edges with hazel shrubs. Within glade, manage bramble and ruderal species regrowth intensively during first two growing seasons, removing arisings and bramble stumps. Continue to manage as required in future years	Avoid bird nesting for scrub clearance
P5: Insect bank maintenance	**1**	A	A	A	A	A	All year	**NCC/Vols**	Remove coarse grasses, pernicious weeds and encroaching scrub from the insect bank as necessary.	

Mill Road

P6: Hedgerow management	**1**	D	D	D	D	D	Oct - Feb	**NCC/Vols**	Replace any failed whips during first 2 winters, and continue to gap-up hedgerow as necessary. Remove competing weed species and maintain a layer of bark mulch around base of hedgerow.	

Meadway Orchard



1. Overview

Meadway Community Orchard is a small fruit orchard in Twickenham on the southern bank of the River Crane, adjacent to the main pedestrian path on Meadway. Historically the site was a neglected green space dominated by bramble scrub and ivy, however since being reclaimed by FORCE in 2013 it has been repurposed as a community orchard and planted with fruit trees and bushes. A stag beetle logger and bird and bat boxes have also been installed. The orchard trees are situated within a mosaic of rough grassland, tall herb and bramble scrub habitat.

The orchard is currently managed by local volunteers, who have a small compound on site. The volunteers carry out a variety of tasks including fruit tree pruning, weeding, scrub management and maintaining a small wildflower bed.

Features of interest
Orchard trees
Wildflower bed

Ref.	Habitat
A	Orchard and meadow grassland

2. Management aims and vision

Meadway Orchard will be maintained as an inviting community green space which is utilised for the engagement and involvement of residents. Conservation volunteering at the orchard will be actively encouraged along with social activities, such as the harvesting of fruit. The site will equally be enhanced and preserved aesthetically in addition to management for nature conservation.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Meadow grassland maintenance – NCC

Improve and maintain the meadow grassland to increase the diversity and abundance of floral and grass species.

Meadway Orchard

1. Grass to be cut biannually to a sward height of 10cm leaving 5% uncut per year (to be rotated annually). Any cuttings should be removed off site, a small proportion can be used to create a hibernaculum, a maximum of 1 cubic metre to be on site at any one time. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.
2. Topping off of vigorous species, such as creeping thistle, before seeds are set, may be required during the season.

Prescription 2: Maintenance of bat and bird boxes – FORCE/Local volunteers

Bat and bird boxes must be maintained in good condition to ensure their longevity and availability for continued use. An ecologist holding a Natural England Bat Survey Licence to disturb bats must be consulted prior to bat box maintenance.

1. Ensure box is still hung securely.
2. Adjust fixings as appropriate, check box for any damage.
3. Clean out old nest material/droppings and debris.

Prescription 3: Fruit tree care – Local volunteers

The care and maintenance of the orchard's fruit trees, such as pruning, watering, weeding and mulching as necessary will be carried out by local volunteers. As a space for community ownership and engagement, the active local volunteers will maintain the leading role in establishing and caring for orchard trees, and therefore detailed specifications are not made within this management plan.

Prescription 4: Wildflower bed management – Local volunteers

The wildflower bed at the orchard has been established by local volunteers and will continue to be maintained by the local community. The volunteers will maintain the leading role in caring for the wildflower bed, and therefore detailed specifications are not made within this management plan.

Meadway Orchard

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Meadow grassland maintenance	**1**	A	A	A	A	A	Mar - Oct	**NCC**	Carry out a biannual hay cut, removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs.
P2: Maintenance of bat and bird boxes	**1**	A	A	A	A	A	Oct	**FORCE/Local Volunteers**	Check condition of boxes annually, adjust fixings as appropriate, clean out boxes.	Licenced bat ecologist required. Consult appropriate Council Officer
P3: Fruit tree care	**1**	A	A	A	A	A	As required	**Local Volunteers**	Management to be co-ordinated by local volunteers.	
P4: Wildflower bed management	**1**	-	-	-	-	-	As required	**Local Volunteers**	Management to be co-ordinated by local volunteers.	

Kneller Gardens

1. Overview

Kneller Gardens is a popular and well-used site located centrally in the Lower Crane Valley, at the River's divergence with the Duke of Northumberland's River. It is a popular place for sports and dog-walking and hosts a number of facilities including a café, changing rooms, sports courts and pitches, play equipment and outdoor gym equipment.

The habitats on site consist primarily of amenity grassland, however there is a diverse range of mature trees, including native black poplar, which is a Richmond Biodiversity Action Plan species, dawn redwood, London plane, English oak and golden weeping willow, which are contributary to the site's unique character within the context of the Lower Crane Valley.

Other features of ecological interest include a mixed native hedge which has been laid with stakes and binders, a large pollination station/ecotone around the northern edge of the amenity grassland, and bat and bird boxes.

Features of interest
Pavillion
Native black poplars
Sports facilities
Traditionally laid hedgerow

Ref.	Habitat
A	Amenity grassland
B	'Pollination station'
C	Ruderal and scrub
D	Native mixed hedgerow

2. Management aims and vision

Kneller Gardens will be maintained as an iconic destination within the Lower Crane Valley and a hotspot for sporting and leisure activities, whilst continually enhancing the provisions for biodiversity with a focus on landscape connectivity.

Kneller Gardens

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Maintenance of pollination stations – GMC

Improve and maintain the pollination stations *(Compartment B)* to increase the diversity and abundance of floral and grass species. To be carried out by Grounds Maintenance Contractor in liaison with LBRuT Parks Officer and Ecology Officer.

1. Cut the grass biannually, achieving a sward height of 10-15cm. Any cuttings should be removed off site.
2. Monitor the establishment of wildflowers during the summer months and prescribe supplementary seed sowing as appropriate.
3. Where prescribed, lightly scarify the ground during autumn or early spring and oversow with a native wildflower seed mixture. Seed should be sown by hand and trodden in firmly.

Prescription 2: Native hedge planting – NCC/Vols

Extend hedgerow by approximately 200m across northern boundary of the site to improve habitat connectivity and increase the volume of fruiting and flowering shrubs. The hedgerow will continue to be traditionally managed by laying with stakes and binders, however neither the new or existing hedgerow is likely to require laying or re-laying within the time-frame of this management plan.

3. Plant whips of native species such as hawthorn, field maple, hazel, guelder rose, dogwood, hornbeam, wayfaring tree and blackthorn. Species will be chosen by LBRuT in agreement with FORCE. If appropriate the ground will need to be prepared and dug over.
4. Monitor hedge annually. Replace any failed whips during the autumn or winter.

Prescription 3: Installation and maintenance of bat and bird boxes – FOKG

Additional bat and bird boxes will be installed to increase roosting and nesting opportunities on site. Boxes must be maintained in good condition to ensure their longevity and availability for continued use. An ecologist holding a Natural England Bat Survey Licence to disturb bats must be consulted prior to bat box maintenance.

Installation

1. Install a minimum of two bat and two bird boxes on site on appropriately located mature trees or buildings.
2. Bat boxes should be hung at approximately 4m height, away from any low hanging branches or obstructions, at a south-westerly through to south-easterly aspect.
3. Bird boxes should be hung between 3 and 5m high on a tree or building, with a clear flight path away from disturbance. The entrance to the box should face away from prevailing weather conditions.

Annual maintenance:

1. Ensure box is still hung securely.
2. Adjust fixings as appropriate, check box for any damage.
3. Clean out old nest material/droppings and debris.

Kneller Gardens

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Maintenance of pollination stations	**1**	B	B	B	B	B	Mar - Oct	**GMC**	Cut and lift arisings bi-annually. Sow wildflower seeds as appropriate in autumn or early spring.	Monitor wildflower establishment annually
P2: Native hedge planting	**1**	C	C	C			Oct - Mar	**NCC/Vols**	Plant whips of native species to extend hedgerow across northern boundary of site.	Species to be chosen by LBRuT Ecology Officer in agreement with FORCE.
P3: Installation and maintenance of bat and bird boxes	**1**	All	All	All	All	All	October	**FORCE**	Install in first year. Check condition of boxes annually, adjust fixings as appropriate, clean out boxes.	Licenced bat ecologist required. Consult appropriate Council Officer

Mereway Nature Park

1. Overview

Mereway Nature Park sits in between the Duke of Northumberland's River and the River Crane, at the point where the two rivers diverge. It marks the beginning of the culverted, concrete-lined reach of the Crane which has historically been artificially straightened, widened and widened. The Nature Park itself is a mixture of dense scrub and woodland, primarily dense bramble to the south of the tarmacked footpath which runs through the centre of the site. There is also a small grassy glade opposite the former Mereway Day Centre site. Mature tree species present include sycamore, Swedish whitebeam, Norway maple and oak. Elder is also common within the area.

Features of interest
FORCE Fox Bench
Song thrush territories
Scrub habitat with bird interest

Ref.	Habitat
A	Mixed scrub
B	Grassland glade
C	Woodland
D	Mixed scrub and woodland
E	Grassland glade

2. Management aims and vision

Mereway Nature Park is an important mosaic of scrub habitat and hosts one of the largest masses of bramble scrub within the Lower Crane Valley. As such it is an important food and nesting/shelter resource for a number of birds and small mammals and will be managed to maintain a diversity of scrub habitat in different successional stages to ensure that a variety of ecological niches are maintained. The glades and scrub edges which provide a rich nectar source for pollinators and enhance public access will also be preserved.

Mereway Nature Park

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Early successional scrub maintenance – NCC

Successional scrub is a dynamic habitat which must be controlled in order to prevent adjacent habitat such as grassland from disappearing, however it is also valuable in its own right through providing nesting opportunities to birds and overwintering invertebrates. A diverse scrub habitat comprised of a mosaic of successional ages will be maintained to provide a variety of ecological niches for wildlife.

1. Cut and remove bramble scrub along habitat margins (i.e. up to 5m in from scrub edge) on a ten-year rotational cycle, never cutting more than 1/10 of the scrub margins in any one year and avoid cutting adjacent patches in consecutive years. All stems must be cut to ground level to avoid creating any trip hazards.
   A proportion of arisings may be used to top up dead hedges on site in *Compartment C*.

Prescription 2: Clearance of encroaching bramble – NCC/Vols

Conserve the grassland glades in *Compartment B* and *E* by removing the encroaching bramble. Care must be taken to preserve black horehound where present on meadow edges.

1. Cut back bramble and other suckers/leaders from the grassland and remove the stumps as necessary.

Prescription 3: Woodland management – NCC

Diversify the structure and species composition of the woodland utilising traditional conservation management practices.

1. Thin semi-mature sycamore by approximately 25%, taking 5% per year.
2. Remove sycamore regeneration.
3. Following thinning, underplant with alder, field maple and hazel.

Prescription 4: Meadow management – NCC

Improve the floral diversity and overall condition of the grassland glade *(E).*

1. Take a hay cut biannually, achieving a sward height of 10-15cm. Any cuttings should be removed off site, however a small proportion can be used to create grass snake egg-laying heaps on site. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.

Mereway Nature Park

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Early successional scrub maintenance	**1**	A	A	A	A	A	Oct - Feb	**NCC**	Cut and remove bramble scrub along habitat margins (i.e. up to 5m in from scrub edge) on a ten-year rotational cycle.	Avoid bird nesting
P2: Clearance of encroaching bramble	**1**	B, E	B, E	B, E	B, E	B, E	Oct - Feb	**NCC/Vols**	Cut back bramble and other suckers/leaders from the grassland and remove the stumps.	Avoid bird nesting
P3: Woodland management	**1**	C	C	C	C	C	Oct - Feb	**NCC**	Thin semi-mature sycamore by approximately 25%, taking 5% per year. Remove sycamore regeneration. Following thinning, underplant with alder, field maple and hazel.	
P4: Meadow management	**1**	E	E	E	E	E	Mar - Oct	**NCC**	Carry out a biannual hay cut, removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Must be carried out in appropriate weather conditions. Pre-works check for hedgehogs.

Craneford Way

1. Overview

Craneford Way is a large area of grassland with a popular play area. It is primarily managed for public amenity and sport as short-mown grassland, however there are areas of rough grassland 'pollination stations' around the northern and western margins, and peripheral areas of scrub to the west and south-east, which attract large numbers of passerine birds such as dunnocks and greenfinches.

A number of parkland trees are scattered around the field margins, including rowan, robinia, gray alder, field maple, Norway maple, cherry, narrow-leaved ash, birch and Swedish whitebeam.

Features of interest
FORCE woodpecker bench
View of renaturalised riverbank
Dense scrub with bird interest

Ref.	Habitat
A	Amenity grassland
B	Pollination station
C	Mixed scrub
D	Dense scrub

Craneford Way

2. Management aims and vision

Habitat management at Craneford Way will focus on diversifying the provision of habitats to support biodiversity whilst maintaining the site's function as a space for public amenity and sport. A focus will be maintained on managing the pressure of an increasing number of visitors to the park, and ensuring long-term resilience to climate change.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Early successional scrub maintenance – NCC

A diverse scrub habitat comprised of a mosaic of successional ages will be maintained to provide a variety of ecological niches for wildlife.

1. Annually cut and remove bramble scrub in *Compartment C* on a ten-year rotational cycle, never cutting more than 1/10 of the scrub margins in any one year and avoid cutting adjacent patches in consecutive years.

Prescription 2: Maintenance of pollination stations – GMC

Improve and maintain the pollination stations to increase the diversity and abundance of floral and grass species. To be carried out by Grounds Maintenance Contractor in liaison with LBRuT Parks Officer and Ecology Officer.

1. Cut the grass biannually, achieving a sward height of 10-15cm. Any cuttings should be removed off site.
2. Monitor the establishment of wildflowers during the summer months and prescribe supplementary seed sowing as appropriate.
3. Where prescribed, lightly scarify the ground during autumn or early spring and oversow with a native wildflower seed mixture. Seed should be sown by hand and trodden in firmly.

Craneford Way

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Scrub maintenance	**1**	C	C	C	C	C	Sep - Oct	**NCC**	Cut and remove bramble scrub along habitat margins on a ten-year rotational cycle, never cutting more than 1/10 of the scrub margins in any one year.	Cut during autumn to avoid winter disturbance to hibernating wildlife.
P2: Maintenance of pollination stations	**1**	B, C	B, C	B, C	B, C	B, C	Mar - Oct	**GMC**	Cut and lift arisings bi-annually. Sow wildflower seeds as appropriate in autumn or early spring.	Monitor wildflower establishment annually

Twickenham Rifle and Pistol Club

1. Overview

Land leased to Twickenham Rifle and Pistol Club, on the southern bank of the River Crane opposite Craneford Way playing fields forms an important part of the natural environment in the Lower Crane Valley. The outdoor rifle range is no longer in use, and has developed into an ecologically rich mosaic of tussocky grassland, scrub and crumbling brickwork which retains a distinctly wild feel within an urban setting. The semi-improved neutral grassland is moderately species-rich and includes some species associated with unimproved grassland. There are many anthills present within the sward, and bramble scrub is invading the grassland due to little management taking place.

In 2021, a pilot river restoration project was carried out at the Rifle Club, which saw a 30m section of the culverted riverbank broken out and re-naturalised, with the creation of a marginal backwater.

There are two bridges across the River Crane between the playing fields and the south bank. The land is not currently open to public access but is visible from the opposite bank of the river at Craneford Way.

Features of interest
Ant hills
Renaturalised riverbank
Artificial kingfisher bank

Ref.	Habitat
A	Grassland meadow
B	Bramble scrub
C	Re-naturalised river bank with marginal vegetation

Twickenham Rifle and Pistol Club

2. Management aims and vision

Twickenham Rifle and Pistol Club will likely be utilised in the future for further river re-naturalisation following the success of the pilot scheme. With regard to the terrestrial habitats, the site will be managed sensitively to preserve the intrinsic mosaic habitat structure and important ecological features, in particular the ant hills. As an area with no public access, the Rifle and Pistol Club land presents a good opportunity to nurture this area as a wild space.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Scrub maintenance – NCC

Successional scrub is a dynamic habitat which must be controlled in order to prevent adjacent habitat such as grassland from disappearing, however it is also valuable in its own right through providing nesting opportunities to birds and overwintering invertebrates. A diverse scrub habitat comprised of a mosaic of successional ages will be maintained to provide a variety of ecological niches for wildlife. The scrub at Twickenham Rifle Club is well-established and grows quickly without any hinderance, and therefore requires more intensive management than other areas in the Lower Crane Valley.

1. Cut and remove bramble scrub along habitat margins (i.e. up to 5m in from scrub edge) on a three-year rotational cycle, never cutting more than 1/3 of the scrub margins in any one year and avoid cutting adjacent patches in consecutive years. All stems must be cut to ground level to avoid creating any trip hazards.

   Arisings may be used to create brash piles on site.

Prescription 2: Meadow management – NCC

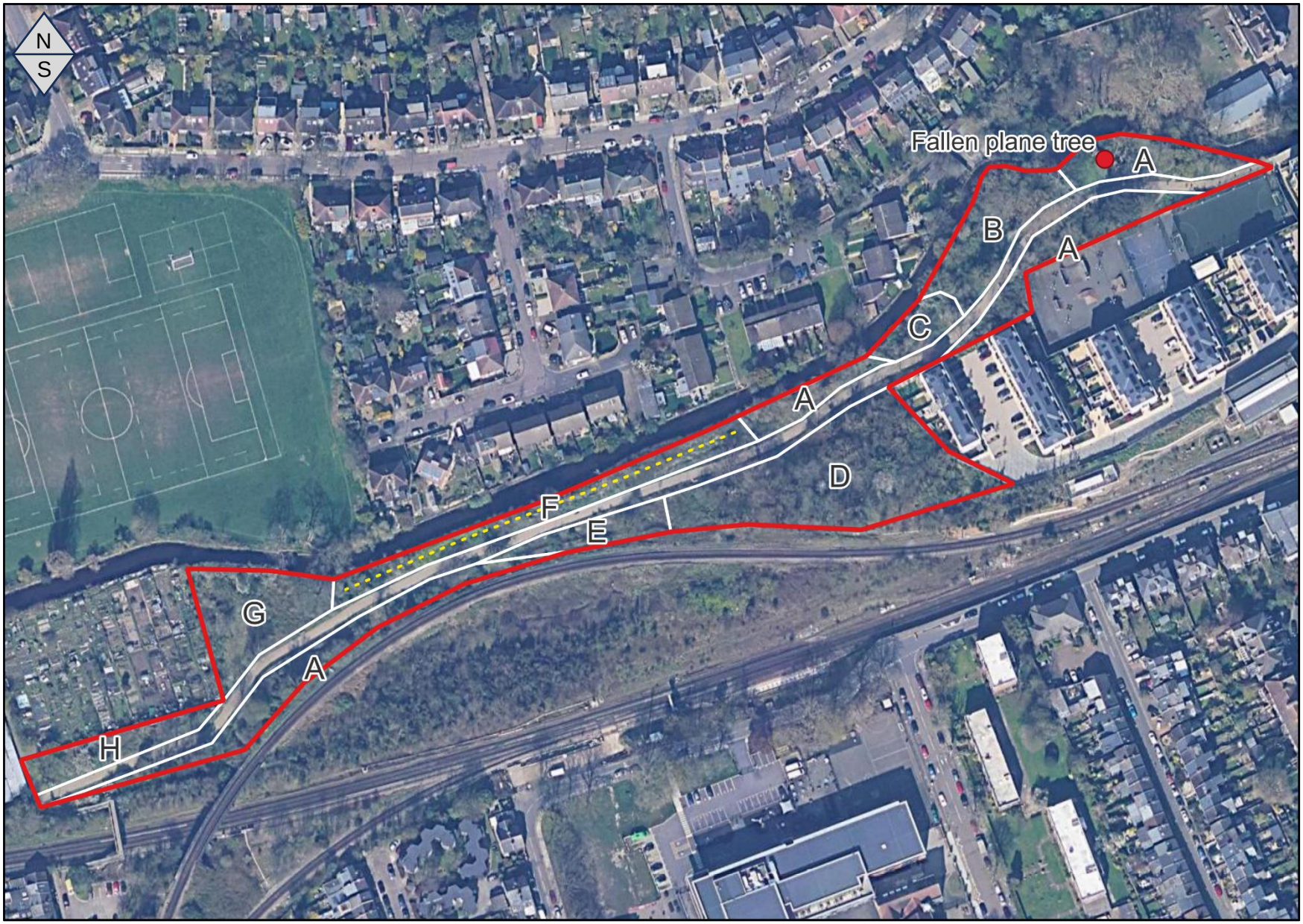
Improve the floral diversity and overall condition of the grassland in *Compartment A*.

1. Take a hay cut bi-annually, achieving a sward height of 10-15cm. Leave 20% of area around grassland margins uncut, rotating the uncut area each year. Grassland must be cut using a strimmer, with care being taken to minimise impacts on ant-hills.
   Any cuttings should be removed off site, however a small proportion can be used to create grass snake egg-laying heaps on site. Meadow cuttings must be carried out in appropriate weather conditions and as per good practice.

Twickenham Rifle and Pistol Club

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Scrub maintenance	**1**	A	B	C	A	B	Sep - Oct	**NCC**	Cut and remove bramble scrub along habitat margins on a three-year rotational cycle, never cutting more than 1/3 of the scrub margins in any one year.	Cut during autumn to avoid winter disturbance to hibernating wildlife.
P2: Meadow management	**1**	All	All	All	All	All	Mar - Oct	**NCC**	Carry out a biannual hay cut, removing arisings from site. Cut and remove dense patches of undesirable species prior to seed dispersal.	Strimmer use only to protect ant hills.

Twickenham Junction Rough



Twickenham Junction Rough

1. Overview

Twickenham Junction Rough is a linear conservation site which links Twickenham station to Marsh Farm Lane and open spaces along the River Crane. It is a Site of Borough Importance for Nature Conservation which consists of a well-surfaced pathway bordered by brambles, tall herb vegetation and buddleia, with intermittent trees including ash, cherry, sycamore, beech, oak and elm. The habitats here are of value for breeding birds and bats, and there are remnants of rail track and a buffer stop which highlights the land's railway heritage.

Other features of interest at this site include two carved wood benches, the FORCE railway bench and the FORCE sparrow bench, a black mulberry tree and a large fallen plane tree, which has been adapted into a natural play feature.

There is relatively little in the way of formal access into the habitats which lie adjacent to the pathway here, with the exception of some unofficial desire lines into the larger woodland area on the south of the path. Other blocks of woodland and scrub have been fenced off with chestnut paling to discourage access and provide a sanctuary for wildlife. A section of mixed-native species hedgerow has been planted along the northern boundary towards the centre of the site, consisting of field maple, hazel and hawthorn.

Two glades are present at Twickenham Rough, one in the western end of the site (G) abutting the Marsh Farm Allotment, and one in the east of the site (C) which has recently been planted with hazel and alder trees.

Features of interest
FORCE train bench
FORCE sparrow bench
Black mulberry tree
Old railway workings
Large fallen plane tree

Ref.	Habitat
A	Broadleaved woodland
B	Broadleaved woodland
C	Broadleaved woodland
D	Broadleaved woodland
E	Ruderal and scrub
F	Native mixed hedgerow
G	Mixed scrub
H	Mixed scrub and ruderal

2. Management aims and vision

Habitat management at Twickenham Rough will aim to develop a more varied woodland structure, with a canopy consisting primarily of native species which are viable in the long-term, a diverse sub-canopy and understory and a flourishing ground flora. Two areas of rapidly spreading buddleia and bramble scrub have been identified for the restoration and creation of glades, helping to achieve a mosaic habitat structure offering a wide variety of ecological niches for wildlife. The area immediately to the left of the Marsh Lane entrance, where a number of fruit trees currently exist, is to be managed as a community orchard.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Woodland management – NCC

Diversify the structure and species composition of the woodland utilising traditional conservation management practices. All arisings to be cut and stacked on site as deadwood habitat.

Compartment B

1. Thin dominant ash in understory by 25%, taking 5% each year.
2. Thin holly in understory, taking 10% each year.
3. Remove horse-chestnut saplings.
4. Coppice hazel and manage on a 7-year coppice cycle.
5. Sever ivy on mature trees.

Compartment D

1. Thin sycamore and ash in understory by 25%, taking 5% each year.
2. Fell 10% of early mature ash showing signs of dieback to create small glades within the woodland.
3. Following thinning, underplant with field maple and hazel.
4. Manage hazel and field maple on a 7-year rotational coppice cycle.

Twickenham Junction Rough

Prescription 2: Hedgerow management – NCC

Manage the hedgerow (F) on site to establish dense, bushy lateral growth.

1. Remove buddleja stands from hedgerow and replant any gaps with native species.
2. Lay hedgerow in first year of management.
   **Utilise arisings from hazel coppicing and willow pollarding to supply poles and binders for hedge laying.*

Prescription 3: Early successional scrub maintenance – NCC

A diverse scrub habitat comprised of a mosaic of successional ages will be maintained to provide a variety of ecological niches for wildlife.

1. Annually cut and remove bramble scrub in site margins on a ten-year rotational cycle, never cutting more than 1/10 of the scrub margins in any one year and avoid cutting adjacent patches in consecutive years.

Prescription 4: Glade creation and management – NCC/VolS

Create and restore glades in *Compartments E and G*, which are currently dominated by scrub and nettles.

Compartment E

1. Remove buddleja and scrub in *Compartment E*, grubbing out stumps and roots.
2. Manage *Compartment E* on a cut and lift regime, mowing at least four times during the growing season for the first three years of management, to reduce dominance of ruderal tall herb species and encourage the growth of perennial grasses.

Compartment G

1. Clear bramble and buddleja encroaching onto grassland area.
2. Coppice mature willows on the edge of the glade.
3. In subsequent years, manage glades on a biannual cut and lift cycle as grasses and wildflowers begin to establish.
4. Maintain chestnut paling around this glade and manage as a protected area for wildlife.

Prescription 5: Buddleja management – NCC

Buddleja has spread across the site, likely originating from the railway embankment. This shrub is competing with native vegetation and will be removed where practicable.

1. Remove stands of buddleja and treat stumps wherever possible.

Prescription 6: Establishment of community orchard – NCC/VolS

Establish *Compartment H* as an accessible community space for fruit and nut harvesting.

1. Clear bramble, buddleja and other undesirable woody shrubs from *Compartment H*.
2. Diversify the stock of fruit trees through additional planting. Explore the feasibility of planting additional mulberry trees.
3. Undertake regular management of brambles and ruderal regrowth as necessary. Non-woody arisings can be used to create a compost heap in the corner of the site.
4. Prune and care for fruit trees as necessary using local volunteers.

Objective 2: Visitor access and experience

Prescription 7: Natural play maintenance – FORCE/AC

Maintain woodchip layer around fallen Plane tree which is used for natural play, to facilitate access and encourage use and enjoyment of the area.

1. Arboricultural contractor to drop off woodchip at site as requested.
2. Top up area surrounding fallen tree with a layer of woodchip.

Twickenham Junction Rough

Prescription 8: Fencing maintenance – NCC

Compartments B, C and *G* are currently enclosed by chestnut paling to discourage public access and allow these areas to develop naturally. The fencing must be kept in a good state of repair.

1. Carry out maintenance as required of chestnut pale fencing which surrounds *Compartments B, C* and *G*.

Twickenham Junction Rough

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Woodland management works	**1**	B, D	B, D	B, D	B, D	B, D	Oct – Feb	**NCC**	*Compartment B* Thin dominant ash in understory by 25%, taking 5% each year. Thin holly in understory, taking 10% each year. Remove horse-chestnut saplings. Coppice hazel and manage on a 7-year coppice cycle. Sever ivy on mature trees. *Compartment D* Thin sycamore and ash in understory by 25%, taking 5% each year. Fell 10% of early mature ash showing signs of dieback to create small glades within the woodland. Following thinning, underplant with field maple and hazel. Manage hazel and field maple on a 7-year rotational coppice cycle.	Consider potential impacts to wildlife including nesting birds, roosting bats, and badgers.
P2: Hedgerow management	**1**	F					Oct – Feb	**NCC**	Remove buddleja stands from hedgerow and replant any gaps with native species. Lay hedgerow in first year of management.	

Twickenham Junction Rough

P3: Early successional scrub maintenance	**1**	All	All	All	All	All	Oct – Feb	**NCC**	Annually cut and remove bramble scrub in site margins on a ten-year rotational cycle, never cutting more than 1/10 of the scrub margins in any one year.	Avoid bird nesting
P4: Glade creation and management	**1**	E, G	E, G	E, G	E, G	E, G	Oct – Feb/ Mar – Oct	**NCC/Vols**	Remove buddleja and scrub in *Compartment E*, grubbing out stumps and roots. Manage *Compartment E* on a cut and lift regime, mowing at least four times during the growing season for the first three years of management, to reduce dominance of ruderal tall herb species and encourage the growth of perennial grasses. Clear bramble and buddleja encroaching onto grassland area in *Compartment G*. Coppice mature willows on the edge of the glade. Manage glades on a biannual cut and lift cycle as grasses and wildflowers begin to establish.	Avoid bird nesting
P5: Buddleja management	**1**	All	All	All	All	All	Oct – Feb	**NCC**	Remove stands of buddleja and treat stumps	

Twickenham Junction Rough

P6: Establishment of community orchard	**1**	H	H	H	H	H	All year	**NCC/Vols**	Clear bramble, buddleja and other undesirable woody shrubs from *Compartment H*. Diversify the stock of fruit trees through additional planting. Undertake regular management of brambles and ruderal regrowth as necessary. Prune and care for fruit trees as necessary using local volunteers.	Encourage community involvement in management of the orchard
P7: Natural play maintenance	**1**	A	A	A	A	A	All year	**FORCE/AC**	Maintain woodchip layer around fallen Plane tree	
P8: Fencing maintenance	**1**	B, C, G	B, C, G	B, C, G	B, C, G	B, C, G	As required	**NCC**	Carry out maintenance as required of chestnut pale fencing which surrounds *Compartments B, C* and *G*	

Moormead and Bandy Recreation Ground

1. Overview

Moormead and Bandy Recreation Ground is a Site of Local Importance for Nature Conservation, consisting of park with numerous facilities including a children's playground, tennis courts, a cricket pitch and football facilities. The River Crane runs along the western side of the park, behind a narrow buffer of broadleaved woodland which is fenced to preclude public access. Significant features in the park include the Moormead Pavillion and the 'self made man' an art installation carved out of the stem of a dead tree.

The site is primarily managed for public amenity, however the southern and western borders of the parks are left to grow long over the summer as 'pollination stations', and spring bulbs have been planted along the southern edge of the main footpath which form colourful displays in February and March. There are also a number of mature trees within the park, including horse chestnut, Lombardy poplar, London plane, cherry, common lime, hornbeam, sycamore, Norway maple and ash. Standing deadwood has also been retained where safe.

Features of interest
'Self-made man' sculpture
Pavillion

Ref.	Habitat
A	Amenity grassland
B	'Pollination station'

2. Management aims and vision

Habitat management at Moormead and Bandy Recreation Ground will focus on diversifying the provision of habitats to support biodiversity whilst maintaining the site's function as a space for public amenity and sport. A focus will be maintained on managing the pressure of an increasing number of visitors to the park, and ensuring long-term resilience to climate change.

3. Prescriptions

Objective 1: Nature Conservation

Prescription 1: Maintenance of pollination stations – GMC

Improve and maintain the pollination stations to increase the diversity and abundance of floral and grass species. To be carried out by Grounds

Moormead and Bandy Recreation Ground

Maintenance Contractor in liaison with LBRuT Parks Officer and Ecology Officer.

1. Cut the grass biannually, achieving a sward height of 10-15cm. Any cuttings should be removed off site.
2. Monitor the establishment of wildflowers during the summer months and prescribe supplementary seed sowing as appropriate.
3. Where prescribed, lightly scarify the ground during autumn or early spring and oversow with a native wildflower seed mixture. Seed should be sown by hand and trodden in firmly.

Prescription 2: Creation of stag beetle loggeries – NCC/FORCE/FOM&B

Stag beetles have been recorded in and around Moormead and Bandy Recreation Ground. Stag beetles breed in partially buried deadwood. 'Loggeries' will be created and maintained using offcuts from on-site remedial tree works.

1. Dig a pit approximately half a metre deep, in a partially shaded area around the site periphery, away from any footpaths or desire lines, or areas used for sport or play activities.
2. Stack logs vertically into the pit, with one end of the logs protruding from the ground. Logs should be stacked tightly.
3. Pack loose soil or bark mulch around the base of the completed loggery.
4. Ensure all exposed ends of logs are free of sharp edges which could cause injury.

Prescription 3: Installation and maintenance of bat and bird boxes – FOM&B/FORCE

Additional bat and bird boxes will be installed to increase roosting and nesting opportunities on site. Boxes must be maintained in good condition to ensure their longevity and availability for continued use. An ecologist holding a Natural England Bat Survey Licence to disturb bats must be consulted prior to bat box maintenance.

Installation

1. Install a minimum of two bat and two bird (blue tit or starling) boxes on site on appropriately located mature trees or buildings.
2. Bat boxes should be hung at approximately 4m height, away from any low hanging branches or obstructions, at a south-westerly through to south-easterly aspect.
3. Bird boxes should be hung between 3 and 5m high on a tree or building, with a clear flight path away from disturbance. The entrance to the box should face away from prevailing weather conditions.

Annual maintenance:

4. Ensure box is still hung securely.
5. Adjust fixings as appropriate, check box for any damage.
6. Clean out old nest material/droppings and debris.

Moormead and Bandy Recreation Ground

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Maintenance of pollination stations	**1**	A	A	A	A	A	Mar – Oct	**GMC**	Cut and lift arisings bi-annually. Sow wildflower seeds as appropriate in autumn or early spring.	Monitor wildflower establishment annually
P2: Creation of stag beetle loggeries	**2**	A	A	A	A	A	All year	**NCC/ FOM&B**	Dig a pit and fill with tightly packed vertical standing logs using off-cuts from on-site tree works.	
P3: Installation and maintenance of bat and bird boxes	**2**	All	All	All	All	All	October	**FOM&B**	Install in first year. Check condition of boxes annually, adjust fixings as appropriate, clean out boxes.	Licenced bat ecologist required. Consult appropriate Council Officer

Meadow and Hedgerow Summary

1. **Overview**
   This section provides a concise summary of meadow and hedgerow management in order to streamline delivery of these annual tasks.

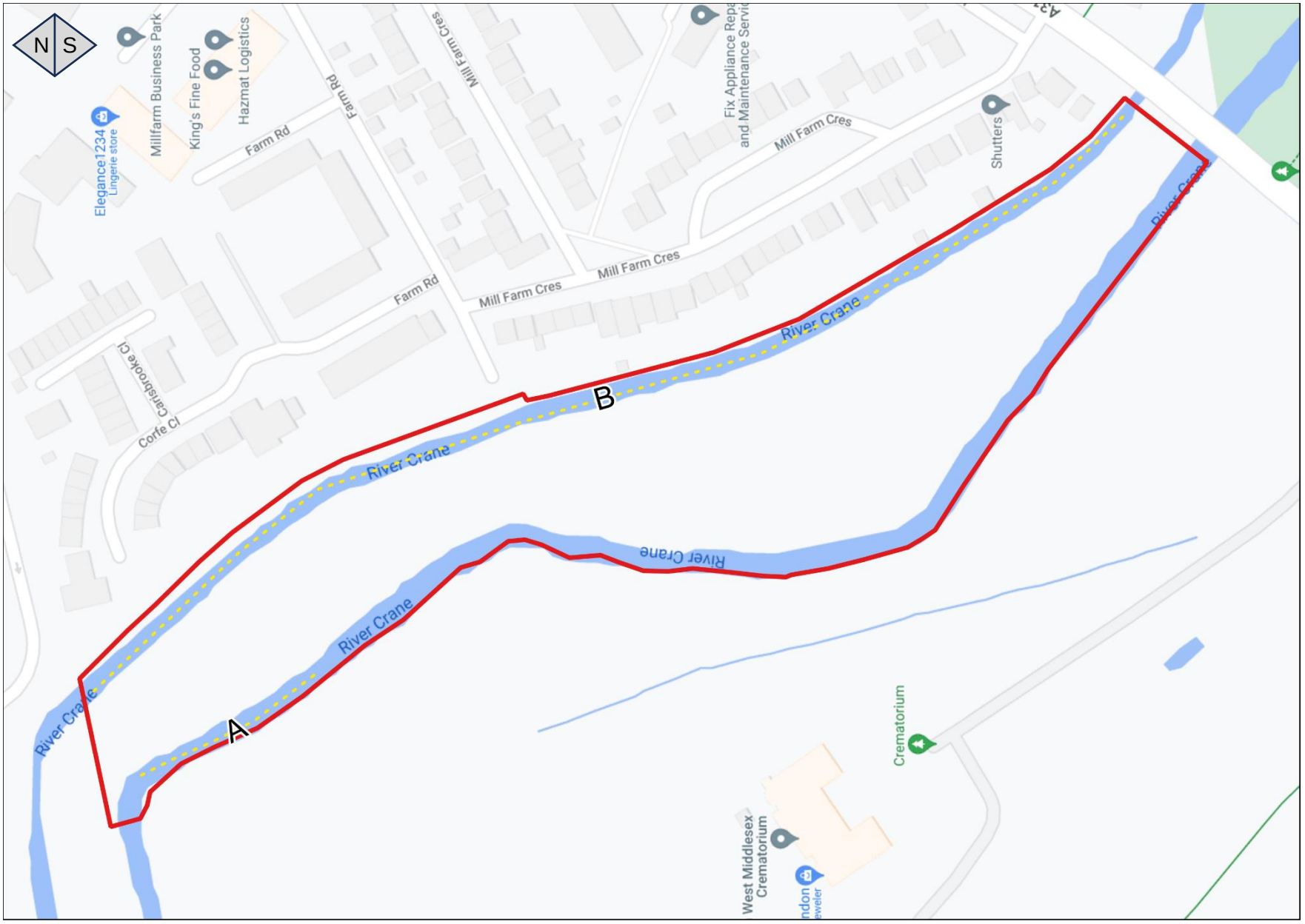
Meadow	Map Compartment	Size (m^2)	Prescription Summary	Usual Timing	Lead Resoruce
Crane Park	A	5,000	Bi-annual cut and lift	Mar – Oct	**NCC**
	A	-	Cut and remove stumps of marginal bramble scrub to extend meadow	Oct – Feb	**NCC**
Hospital Bridge Meadow	A	4,000	Bi-annual cut and lift	Mar – Oct	**NCC**
Willow Way	A	700	Bi-annual cut and lift, extend meadow into E and D	Mar – Oct	**NCC**
	E,D	100, 100 (200)	Cut and remove stumps of marginal bramble scrub to extend meadow	Oct – Feb	**NCC**
Hospital Bridge Rd – Mereway (Lincoln Field)	E	2,300	Bi-annual cut and lift	Mar – Oct	**NCC**
Fulwell Meadow	A	2,000	Bi-annual cut and lift	Mar – Oct	**NCC**
	A	-	Cut and remove stumps of marginal bramble scrub to extend meadow	Oct – Feb	**NCC**
Mill Road	A	3,000	Bi-annual cut and lift	Mar – Oct	**NCC**
		-	Cut and remove stumps of marginal bramble scrub to extend meadow	Oct – Feb	**NCC**
Meadway Orchard	A	800	Bi-annual cut and lift	Mar – Oct	**NCC**
Kneller Gardens	B	5,500	Bi-annual cut and lift of pollination stations	Mar – Oct	**GMC**
Mereway	E	350	Bi-annual cut and lift	Mar – Oct	**NCC**
Rifle Club	A	1600	Bi-annual cut and lift using strimmers	Mar – Oct	**NCC**
	B	-	Cut and remove bramble scrub along habitat margins (i.e. up to 5m in from scrub edge) on a three-year rotational cycle	Oct – Feb	**NCC**
Craneford Way	B,C	400, 600 (1,000)	Bi-annual cut and lift of pollination stations	Mar – Oct	**GMC**
	C	-	Cut and remove 10% of marginal bramble scrub per year	Oct – Feb	**NCC**
Twickenham Junction Rough	E,G	350,450 (800)	Cut and lift in E 4 times per-year for first three years, followed by bi-annual cut and lift; Bi-annual cut and lift of G	Mar – Oct	**NCC**
Moormead and Bandy Recreation Ground	B	7,000	Bi-annual cut and lift of pollination stations	Mar – Oct	**GMC**

Meadow and Hedgerow Summary

Hedgerow	Map Compartment	Length (m)	Prescription Summary	Usual Timing	Lead Resource
Hospital Bridge Road – Meadway	C	1,000	Lay 20% of hedgerow per-year, plant up gaps as required	Oct – Feb	**NCC**
Willow Way	C	100	Flail to a height of 2m every 2 years	Oct – Feb	**NCC**
Mill Road	D	30	Plant up gaps in hedgerow, maintain a layer of woodchip around base and remove competing weeds	Oct – Feb	**NCC**
Twickenham Junction Rough	F	50	Lay hedge in first year, plant up gaps with native whips	Oct – Feb	**NCC**
Kneller Gardens	D	100 (ex)* 200 (tp)*	Extend hedgerow along northern boundary	Oct – Feb	**NCC**

***ex – existing; tp – to plant**

River Reach #1: Feltham Marshalling Yards to Hanworth Road



River Reach #1: Feltham Marshalling Yards to Hanworth Road

1. Overview

The river is generally straightened and over-widened, and marginal vegetation absent. The bank has mostly natural, almost vertical banks, approximately 0.7m above average water levels; there is some tow boarding at the very south end of compartment A and a concreted section towards the south end of compartment B. The river is generally 0.8m deep on average flows, with shallower sections through the centre of the reach.

A series of 18 deflectors and 12 other habitat structures installed in 2023 aim to improve both the geomorphology of the river and the amount and quality of marginal habitats. Already, there is greater variation in the bed's topography and gravels are being revealed, and vegetation is getting established in places.

Shading from trees along the river corridor was reduced on both the Richmond and Hounslow banks, creating space and light for improved riverbank vegetation. Water voles survived at Little Park until 2017 when they are believed to have been eliminated by mink. Himalayan balsam dominates the vegetation in areas along the river, in compartments A and B.

2. Management aims and vision

The management focus for Little Park will be:

a) To maintain and enhance the improvements made to the main river channel.

b) To enhance the habitat quality and improve flows along the Mill Stream.

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Maintain the existing river deflectors –NCC/Vols

The existing deflectors need to be monitored and maintained to ensure they remain stable and are having the benefits expected.

1. Check the deflectors by wading in appropriate conditions at least quarterly. During these visits, check out the following and undertake / arrange any follow-up works necessary:

a) Any change in deflector position / fixing / stability, or change in condition of materials (especially brash bundles which have a limited lifespan); any feature showing signs of deterioration should be attended to with urgency.

b) Visible changes in the channel related to the deflector – silt movement, channel scouring, bankside flooding or erosion, any increase in flood risk; add notes to file, discuss flood risk concerns with partners including EA.

c) Any build-up of natural detritus at the deflector; remove any undesirable excess.

d) Any build-up of litter / other debris; remove all from site with assistance of volunteers.

2. Where tree deflectors have continued to sprout growth, remove any that is considered to increase flood risk or reduce the benefits of the deflector, i.e., where growth is affecting marginal vegetation.

3. Where monitoring shows that further enhancements can be made to the deflector, such as by extending their length or height, discuss the options with EA and Cartographer.

Prescription 2: Increase channel-edge vegetation – NCC/Vols

Increase the length of margin on the Richmond bank with channel-edge vegetation – both marginal and emergent – to improve connectivity and provide food and cover for water voles.

1. Where sidebars or other physical features emerge in the channel, or where silt build-up allows, plant appropriate species using plugs and coir pallet

River Reach #1: Feltham Marshalling Yards to Hanworth Road

Prescription 3: Management of Mill Stream – NCC/Vols

Reduce shading and improve flow and channel-edge vegetation along the Mill Stream (B). To be carried out by Nature Conservation Contractor in liaison with Ecology Officer and Arboricultural Officer.

1. Coppice or remove trees causing shading or flow obstruction along the full length of the stream.
2. When on site, check for undesirable detritus and informal wood jams created by users which are obstructing flow.
3. Where the channel is choked by vegetation, hand-pull stems from the channel centre to help maintain flow.

Objective 3: Publicity, communication, and community involvement.

Prescription 4: Work in partnership with LB Hounslow – LBRuT/FORCE

Maintain communication with LBH and Greenspace 360.

1. Maintain contact with LBH and Greenspace 360 to ensure the strategic management of Little Park and Pevensey Road NR remains in concert.

4. Larger-scale interventions

The majority of this reach of the main river was restored via the CREW project in 2023, and maintaining this is the current priority.

However, there remain smaller opportunities that it would be worthwhile exploring as grant-funded projects:

- The control reach of the MoRPh survey (A) – the first 100m below the footbridge – was not restored under CREW so as to provide a valuable baseline for the survey analysis. In due course, in liaison with FORCE, CVP and Cartographer, it may be possible to institute some restoration here.
- The Mill Stream will likely need a larger project to fully restore flow through Little Park. This should involve EA at the outset.
- If the wet woodland glade proves successful, and the restored ditchline habitat is of good quality, it may be appropriate to extend the existing glade or create a second.
- An embayment / marginal backwater or second backwater channel could be created, possibly as part of a new glade creation.

River Reach #1: Feltham Marshalling Yards to Hanworth Road

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Maintain the existing river deflectors	**1**	B, C, D	B, C, D	B, C, D	B, C, D	B, C, D	All year	**NCC/Vols**	Monitor the deflectors at least quarterly and carry out follow-up works, including re-fixing and replacing elements as needed. Remove regrowth from deflectors where having negative impacts. Make tweaks to deflectors in liaison with EA.	
P2: Increase channel-edge vegetation	**1**	B, C, D	B, C, D	B, C, D	B, C, D	B, C, D	Mar & Sep (1 & 2) Sep – Feb (3 &4)	**NCC/Vols**	Plant up with plugs or coir as opportunities arise within the river channel margins.	
P3: Management of Mill Stream	**1**	D, E	D,E	D,E	D,E	D,E	Oct – Mar	**NCC/vols**	Coppice or remove trees causing shading or obstruction to flow. Remove user-created wood jams or other detritus obstructing flow. Hand pull vegetation from channel centre where obstructing flow.	
P4: Work in partnership with LB Hounslow	**2**						All year	**LBRuT/ FORCE**	Maintain regular contact.	

River Reach #2: Hanworth Road to Hospital Bridge Road

River Reach #2: Hanworth Road to Hospital Bridge Road

1. Overview

This is the Crane Park reach of the River Crane, and contains Crane Park Island Local Nature Reserve. The southern bank (with the exception of the small section to the east of the A316) sits in the borough of Hounslow and is primarily dominated by mature broadleaved woodland. The northern bank sits within the borough of Richmond-Upon-Thames and is characterised by a mosaic of meadow grassland, trees, tall herb, scrub and woodland.

The river channel is significantly shaded throughout the majority of this reach, by approximately 60%, with heavy shading in places by mature willow and sycamore. It has historically been widened and straightened with the remnants of wooden revetments still re-inforcing the banks along much of the reach. Marginal bankside vegetation is patchy along this reach of the river and much of the river channel remains homogenous despite a number of restoration interventions.

Just over 100m downstream of the Hanworth Road Bridge, the river channel splits into two narrower, parallel channels, with a small linear central island, which is heavily infested with Himalayan balsam. 0.25km downstream of the bridge, the 'mill stream' which passes through Little Park and into Crane Park converges with the River Crane, before the river diverges again around Crane Park Island Local Nature Reserve. The river passes through a series of weirs here, and to the eastern end of Crane Park Island, the banks of the northern-forking channel are artificially reinforced with concrete.

Past Crane Park Island, the two channels converge once again, and the river flows through a series of human-made deflectors which have re-naturalised the once-widened and straightened channel, creating marginal berms and shelves upon which reedbeds and other marginal vegetation has successfully established. Some of these deflectors are however in need of repair. Two smaller, inaccessible islands are present within the river further downstream towards Hospital Bridge Road, which are primarily dominated by mature trees and scrub.

The final 0.3km of this reach is the least accessible from the Richmond bankside, dominated by tall herb and bramble scrub vegetation, with a lot of overhanging crack willow and sycamore. However good views of the river are available from the bridge over the Great Chertsey Road (A316).

2. Management aims and vision

The overall aim of management is to create and modify riparian habitat so that it supports more wildlife. On *Reach #2*, this will be achieved primarily through the reduction of heavy shading, augmented by targeted in-channel improvements to the flow and function of the river, by creating additional deflectors and repairing and maintaining those that are existing.

Bankside tree management and in-channel restoration works should be approached holistically, utilising arisings from de-shading works to re-naturalise and re-meander the river.

**It should be noted that the Environment Agency has jurisdiction over the river channel and bed, and will occasionally undertake its own management on a reactive basis, usually in relation to the hydrological function of the river. Any in-in channel river enhancements are likely to be subject to the requirements of a Flood Risk Activities Permit (FRAP), for which an application will need to be made to the Environment Agency in advance.*

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Bankside tree management – NCC

Reduce shading over the river channel by carrying out targeted bankside tree management, focusing on a chosen 150-250m section of river in each year. To be carried out by Nature Conservation Contractor in liaison with Ecology Officer and Arboricultural Officer, each year an on-site meeting will be held to evaluate potential target areas and specify detail of final works.

1. Pollard selected large willows to a specified height as agreed with LBRuT Officers and FORCE.
2. Coppice or fell selected other large trees as agreed with LBRuT Officers and FORCE, prioritising non-natives.
3. Thin semi-mature bankside trees to increase light penetration, prioritising the sycamore and other exotic species.
4. Cut back or crown lift overhanging canopy trees from the river channel to increase light penetration.

River Reach #2: Hanworth Road to Hospital Bridge Road

5. Pollard and coppice willows along river bank at Crane Park Island on a 3-year rotational cycle.
6. Utilise all arisings for in-channel river restoration where possible, creating deflectors and spiling, or other bankside habitat features.

Prescription 2: Deflector creation and maintenance – NCC

Create a series of natural deflectors utilising arisings from bankside tree management as per *Prescription 1.*

1. Utilise material from bankside tree management where possible to create deflectors in the river. A number of methods can be used and often combined to create deflectors, including:
   a) Pinning large tree trunks into the river bank;
   b) Using stakes and binders to hold smaller brash and cordwood.
2. Maintain both newly created and existing deflectors to ensure that they are functioning properly, replenishing the appropriate materials and infrastructure where necessary.
   a) Check the deflectors by wading in appropriate conditions at least quarterly. During these visits, check out the following and undertake / arrange any follow-up works necessary:
   b) Any change in deflector position / fixing / stability, or change in condition of materials (especially brash bundles which have a limited lifespan); any feature showing signs of deterioration should be attended to with urgency.
   c) Visible changes in the channel related to the deflector – silt movement, channel scouring, bankside flooding or erosion, any increase in flood risk; add notes to file, discuss flood risk concerns with partners including EA.
   d) Any build-up of natural detritus at the deflector; remove any undesirable excess.
   e) Any build-up of litter / other debris; remove all from site with assistance of volunteers.
3. Where tree deflectors have continued to sprout growth, remove any that is considered to increase flood risk or reduce the benefits of the deflector, i.e., where growth is affecting marginal vegetation.

Prescription 3: Management of Millstream – NCC

Reduce shading over the Millstream river channel (B) by carrying out targeted bankside tree management. To be carried out by Nature Conservation Contractor in liaison with Ecology Officer and Arboricultural Officer.

1. Pollard selected large willows to a specified height as agreed with LBRuT Officers and FORCE.
2. Coppice or fell selected other large trees as agreed with LBRuT Officers and FORCE.
3. When on site, check for undesirable detritus and informal wood jams created by users which are obstructing flow.
4. Where the channel is choked by vegetation, hand-pull stems from the channel centre to help maintain flow.

Prescription 4: Channel clearance – NCC/Vols

The main river channel on the northern edge of Crane Park Island (C) is prone to becoming choked by in-channel vegetation such as common reed, bulrush and branched bur-reed. Manually remove vegetation from the centre of the channel to maintain the flow of water in the river.

1. Hand-pull vegetation from the channel to maintain a minimum 2m width of unobstructed flowing water.
2. Remove any large debris obstructing the flow of water through the centre of the channel.

Prescription 5: Concrete bank enhancement – NCC

The northern riverbank adjacent to the brick tower (D) is artificially re-inforced with concrete across a section of approximately 50m, forming part of the remains of the old mill workings. The river margin here will be enhanced by the installation of floating biohavens, to facilitate the establishment of marginal vegetation.

1. Pin floating biohavens into the artificial bank or riverbed to provide an anchor and substrate for the establishment of marginal vegetation.
2. Drill two holes into the artificial wall to create nesting opportunities for kingfisher.

Prescription 6: Dog-dipping area maintenance – FORCE

Maintain dead hedging which contains the dog dipping area at Hospital Bridge Meadow (E) to prevent unwanted expansion of this area and degradation to riparian habitat.

1. Top-up dead hedging as required using material from bankside tree management works.

Objective 3: Publicity, communication, and community involvement.

Prescription 7: Work in partnership with LB Hounslow – LBRuT/FORCE

Maintain communication with LBH and Greenspace 360.

1. Maintain contact with LBH and Greenspace 360 to ensure the strategic management of Little Park and Pevensey Road NR remains in concert.

4. Larger scale interventions

Future larger scale interventions on this reach of the river would likely be undertaken as an augmentation of the Crane Restoration and Engagement for Water Voles, Wetland and Woodland (CREW) Project which is currently ongoing on *Reach #1*. This would involve a more extensive approach to Prescriptions 1 and 2, to encompass the majority of the reach, reducing shade through tree and scrub works along the riverbank, complimented by the construction of marginal habitat in the form of deflectors, artificial berms and bank reprofiling. Additional in-channel works may include creating scour pools and addition of gravels.

Opportunities to create additional riparian wetland features in the form of backwaters and storm inlets exist on the northern riverbank, and the possibility of breaking out the Crane Park drain outfall to create a backwater wetland area has also been discussed.

The key aim of this enhancement project would be to re-introduce water voles along the reach, and encourage outward colonisation from Crane Park Island.

It is likely that additional sources of external funding will need to be sought to facilitate projects of this nature.

River Reach #2: Hanworth Road to Hospital Bridge Road

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Bankside tree management	**1**	All	All	All	All	All	Aug - Feb	**NCC**	Reduce shading over the river channel by carrying out targeted bankside tree management, focusing on a chosen 150-250m section of river in each year. Pollard and coppice willows along river bank at Crane Park Island on a 3-year rotational cycle.	Avoid bird nesting and roosting bats
P2: Deflector creation and maintenance	**1**	A, All	A, All	A, All	A, All	A, All	All year	**NCC**	Utilise material from bankside tree management where possible to create deflectors in the river. Maintain both newly created and existing deflectors to ensure that they are functioning properly, replenishing the appropriate materials and infrastructure where necessary.	Consider potential impacts to fish spawning
P3: Management of millstream	**1**	B	B	B	B	B	Oct - Feb	**NCC**	Reduce shading over the Millstream river channel by carrying out targeted bankside tree management. Check for undesirable detritus and informal wood jams created by users which are obstructing flow. Where the channel is choked by vegetation, hand-pull stems from the channel centre to help maintain flow.	Avoid bird nesting and roosting bats

River Reach #2: Hanworth Road to Hospital Bridge Road

P4: Channel clearance	**1**	C	C	C	C	C	Oct - Feb	**NCC/Vols**	Hand-pull vegetation from the channel to maintain a minimum 2m width of unobstructed flowing water. Remove any large debris obstructing the flow of water through the centre of the channel.	
P5: Concrete bank enhancement	**2**			D			All year	**NCC**	Pin floating biohavens into the artificial bank or riverbed to provide an anchor and substrate for the establishment of marginal vegetation. Drill two holes into the artificial wall to create nesting opportunities for kingfisher.	Consider potential impacts to fish spawning
P6: Dog-dipping area maintenance	**2**	E	E	E	E	E	As required	**FORCE**	Top-up dead hedging as required using material from bankside tree management works.	
P7: Work in partnership with LB Hounslow	**2**						All year	**LBRuT/ FORCE**	Maintain regular contact.	

River Reach #3: Hospital Bridge Road to Mereway Fish Pass

River Reach #3: Hospital Bridge Road to Mereway Fish Pass

1. Overview

This reach of the river constitutes the final stretch before the divergence with the Duke of Northumberland's River where the Lower Crane becomes a culverted, concrete-lined channel with heavily restricted public access. It flows from Hospital Bridge Road, downstream to the Meadway Bridge and then through Kneller Gardens, where it then diverges.

At the upstream end of this reach, the riverbank is relatively shallow, and is bordered by woodland to the south, and grassland meadow with a fringe of bramble scrub to the north. A large berm is present on the northern bank adjacent to Lincoln Field, which holds a well-established reedbed. The riverbank then becomes very steep and much deeper, between approximately 1.5 and 2m on average down to the Meadway Bridge. The channel is heavily shaded throughout this section, primarily by sycamore, but also willow and ash, with trees of a mixture of age ranges from young saplings to late-mature. Where light does manage to penetrate to the steep banks, dense bramble is usually dominant. There is little marginal vegetation within this reach of the river.

The dynamics of the river flow are fairly heterogeneous here, with some areas of deep and slow-flowing water and other shallower areas characterised by higher-flows with riffles over larger gravel substrates, in particular around the Mill Road footbridge in the centre of this reach. A river-fly monitoring point is located here opposite the Mill Road allotments.

The river diverges at the eastern end of Fulwell Meadow, where a backwater channel flows around the southern edge of the Mill Road Meadow and woodland area, which sits upon an island. This channel rejoins the river just past the Mill Road allotments. It is to the north-eastern end of this channel that one of the well-used artificial kingfisher banks is located, well-concealed by remnants of the old bankside mill workings. The channel itself is heavily shaded and slow-flowing with a number of obstructions from large, fallen trees.

At the downstream end of this reach, in Kneller Gardens, the river once again has shallow banks, which are reinforced with the remnants of the old wooden revetment. There is a considerable amount of shade from a number of larger trees, however the northern riverbank is generally more open and accessible. The southern riverbank adjacent to the Meadway allotments is obscured by some semi-mature trees and shrubs. Kneller Gardens is a popular area for waterfowl on the river, such as mandarin ducks, mallards and Egyptian geese.

2. Management aims and vision

The overall aim of management is to create and modify riparian habitat so that it supports more wildlife. On *Reach #3*, this will be achieved primarily through the reduction of heavy shading, augmented by targeted in-channel improvements to the flow and function of the river, by creating additional deflectors and backwater features. The riverbank will be renaturalised where possible and bank reprofiling could be employed to provide marginal shelves and berms for the establishment of vegetation.

**It should be noted that the Environment Agency has jurisdiction over the river channel and bed, and will occasionally undertake its own management on a reactive basis, usually in relation to the hydrological function of the river. Any in-in channel river enhancements are likely to be subject to the requirements of a Flood Risk Activities Permit (FRAP), for which an application will need to be made to the Environment Agency in advance.*

3. Prescriptions

Objective 1: Nature conservation

Prescription 1: Bankside tree management – NCC

Reduce shading over the river channel by carrying out targeted bankside tree management, focusing on a chosen 150-250m section of river in each year. To be carried out by Nature Conservation Contractor in liaison with Ecology Officer and Arboricultural Officer, each year an on-site meeting will be held to evaluate potential target areas and specify detail of final works.

1. Pollard selected large willows to a specified height as agreed with LBRuT Officers and FORCE.
2. Coppice or fell selected other large trees as agreed with LBRuT Officers and FORCE, prioritising non-natives.
3. Thin semi-mature bankside trees to increase light penetration, prioritising the sycamore and other exotic species.

River Reach #3: Hospital Bridge Road to Mereway Fish Pass

4. Cut back or crown lift overhanging canopy trees from the river channel to increase light penetration.
5. Utilise all arisings for in-channel river restoration where possible, creating deflectors and spiling, or other bankside habitat features.

Prescription 2: Deflector creation and maintenance – NCC

Create a series of natural deflectors utilising arisings from bankside tree management as per *Prescription 1.*

1. Utilise material from bankside tree management where possible to create deflectors in the river. A number of methods can be used and often combined to create deflectors, including:
   a) Pinning large tree trunks into the river bank;
   b) Using stakes and binders to hold smaller brash and cordwood.
2. Maintain deflectors to ensure that they are functioning properly, replenishing the appropriate materials and infrastructure where necessary.

Prescription 3: Reedbed management – NCC

Manage the reedbed near hospital bridge road to maintain its favourable condition and biodiversity value.

1. Remove undesirable and invasive species from the reedbed, including Himalayan balsam and bindweed.
2. Ensure that the river channel is clear of reeds by a minimum of 5m to maintain the flow of water.

Prescription 4: Kingfisher bank maintenance – FORCE

Repair and maintain the artificial kingfisher bank (B) at Mill Road. Monitor usage during summer months.

4. Larger scale interventions

Potential larger scale interventions on this reach of the river include the following:

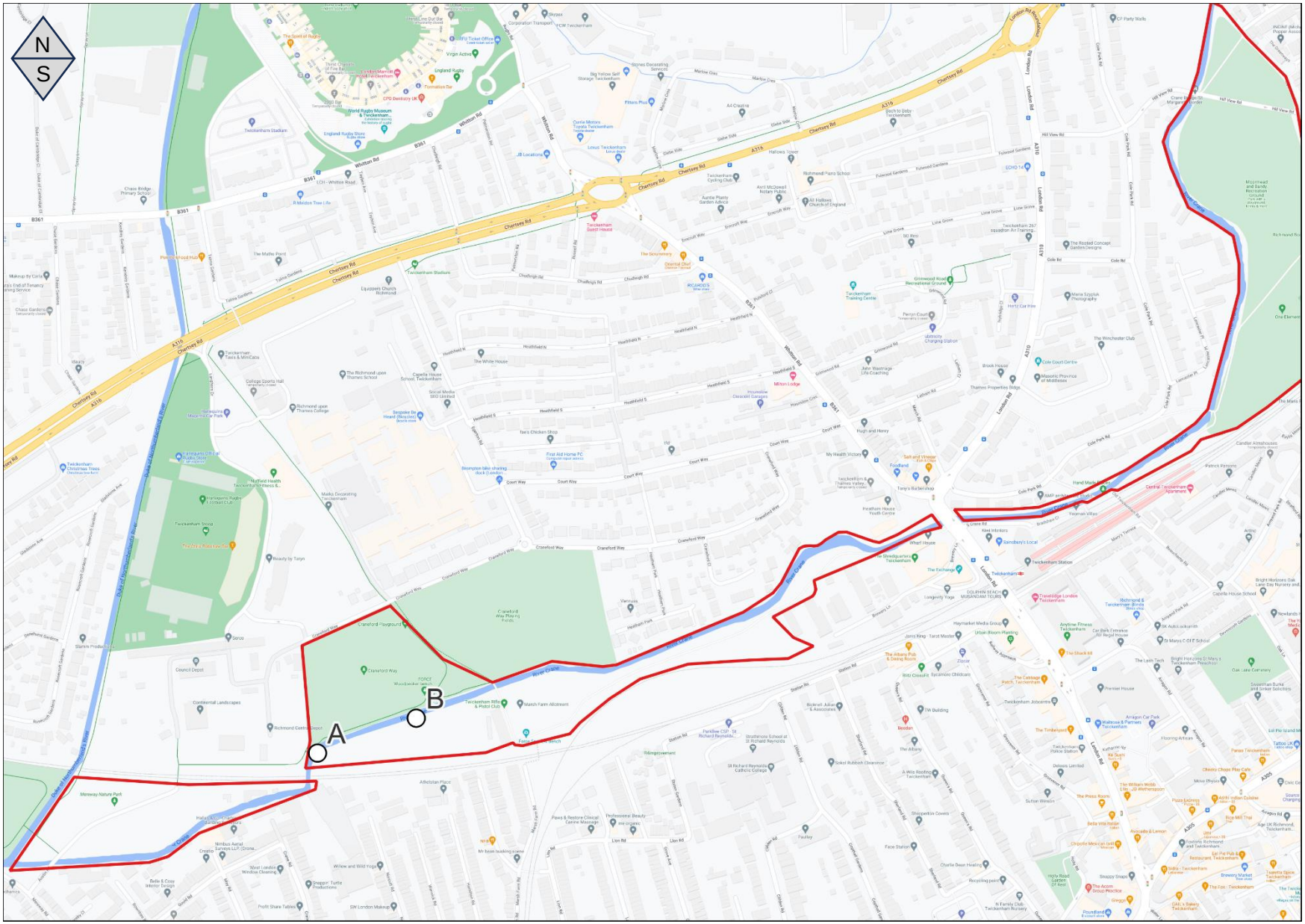
- Marginal backwater creation
- River-bank reprofiling
- Rock-roll deflectors at Mill Road Bridge
- Artificial berm creation
- Addition of gravels
- Dredging of backwater channel at Mill Road

It is likely that additional sources of external funding will need to be sought to facilitate projects of this nature.

River Reach #3: Hospital Bridge Road to Mereway Fish Pass

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Bankside tree management	**1**	All	All	All	All	All	Aug - Feb	**NCC**	Reduce shading over the river channel by carrying out targeted bankside tree management, focusing on a chosen 150-250m section of river in each year.	Avoid bird nesting and roosting bats
P2: Deflector creation and maintenance	**1**	A, All	A, All	A, All	A, All	A, All	All year	**NCC**	Utilise material from bankside tree management where possible to create deflectors in the river. Maintain both newly created and existing deflectors to ensure that they are functioning properly, replenishing the appropriate materials and infrastructure where necessary.	Consider potential impacts to fish spawning
P3: Reedbed management	**1**	A	A	A	A	A	Jun - Sep	**NCC**	Remove undesirable and invasive species from the reedbed, including Himalayan balsam and bindweed. Ensure that the river channel is clear of reeds by a minimum of 5m to maintain the flow of water.	Avoid impacts to nesting birds
P4: Kingfisher bank repair and maintenance	**1**	B	B	B	B	B	Oct - Feb	**FORCE**	Repair and maintain the artificial kingfisher bank at Mill Road. Monitor usage during summer months.	

River Reach #4: Mereway Fish Pass to Moormead and Bandy Recreation Ground



River Reach #4: Mereway Fish Pass to Moormead and Bandy Recreation Ground

1. Overview

This reach of the river marks the start of what is formally known as the 'Lower Crane', a reach of the River Crane which sits within the Lower Crane Valley and is characterised by an artificially straightened, widened, reinforced and artificially widened watercourse, interrupted by a number of weirs. These modifications have prevented natural river function and significantly degraded the ecological and geomorphological function of the watercourse.

Shading is less of a prominent issue on this section of the Crane, however the river is still shaded heavily in some places, such as through the eastern end of Twickenham Junction Rough and at Moormead and Bandy Recreation Ground, where the River still borders semi-natural habitats. Much of the riverbank along this reach is bordered by urban development and residential areas. Access to the river is limited, prevented by a large chainlink fence or dense scrub in most places.

A pilot river restoration project was undertaken in 2021 at Twickenham Rifle Club, where a 30m section of the riverbank was broken out. A marginal backwater was created behind the breakout and planted with native marginal vegetation, whilst a vegetated berm was created on the opposite bank using rock rolls and hydroseeded coir pallets. Following this, a detailed schedule of management and enhancement has already been laid out for this reach of the river in the Lower Crane Re-Naturalisation and Enhancement Plan (ZSL, 2023). This identifies 5 further large-scale interventions that could be made on the Lower Crane to re-naturalise the river and improve its physical and ecological function. It also identifies a number of smaller scale improvements and ongoing management regimes which would benefit the river more generally. The management prescriptions for *Reach #4* in this management plan have been separated into those which can be implemented on a routine or non-specialist basis, and those which are likely to necessitate bespoke project work delivered by a specialist contractor, likely utilising external sources of funding.

2. Management aims and vision

The aims for this reach of the Lower Crane are as identified in the Lower Crane Re-Naturalisation and Enhancement Plan:

- Create and modify habitat so that it supports more wildlife;
- Modify in-channel structures that block the migration of fish to restore the ecological connection between the Crane and the wider Tidal Thames;
- Make space for water and modify the channel to reduce the threat of flooding and make the river more resilient to low flows;
- Make the Lower Crane river reach an asset for local people to enjoy.

**It should be noted that the Environment Agency has jurisdiction over the river channel and bed, and will occasionally undertake its own management on a reactive basis, usually in relation to the hydrological function of the river. Any in-in channel river enhancements are likely to be subject to the requirements of a Flood Risk Activities Permit (FRAP), for which an application will need to be made to the Environment Agency in advance.*

3. Prescriptions

As the river on this reach is largely inaccessible with artificially re-inforced, vertical concrete banks, the practicalities of routine management are relatively limited, restricted to the maintenance of existing enhancements.

<u>Objective 1: Nature conservation</u>

Prescription 1: Marginal vegetation management – FORCE

Hand pull marginal vegetation as necessary at the site of the Rifle Club Pilot Project (A), to prevent it becoming too dense or choking the channel. Remove undesirable species such as greater reedmace *(Typha latifolia)*.

Prescription 2: Kingfisher bank maintenance – FORCE

Repair and maintain the artificial kingfisher bank (B) at Twickenham Rifle Club. Monitor usage during summer months.

River Reach #4: Mereway Fish Pass to Moormead and Bandy Recreation Ground

4. Larger scale interventions

Full details of potential larger-scale interventions on this reach are detailed in the *Lower Crane Enhancement and Restoration Plan*. Strategies include:

- Weir removal and fish passage installations
- Artificial bank break-out
- Addition of gravels
- Berm creation
- Dual-flow channels

Five sites along this reach have been identified for larger scale interventions:

1. Mereway Nature Reserve
2. Twickenham Rifle Club (Phase 2)
3. Richmond upon Thames College
4. London Road
5. Moormead and Bandy Recreation Ground

It is likely that additional sources of external funding will need to be sought to facilitate projects of this nature. The London Road and Mereway projects are expected to be completed during early 2024.

River Reach #4: Mereway Fish Pass to Moormead and Bandy Recreation Ground

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Marginal vegetation management	**1**	A	A	A	A	A	Oct - Feb	**FORCE**	Manage marginal vegetation as necessary at the site of the Rifle Club Pilot Project, to prevent it becoming too dense or choking the channel.	
P2: Kingfisher bank repair and maintenance	**1**	B	B	B	B	B	Oct - Feb	**FORCE**	Repair and maintain the artificial kingfisher bank at Twickenham Rifle Club. Monitor usage during summer months.	

Duke of Northumberland's River

Southern sub-reach

Northern sub-reach

Duke of Northumberland's River

1. Overview

The Duke of Northumberland's River (DNR) is an artificial watercourse which was constructed in the sixteenth century to supply water to mills in Isleworth. It was purchased from the Duke of Northumberland by Middlesex County Council in 1931. It diverges from the River Crane at Mereway Nature Park and flows northward up into the Borough of Hounslow where it eventually joins the River Thames near Isleworth Ait. Two Sites of Borough Importance for Nature Conservation are encompassed by the DNR.

The section of the river which lies within London Borough of Richmond upon-Thames runs from Mereway Nature Park in the south up to Whitton Dene in the north, spanning approximately 1.44km. This reach can be broadly divided into two sub-reaches, as shown in the maps on the previous page, which include the southern sub-reach south of the A316, and the northern sub-reach, north of the A316. In the northern sub-reach, it becomes primarily a concrete lined channel; whilst to the south, a larger proportion of the riverbank has not been re-inforced. The land to the west of the river is primarily dominated by residential housing, which is replaced by sports pitches to the north of Kneller Road, whilst the land to the east is dominated by the two local rugby stadia and their surrounding infrastructure; The Twickenham Stoop (C) bordering the southern sub-reach, and Twickenham Rugby Stadium (D) bordering the northern sub-reach. A gravel-surfaced towpath runs along the eastern bank of the river.

The DNR is an important biodiversity corridor within the urban landscape and provides connectivity between the River Crane and the River Colne. It has an interchangeable habitat structure along the length of the Twickenham reach, with varying degrees of shading from trees and marginal vegetative cover. The most heavily shaded sections of the DNR are between Mereway and the A316, and the most northerly 400m up towards Whitton Dene. Conversely, the sections with the most established marginal habitat are opposite Chase Bridge Primary School (B), and between the A316 and Kneller Road, where river enhancement work was carried out by LBRuT and FORCE in 2018 and 2019, to create a more naturally functioning river channel by pinning coir rolls and pallets into the concrete bank.

2. Management aims and vision

The overall aim of management is to create and modify riparian habitat so that it supports more wildlife. On *Duke of Northunmberland's RIver*, this will be achieved primarily through the reduction of heavy shading, augmented where possible by targeted in-channel improvements to the flow and function of the river, by creating artificial berms using coir rolls and pallets.

**It should be noted that the Environment Agency has jurisdiction over the river channel and bed and will occasionally undertake its own management on a reactive basis, usually in relation to the hydrological function of the river. Any in-in channel river enhancements are likely to be subject to the requirements of a Flood Risk Activities Permit (FRAP), for which an application will need to be made to the Environment Agency in advance.*

3. Prescriptions

Prescription 1: Marginal vegetation management – NCC/Vols

The marginal vegetation which has been established along the river requires regular maintenance to maintain good condition and proper functionality of the river channel.

1. Hand pull vegetation where it is choking the central channel to maintain a minimum of 2m unimpeded water flow. Remove excessive vigorous species such as branched bur-reed and greater reedmace, as well as any invasive species.
2. Check coir fixings at six-month intervals.
3. Cut back scrub vegetation overhanging the floating biohavens.
4. Thin out / remove any dense stands of competitive marginal species.
5. Remove / manage non-natives – particularly orange balsam and Russian vine, check for recurrence of monkeyflower.

Prescription 2: Bankside tree management – NCC

Reduce shading over the river channel by carrying out targeted bankside tree management. To be carried out by Nature Conservation Contractor in liaison with Ecology Officer and Arboricultural Officer, each year an on-site meeting will be held to evaluate potential target

areas and specify detail of final works. It is accepted that opportunities for tree management will be limited on the DNR as many of the trees overshadowing the channel are not on Council-owned land.

1. Pollard selected large willows to a specified height as agreed with LBRuT Officers and FORCE.
2. Coppice or fell selected other large trees as agreed with LBRuT Officers and FORCE, prioritising non-natives.
3. Thin semi-mature bankside trees to increase light penetration, prioritising the sycamore and other exotic species.
4. Cut back or crown lift overhanging canopy trees from the river channel to increase light penetration.
5. Utilise all arisings for in-channel river restoration where possible.

Prescription 3: Erosion protection – GMC

Maintain post and rail fencing in good condition as required to protect areas of bank erosion (A).

4. Larger scale interventions

Following de-shading works, where they are possible, it is desirable to replicate the river enhancement measures which have been implemented on the section between Kneller Road and the A316, by installing coir rolls and pallets which encourage the establishment of artificial berms and narrow the straight river channel, creating meanders. The addition of gravels would also help to manipulate the flow of the channel and provide fish-spawning habitat.

Duke of Northumberland's River

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Marginal vegetation management	**1**	All	All	All	All	All	Oct - Feb	**NCC/VoIs**	Hand pull vegetation where it is choking the central channel to maintain a minimum of 2m unimpeded water flow. Check coir fixings at six-month intervals. Cut back scrub vegetation overhanging the floating biohavens. Thin out / remove any dense stands of competitive marginal species. Remove / manage non-natives – particularly orange balsam and Russian vine, check for recurrence of monkeyflower.	Avoid bird nesting
P2: Bankside tree management	**1**	All	All	All	All	All	Oct - Feb	**NCC**	Reduce shading over the river channel by carrying out targeted bankside tree management	Avoid bird nesting, consider impacts to roosting bats
P3: Erosion protection	**1**						As required	**GMC**	Maintain post and rail fencing in good condition as required to protect areas of bank erosion	

7.0 General maintenance prescriptions

The following detailed general prescriptions are designed to manage site features throughout the Lower Crane Valley to deliver the site vision and objectives; the detailed management aim and rationale are given where relevant. The management is not set in stone and must be reviewed and updated based on evidence observed on site, even year to year, so that management is in response to the observed condition or any environmental change.

7.1 Objective 1: Nature Conservation

7.1.1 **Prescription 1: Woodland Management** – **NCC/vols**

Broad Leaved Woodland is a Richmond Biodiversity Habitat Action Plan and this habitat is extensive throughout the Lower Crane Valley.

1. Remove exotic species as described in site specific prescriptions. Where exotics are the dominant species remove 1 in 3 by thinning to allow natural succession and use stump treatment to prevent regrowth
2. Cordwood should be stacked for habitat / deadwood value and brash piles**
3. NCC to be responsible for trees < 10cm at 1.3m DBH. Council Arboricultural Contractors will be required for larger trees (guide of >10cm DBH).
4. Retain canopy deadwood away from paths.
5. Ivy to be removed off pathside, mature or specimen trees, elsewhere ivy can be left until reaching canopy layer and becomes a weight issue, in which control must be implemented.Maintain a mixed woodland understorey and increase light reaching the field layer by thinning/coppicing dense sections and boundary areas on a 10-year rotational cycle with no more than 1/10th of the site cut in any one year.
6. Where tree pruning is required, wounds should be kept to the minimum diameter necessary.
7. Works to be carried out outside of bird nesting season unless urgent and are visually checked for nesting birds.
8. Where appropriate replant suitable native species in appropriate locations as agreed by Appropriate Council Officer and Friends of River Crane Environment.

7.1.2 **Prescription 2: Trees over 10cm at 1.3m DBH** – **AC**

The Lower Crane Valley has a number of large and mature trees which provide good habitat for a wealth of species and connectivity. Appropriate management is integral to their longevity. Topics of particular interest within the Lower Crane Valley include replenishing the dying native elms with disease resistant varieties, and nurturing the growing population of native black poplars within the landscape.

1. Manage tree stock as LBRuT policy.
2. Survey tree stock as LBRuT Policy.
3. Continually review tree stock in relation to the impacts of climate change.
4. Monitor for signs of tree pests and diseases in the Lower Crane Valley and respond to any new outbreaks accordingly following consultation with Appropriate Council Officer.

5. AC to liaise with Appropriate Council Officer, FORCE and the NCC before undertaking any works on site.

7.1.3 **Prescription 3: General invasive species management** – **LBRuT/NCC**

Invasive species must be either eradicated or controlled depending upon species. In the context of the River Crane corridor, individual infestations must not be viewed in isolation and are the result of a landscape-scale issue which will require partnership working between all London Boroughs and external stakeholders throughout the Crane Valley in order to tackle effectively in the long-term.

The London Boroughs of Richmond upon-Thames and Hounslow will continue to work with the Crane Valley Partnership and the other London Boroughs in the catchment to work towards a long-term collaborative strategy to eradicate INNS including Himalayan balsam as far as possible within the catchment. As this strategy develops, LBRuT will continue to adopt a programme of intermediate control.

Those species of a hazardous nature such as Giant Hogweed, Japanese Knotweed or Oak Processionary Moth will be treated by LBRuT. Balsam *(See Section 7.1.4)* and selected non-native herbaceous species should be controlled by the NCC, unless agreed with the Appropriate Council Officer.

1. Any treatment of non-native herbaceous species, Creeping thistle, holm oak and tree of heaven, must be approved by Appropriate Council Officer prior to commencing and must be done according to best practice.
2. Where stands of hazardous non-native plants are identified, Nature Conservation Contractor to prepare map and advise the Appropriate Council Officer within 24 hours for dissemination to the Grounds Maintenance Contractor/Arboriculture Officer as appropriate.

7.1.4 **Prescription 4: Himalayan balsam management** – **FORCE/NCC**

Himalayan balsam *(Impatiens glandulifera)* infestation is a widespread problem throughout the River Crane Corridor. As with many of the other invasive species extant locally, as described in *Section 7.1.3*, individual infestations must not be viewed in isolation and are the result of a landscape-scale issue which will require partnership working between all London Boroughs and external stakeholders throughout the Crane Valley in order to tackle effectively in the long-term. The Lower reaches of the Crane Valley, which run through the London Borough of Richmond upon-Thames and part of Hounslow, are the furthest downstream prior to the River's confluence with the Thames, presenting a continuous risk of further infestation via the river channel.

The London Boroughs of Richmond upon-Thames and Hounslow will continue to work with the Crane Valley Partnership and the other London Boroughs in the catchment to work towards a long-term collaborative strategy to eradicate INNS including Himalayan balsam as far as possible within the catchment. As this strategy develops, LBRuT will continue to adopt a programme of intermediate control.

1. FORCE will co-ordinate a systematic approach to Himalayan balsam control in the Lower Crane Valley, with volunteer work groups targeting high priority areas for hand-pulling primarily during the months of June and July;
2. Volunteer action to control balsam on the river will be supplemented by the NCC, who will liaise directly with FORCE to align efforts with the overarching programme.
3. High priority areas for balsam control include, but are not limited to, Little Park/Pevensey Road Nature Reserve, Crane Park Island, the reedbed at Hospital Bridge Road, and around Meadway Bridge.

7.2 Objective 2: Visitor Experience

7.2.1 **Prescription 5: Amenity grass and pathside maintenance** – **GMC (with advice from FORCE)**

1. Grounds Maintenance Contractor to cut amenity grass and 0.5m pathway strips on a monthly basis across all sites.
2. Benches and park furniture to be neatly stimmed round.
3. NCC to report any issues to the Appropriate Council Officer/GMC within 24 hours**.**

7.2.2 **Prescription 6 Maintain pathways, boundaries, check site and structures** – **GMC/NCC/FORCE**

Provide a welcoming and clean visitor environment with clear entrance and paths, including free from trip hazards, NCC to liaise with GMC where necessary.

1. GMC to carry out vertical edging and pathside strip cuts on paths and boundaries as necessary to maintain the site in line with the specification of the Grounds Maintenance Contract. Potential impacts to nesting birds must be considered.
2. At other times and only where necessary, NCC to carry out minor vertical edging (subject to bird nesting/wildlife restraints).
3. Overhanging vegetation / branches (vertical edging) alongside pathways should be checked and pruned regularly to ensure height clearance above the path is maintained. Tree issues involving larger branches or the necessity to work at height will need to be referred to the Appropriate Council Officer for liaison with the Arboriculture Team.
4. NCC/FORCE to top up and maintain woodchip pathways to ensure weed free coverage.
5. Infrastructure and signage should be checked regularly, and any defects reported to the Appropriate Council Officer within 24 hours.
6. Pathway to be kept clear of vigorous weeds and trip hazards.
7. All occurrences of rough sleeping should be reported to the Appropriate Council Officer and Parks Patrol Officers within 24 hours.
8. NCC to liaise with Parks Patrol Officers and the Homeless Charity SPEAR if required It will be the NCC's responsibility to remove (or in the case of controlled or dangerous substances report to arrange removal of) any litter or rubbish from rough sleepers or fly-tipping, animal carcasses etc as well as repair any damage done.

7.2.3 **Prescription 7: Litter collection** – **NCC**

All Nature Conservation Sites must be kept free of litter. The bins should be emptied under the Parks Cleansing contract at least three times per week.

1. Litter picks to be carried out on a regular basis, any large items or fly tip to be reported to Appropriate Council Officer within 24 hours, including items in the river channel;
2. Regular scavenge picks to be carried out by GMC.

7.3 Objective 3: Publicity, communication, and community Involvement

7.3.1 Prescription 8: Publicity and communication – H&H/FORCE

The Council is keen for Habitats and Heritage to raise the profile of the Lower Crane Environment and ensure regular communication with the Friends group, residents and interested parties.

1. FORCE to advertise their events through social media and on-site posters
2. FORCE to submit a twice-yearly work summary/future task list for agreement with the Appropriate Council Officer at review meetings.

7.3.2 Prescription 9: Community involvement – NCC/FORCE/Vols

Residents and the local community are very important to the Council and it is a requirement that a greater element of community involvement is available to residents should they want them.

1. NCC to carry out an annual community day inviting residents to visit the site and get involved.
2. NCC to ensure that a wide variety of tasks are available for different abilities
3. NCC to ensure Risk assessment and Method Statements are up to date and relevant.
4. NCC with the support of H&H and LBRuT to support the FORCE to carry out their tasks safely and efficiently, with appropriate training and guidance.

7.4 Objective 4: Monitoring and Management Planning

7.4.1 Prescription 10: Monitor key species and habitats. – H&H/ FORCE

To inform future management plans, species and habitat information should be collated. Key species and habitats including, but not restricted to, those featured within the Richmond Biodiversity Action Plan and those classed as 'priority' by the Biodiversity 2020: A strategy for England's wildlife and ecosystem services.

1. On each site visit sightings to be collated and reported back to the Appropriate Council Officer and Habitats and Heritage (H&H) for recording.Where a sighting is imminently important to the management of a site (such as bird nesting, uncovering of a badger sett/fox earth etc) the impacts must be discussed with the Appropriate Council Officer and a decision taken to continue the works or not.
2. Every year identify a key community or group to monitor to inform management success. Examples are breeding song thrushes and other woodland birds, foraging bats; key plants such as meadow cranes-bill; or groups such as deadwood invertebrates. Expert help should be sought where required.
3. *Section 9.0* sets out further guidance on monitoring and recording.

7.4.2 **Prescription 11: Review Management and Work Plans – LBRuT, NCC & FORCE**

The plan should be seen as a live document for ongoing editing and updating, no plan can anticipate every situation or environmental response and it is vital that management be reviewed every year and the subsequent work programme adjusted. To ensure that management remains on track to deliver the site vision and objectives, the completed actions must be reviewed each year and if necessary, the following years actions updated. The following reviews will be undertaken:

1. Twice yearly site visits will be undertaken with the Appropriate Council Officer to assess work progress and any issues.
2. This management plan will be fully reviewed at the end of every 5-year period (next in 2028) to evaluate achievements of the site vision and objectives. At this time useful feedback from those involved in management together with requirements for further funding and resources should be considered and used to produce an updated management plan for the next five year period, as appropriate.
3. An annual 'Community Meeting' between LBRuT, NCC and local community groups, including FORCE, Friends of Kneller Gardens, Friends of Moormead and Bandy Rec and Richmond Green Gym to discuss the ongoing socio-environmental considerations associated with the Lower Crane Valley, including:
    a) Usage
    b) Access
    c) Pathways
    d) Signage and publicity
    e) Facilities
    f) Heritage and archaeology
    g) Community engagement
    h) Arts and sport
    i) Litter
    j) Ambitions
    k) Funding
    l) FORCE community learning programme

7.5 Tree Health and Safety works

7.5.1 **Prescription 12: Dangerous trees procedure – AC/NCC**

All council nature conservation sites are surveyed by Council Tree Officers every two years and any required works will be specified and undertaken by the Councils Arboriculture Contactor within an appropriate time period.

Reactive Health and Safety tree works will be carried out by the Council's Arboriculture Contactor as required. However minor remedial works may be carried out by the NCC with prior approval of the Arboriculture Manager.

1. Nature Conservation Contractor to report any hazardous trees to the Tree Technical Support Team immediately.

Lower Crane Environment General Work programme 2024 - 2028

Prescription	Priority	Year and compartment					Usual Timing	Lead resource	Prescription details	Comments
		2024	2025	2026	2027	2028				
P1: Woodland management	**1**	All	All	All	All	All	Nov - Feb	**NCC/FORCE**	Maintain 10% of woodland in each compartment per year, predominately removing non-native species	Consider impacts to bird nesting and bats
P2: Trees over 10cm DBH	**1**	All	All	All	All	All	As required	**AC**	Carry out tree works as required, in liaison with Appropriate Council Officer, NCC and FORCE.	Impacts to bats, owls and nesting birds
P3: General Invasive species management	**1**	All	All	All	All	All	April - Oct	**LBRuT/NCC**	Monitor and report any new stands to Appropriate Council Officer within 24 hours. Control balsam and any other non-native herbaceous species	
P4: Himalayan balsam management		All	All	All	All	All	Jun-Jul	**FORCE/NCC**	Co-ordinate a systematic approach to hand-pulling of balsam on the Lower Crane, focusing primarily on high-priority areas.	
P5: Maintain amenity grassland and pathways	**1**	All	All	All	All	All	April - Nov	**GMC with advice of FORCE**	As per amenity grass schedule	Ensure benches/signs are neatly cut round
P6: Maintain pathways, check site and structures	**1**	All	All	All	All	All	April - Sept	**NCC/FORCE**	Keep paths clear of overhanging obstructions, check structures. Cut back vegetation so no over hanging on paths	Avoid bird nesting
P7: Litter collection	**1**	All	All	All	All	All	All year	**NCC / GMC**	Litter pick when on site, any sharps/inappropriate/ large/bulky litter and fly tipping to be reported to Appropriate Council Officer	
P8: Publicity and Communication	**1**	All	All	All	All	All	All year	**H&H/FORCE**	Raise profile of Lower Crane Environment through social media and on-site posters	Work with LBRuT Comms, H&H
P9: Community Involvement	**1**	All	All	All	All	All	All year	**NCC/FORCE**	Encourage community participation through appropriate social media.	H&H to provide support where necessary

P10: Monitor key species and habitats	**1**	All	All	All	All	All	As appropriate	**NCC/FORCE**	Suggest that the presence of the key flora and fauna species are monitored in order to inform management.	H&H to provide support where necessary
P11: Review management plan and work programme	**1**	All	All	All	All	All	Mar & Sep (1); Aug (2); Nov (3)	**LBRuT / NCC/ FORCE**	Twice-yearly site visits with appropriate Council Officer; Annual meeting in August to discuss forthcoming year. Annual and six-monthly reports to be reviewed; Annual 'Community Meeting'.	Six monthly report and meetings as and when required.
P12: Dangerous trees procedure	**1**	All	All	All	All	All	As appropriate	**AC/NCC**	Nature Conservation Contractor to report any hazardous trees to the Tree Technical Support Team immediately.	

7.5 Priority levels

1 – Very important for the maintenance of the key habitats, species or visitor amenity
(i.e. annual meadow cut) and should reflect the bare minimum of what should be achieved each year.
2 – Of secondary importance to the key tasks, to be done if more time / resources are available (i.e. coppicing / thinning a secondary woodland boundary to a meadow, or additional survey work); priority 2 tasks could become 1s if not completed for a number of years.
3 – Luxury, wish list tasks: nice to do but not important if resources are not available; these items might become priority 2s over time if not completed but are unlikely ever to reach priority 1 unless significant change in other factors.

1 – Priorities in red mean the task was not completed as scheduled.
R – Reactive, unplanned work, may be coupled with a numerical priority, i.e. R1

8.0 River corridor ecology

At a landscape level, the Lower Crane river corridor provides vital habitat and connectivity for wildlife, a historic network of trees and woodlands, and a pathway for the long-distance spread of invasive non-native species. It is important to look at the ecology of species and species groups in the context of the river corridor in addition to each site individually. This section addresses key considerations and outlines management strategies for some of the species/species groups and habitats of highest significance in the Lower Crane Valley.

8.1 Bats and other nocturnal wildlife

Seven species of bat have been recorded on the River Crane; common, soprano and Nathusius' pipistrelle, Daubenton's bat, noctule, Leisler's bat and brown long-eared bat. The Lower Crane Valley is a highly important landscape corridor for bats in the West London region, providing a network of high-quality roosting, foraging and commuting habitat.

Artificial nocturnal illumination can have severe impacts on some bat species and their prey, in particular the Daubenton's and brown long-eared bat in this locality. The requirement for any new artificial lighting within close proximity to the River Crane and its surrounding habitats must therefore be considered extremely carefully, and the Lower Crane Valley must be managed as a dark corridor for nocturnal wildlife. The leaflet on *Rivers & Light Pollution*, produced by Richmond Biodiversity Partnership, provides further information.

Roosting bats must be considered at an early stage prior to any management and maintenance works within the Lower Crane Valley. Bats and their roosting places are protected by law, including when they are not currently occupied. Potential roosting habitats within the Lower Crane Valley include trees, bridges, buildings and tunnels. It may be necessary to consult a bat specialist Ecologist when planning works that may impact bats.

The prescribed habitat enhancements in the Lower Crane Valley will benefit bats by providing additional roosting and foraging habitat in the form of a healthy, naturally functioning rivercourse with ample riparian vegetation, and surrounding habitats with diverse structure and species composition which support an abundant invertebrate food source.

8.2 Kingfisher

There are numerous pairs of breeding kingfisher in the Lower Crane Valley. An extremely successful Kingfisher bank was built by volunteers six years ago in Crane Park, and has since supported up to 3 broods per year, whilst another at Twickenham Rifle and Pistol Club is in need of repair. Efforts to further increase the population of kingfishers on the Lower Crane will be made through the creation and installation of new kingfisher banks, and augmented by the riverbank re-naturalisation work on the culverted section of the Lower Crane from Mereway to Moormead and Bandy Recreation Ground, which will create more nesting habitat. Kingfishers will also undoubtedly benefit from other aspects of river restoration that will aid the upstream movement and available breeding habitat for fish within the Lower Crane Valley. More information can be found in the *Lower Crane Enhancement and Restoration Plan*.

8.3 Fish

At least 17 species of fish are present in the Crane catchment, including stone loach, minnow, bullhead, 3-spined stickleback, roach, gudgeon, chub, flounder, sea trout, European eel, sea bass, European smelt, thin lipped grey mullet and common goby, carp and pike. Fish populations within the catchment have been significantly affected by pollution in the last 20 years, with major pollution events occurring in 2011 and 2013 that involved sewage

discharge into the river. Populations have since made a significant recovery supplemented by restocking with 7500 fish in 2014, and in 2022 a fish-pass was installed at the weir Mereway Nature Reserve, at the upstream end of the culverted, concrete reach of the 'Lower Crane', to aid the passage of fish from the tidal reaches of the river upstream into the freshwater inland reaches. There are still however a number of obstructions to fish passage and fish breeding, such as other weirs, low flows and heavily silted river beds, as well as the threat of future pollution events. The management, enhancement and restoration prescriptions for the river reaches within this management plan will aim to improve aquatic habitat to facilitate fish migration and breeding. Any works taking place within the river channel must take into account potential impacts to seasonal fish spawning and migration.

8.4 Water vole

The Lower Crane once supported a healthy population of water voles prior to the arrival of American mink, which through predation came close to causing a local extinction of the species. A small, isolated population remains in the reedbeds at Crane Park Island Local Nature Reserve. In recent years, an intensive, borough and river wide mink control programme has been initiated, spearheaded by Richmond Biodiversity Partnership, the Crane Valley Partnership and ZSL.

Water voles will be re-introduced on the Lower Crane at Little Park in Summer 2024, following recent habitat enhancement to the river and adjacent wetland areas which will give the reintroduction the best chance of success. The re-introductions will support the survival of the remaining population of Crane Park Island and act as a source for future recolonisation of other sections of the river both up and downstream. Further opportunities to enhance the riparian habitat and re-introduce water voles on the Lower Crane are being explored, as described in *Section 6.0* of this report.

Water voles and their burrows are protected by law, and therefore must be considered at an early stage prior to any works impacting riparian habitat within the Lower Crane Valley. It may be necessary to consult an Ecologist specialising in water voles when planning works that may impact this species.

8.5 Otter

Otters are occasionally sighted on the tidal Thames, however more recently field signs including sprainting and footprints have been found in the lower reaches of the River Crane. It is acknowledged that in these urban reaches of river, the available bankside terrestrial habitat for otters becomes limited and disturbance levels increase significantly, however river renaturalisation work and the establishment of dense marginal vegetation habitat will undoubtedly benefit any otters passing through the area. There may be scope to attract otters to some of the few sites without public access, such as Twickenham Rifle and Pistol Club, and the riverbank at Moormead and Bandy Recreation Ground following further restoration and enhancement, where construction of artificial holts could be a worthwhile strategy. Of primary importance is the continuous monitoring of otter activity and sightings in the Lower Crane Valley, to gain a better understanding of their core range within the landscape.

8.6 Ancient and veteran trees

A number of ancient and veteran trees are present throughout the Lower Crane Valley and its surrounding landscape, in addition to several suitable candidate future-veteran trees. Ancient and veteran trees are extremely valuable for biodiversity, offering a wide variety of micro-habitats and ecological niches, and also have great historical and cultural importance, often acting as local landmarks with associated memories and stories.

In terms of management within the Lower Crane Valley, it is of primary importance to map and identify all ancient, veteran and future-veteran trees, so that these can be nurtured and protected to ensure their longevity.

8.7 Native black poplar

The native black poplar *(Populus nigra* ssp, beyulifolia*)* has not reproduced naturally for many centuries and has been in decline for the last 200 years, making it now one of the rarest trees in the UK. There are so few native black poplars left that it is unlikely that they will pollinate each other, instead they will be pollinated by the large numbers of introduced cultivated trees.

The number of native black poplars in London Borough of Richmond Upon-Thames is the highest of all London boroughs, with 21 unique clones identified. In 2001, an ongoing propagation programme was initiated by the Royals Parks using cuttings taken from Richmond Park, and some of these poplars can be found within the Lower Crane Valley at Crane Park, Fulwell Meadow and Kneller Gardens. A new propagation and replanting programme is currently being facilitated via the Richmond Biodiversity Partnership. Native black poplars within the Lower Crane Valley should be managed conservatively to ensure their longevity and viability, and opportunities to plant new native black poplars from the local clones should be considered.

8.8 Hedgehog

Hedgehogs are a UK, London and Richmond Biodiversity Action Plan priority species, which has suffered major declines in urban areas during recent years. The Lower Crane Valley provides a vital landscape corridor for hedgehogs with a mosaic of habitats which are further augmented by the surrounding network of private gardens.

Potential impacts to hedgehogs should be considered when planning any management or enhancement works involving the cutting of low-lying vegetation. Conversely, opportunities to enhance habitats for hedgehog conservation should be utilised wherever possible.

8.9 Reptiles and amphibians

Reptiles and amphibians are distributed patchily within the Lower Crane Valley, with six native species (common frog, common toad, smooth newt, grass snake, slow worm and common lizard) recorded within the London Borough of Richmond Upon-Thames extent of the area. The non-native marsh frog has also been recorded. Crane Park, Crane Park Island LNR are particular hotspots for reptiles and amphibians, with breeding grass snake recorded frequently. Slow worms have been recorded at Marsh Farm Allotments adjacent to Twickenham Junction Rough.

The prescribed habitat management and enhancement for the Lower Crane Valley will benefit reptiles and amphibians by providing additional breeding, foraging and hibernating habitat, in particular in the form of new ponds. A focused effort on surveying and population monitoring is required to fully understand the current distribution of reptiles and amphibians throughout the Lower Crane Valley.

Potential impacts to reptiles and amphibians must be considered as part of the planning of any management or enhancement works within the Lower Crane Valley.

8.10 Invertebrates

The Lower Crane Valley comprises a mosaic of habitats with highly variable structure and species composition. As such, a rich diversity of invertebrate species occupy the many ecological niches, some of which are notable and unique, such as the stag beetle, the willow emerald damselfly and the three species which are associated with the black horehound in Mill Road Meadow (*Tritomegas sexmaculatos, Raglius alboacuminatus and Chrysolina bankii*), all of which are rare or uncommon invertebrates at the most westerly extent of their UK range in the Lower Crane Valley. Any changes to management regime should not overlook the resulting effects on invertebrate communities.

8.11 Ponds and standing water

Ponds and standing water provide important aquatic and semi-aquatic habitats that support much of the biodiversity associated with the River Crane, and as such these habitats are a valuable additional resource providing refuge from, for example, catastrophic events such as pollution incidents. The Lower Crane Valley is an important terrestrial and riparian biodiversity corridor, and through the careful planning of a Crane Valley 'pondscape', it has in addition the potential to become a vital corridor for pondlife, in particular to a range of amphibian and invertebrate species. Developing a vision for a network of ponds and standing water bodies connected via the landscape will be a long-term objective of the Crane Valley Partnership.

Species/Habitat	Summary of key considerations
Bats	1. Maintain the Lower Crane Valley as a dark corridor, avoiding additional external illumination. Explore options to reduce the existing impact of lighting within the landscape; 2. Any works to trees must consider the potential impacts to roosting bats. Where necessary, a bat specialist should be consulted prior to works; 3. A healthy, naturally functioning rivercourse with ample riparian vegetation, and surrounding habitats with diverse structure and species composition will provide vital roosting and foraging habitats for bats and continue to support a range of bat species.
Kingfisher	1. Create new artificial kingfisher banks in the Lower Crane Valley; 2. Repair and maintain existing kingfisher banks; 3. River renaturalisation on the culverted Lower Crane will create additional habitat and nesting opportunities for kingfishers; 4. Any works to river banks must consider the potential impacts to nesting kingfishers. Where necessary an Ecologist should be consulted prior to any works.
Fish	1. The restoration of the river system will aim to improve aquatic habitat to facilitate fish migration and breeding; 2. Any works taking place within the river channel must take into account potential impacts to seasonal fish spawning and migration.
Water vole	1. Long-term mink monitoring and control must be continued on the Lower Crane in congruity with co-ordinated regional and national efforts; 2. Further opportunities for water vole re-introduction or recolonisation should be considered. Riparian habitat management in the Lower Crane Valley will aim to improve habitat connectivity for water voles and develop the area as a corridor for the species; 3. Any works to river banks and riparian habitat must consider the potential impacts to water voles. Where necessary an Ecologist should be consulted prior to any works.

Otter	1. Continued monitoring of otters on the River Crane and Tidal Thames is essential; 2. Any works to affecting riparian habitat must consider the potential impacts to otters.
Ancient and veteran trees	1. Identification and mapping of all ancient and veteran trees is a priority; 2. All habitats should be managed in a manner which is sympathetic to the longevity of ancient and veteran trees; 3. Ancient and veteran trees will be retained and cared for as landscape assets as far as is practicable.
Native black poplar	1. Native black poplars within the Lower Crane Valley should be managed conservatively to ensure their longevity and viability; 2. Opportunities to plant new native black poplars from the local clones should be considered.
Hedgehogs	1. Potential impacts to hedgehogs must be considered when planning any management or enhancement works involving the cutting of low-lying vegetation. 2. Opportunities to enhance habitats for hedgehog conservation should be utilised wherever possible.
Reptiles and amphibians	1. The prescribed habitat management and enhancement for the Lower Crane Valley will benefit reptiles and amphibians; 2. A focused effort on surveying and population monitoring is required to fully understand the current distribution of reptiles and amphibians throughout the Lower Crane Valley; 3. Potential impacts to reptiles and amphibians must be considered as part of the planning of any management or enhancement works within the Lower Crane Valley.
Invertebrates	1. Any proposed changes to management regime must consider resulting effects on invertebrate communities; 2. Within each habitat type, management activities should be timed and undertaken in a manner that will minimise impacts on the inhabiting invertebrates; 3. Particular attention should be paid to stag beetles when moving deadwood, willow emerald damselfly when carrying out bankside tree works and the notable invertebrates which have been recorded on the black horehound in the Lower Crane Valley at Mill Road Meadow.
Ponds and standing water	1. Suitable locations for the creation of new ponds should be considered, with a view to the enhancing the network of ponds within the wider landscape.

9.0 Survey requirements

This section of the management plan sets out a schedule for species surveying and monitoring which will form the basis of the ongoing management regime of habitats in the Lower Crane Valley. Surveying and monitoring efforts will be contributed by professionals, local volunteers and environmental charity organisations.

9.1 Reporting and recording

It is important that biological data is properly verified and recorded, in order to ensure the validity, reliability and continuity of the records in the Lower Crane Valley. It is critical that anybody studying the area's biological records for whatever purpose, be it management guidance, impact assessment, scientific research or personal interest, has easy access to a current, holistic dataset. Systematic surveys and long-term monitoring may also be used to compile reports and more detailed analytics, and such documents should also be available upon request to anybody with an interest in the biodiversity of the Lower Crane Valley. Sensitive data should be excluded or redacted as appropriate.

8.1.1 All casual records are to be reported to Habitats and Heritage, who will collate all biodiversity records on Council-owned land within the borough and distribute accordingly with the appropriate Local Environmental Record Centres. Where a sighting is imminently important to the management of a site (such as bird nesting, uncovering of a badger sett/fox earth etc) the impacts must be discussed with the Appropriate Council Officer and a decision taken to continue the works or not.

8.1.2 All species or environmental monitoring and survey reports will be submitted to the Council and FORCE, who already keep an extensive library of historic and current documents. All relevant data will be extrapolated from these reports and sent to Habitats and Heritage in the form of a spreadsheet for collation with the biological record database.

Lower Crane Valley schedule of surveying and monitoring

Prescription	Priority	Year					Usual Timing	Prescription details
		2024	2025	2026	2027	2028		
P1: Ash dieback survey	**1**	*					Jun – Aug	Carry out basic ash dieback survey across the site, focusing on woodland compartments where the majority of ash is found. Survey should follow health categories detailed by the Tree Council.
P2: Ancient and veteran tree survey	**1**	*	*				Jan – Dec	Identify, number tag and map all veteran and ancient trees.
P3: Fish and eel monitoring	**1**	*	*	*	*	*	Apr – Sep	Continue monitoring fish and eel populations in the lower Crane Valley.
P4: Otter monitoring	**1**	*	*	*	*	*	Jan – Dec	Carry out a bi-annual survey for otter field signs. Encourage the reporting of casual sightings.
P5: Water vole monitoring	**1**	*	*	*	*	*	Apr – Oct	Carry out bi-annual water vole survey in areas of suitable riparian habitat. One survey in late spring/early summer, the second in late summer/early autumn.
P6: Mink monitoring	**1**	*	*	*	*	*	Jan – Dec	Carry out ongoing monitoring of mink rafts. Encourage the reporting of casual sightings.
P7: Reptile survey	**1**	*	*	*	*	*	Mar – Oct	Survey suitable habitats for reptiles to determine a) presence/likely absence and b) population size where present. Focus on habitats along a different reach of the river in each year.
P8: Amphibian survey	**1**	*			*		Mar – Jun	Survey suitable waterbodies for amphibians during springtime to determine a) presence/likely absence and b) population size where present.
P9: Breeding bird survey	**1**			*			Mar – Sep	Carry out an update breeding bird survey in the Lower Crane Valley 3 years after the most recent surveys in 2022.

P10: Kingfisher monitoring	**1**	*	*	*	*	*	Mar – Sep	Monitor the breeding success of kingfishers in the Lower Crane Valley each year, based on known nesting locations including the artificial kingfisher banks.
P11: Small mammal survey	**2**	*	*	*	*	*	Jan – Dec	Survey small mammals using live capture traps and camera traps, focusing on a different area or species group in each year.
P12: Bioaccoustic surveys for bats	**1**	*	*	*	*	*	Apr – Oct	Use static bioacoustics recorders to survey for bat species across the site each season. Carry out walked transect bat activity surveys. Register surveys with National Bat Monitoring Programme where possible.
P13: Survey and map potential roost trees for bats	**1**	*	*				Jan – Dec	Survey habitats and build a database of all trees with PRF's.
P14: General terrestrial invertebrate survey	**2**	*	*	*	*	*	May – Sep	Terrestrial invertebrate survey focusing on a different key habitat, area or species group in each year.
P15: Aquatic invertebrate survey		*	*	*	*	*	May – Sep	Aquatic invertebrate survey focusing on a different reach of the river in each year. Continue river fly monitoring as currently undertaken by FORCE.
P16: Butterfly transect	**2**	*	*	*	*	*	Apr – Sep	Liaise with Butterfly Conservation Trust to see if possible to set up official transect. If not carry out bi-weekly butterfly transect following same survey methodology.
P17: Moth trapping	**2**	*	*	*	*	*	Apr – Sep	Set up light traps to survey for moths species. Focus on a different key habitat or area in each year.
P18: Dragonfly and damselfly survey	**2**	*	*	*	*	*	May – Sep	Bi-weekly survey of riparian and wetland areas for damsel and dragonflies.
P19: Invasive species mapping	**1**		*			*	May – Sep	Survey and map the extent of all invasive species within the Lower Crane Valley every 3 years.

9. Glossary

10.1 Bird Nesting Season

Bird nesting season (BNS) is classed as from the 1st March – 31st August inclusive however some birds (e.g. herons) breed outside of this period and this is becoming increasingly common with climate change. All breeding birds are protected under the Wildlife and Countryside Act of 1981. https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/plants-for-wildlife/garden-hedges/hedge-law/

10.2 Green Belt

Green Belt (GB) is a national policy designation and there is a general presumption against inappropriate development in the Green Belt. In line with the NPPF, the Green Belt serves five purposes:

- to check the unrestricted sprawl of large built-up areas
- to prevent neighbouring towns merging into one another
- to assist in safeguarding the countryside from encroachment
- to preserve the setting and special character of historic towns and
- to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

10.3 Metropolitan Open land

Metropolitan Open Land (MOL) is open land or water which is of significance to London as a whole or a part of London, either publicly or privately owned, and with or without a public access, which either:

a) Contributes to the physical structure of London and helps to separate and/or define London's distinctive communities'
b) Contributes to the establishment of London's special character by providing attractive breaks in what would otherwise be continuous urban development
c) Creates a significant visual open space experience when used, passed or crossed
d) Contains natural features, buildings or landscape of historic, recreational, agricultural, natural conservation or scientific interest, worthy of protection on account of their value nationally or to the whole part or a part of London
e) Includes open air facilities, especially for leisure, recreation and sport of importance for the whole or a part of London; or
f) Forms part of a green chain of related open spaces and linking footpaths, bridleways, riverside and canal walks and towpaths

Some open spaces and gardens which themselves might not be of significance to London as a whole, but which combine visually and physically to form a larger significant open area or green wedge are included.

10.4 Other Open Land of Townscape Importance (OOLTI)

Open areas, which are not extensive enough to be defined as Metropolitan Open Land, but act as pockets of greenery of local significance, contribute to the local character, and are valued by residents as open spaces in the built-up area. these areas can include public and private sports grounds, some school playing fields, cemeteries, allotments, private gardens, areas of vegetation such as street trees and mature trees. OOLTI is a local policy

and new designations are made by the council as part of the plan-making process. This is different to the national policy designation of ‘Local Green Space’.

10.5 Public Open Space

Public Open Space is parks and similar land for public use, whether provided by the Council, or privately, where access for the public is secured by virtue of legal agreements.

10.6 Richmond Biodiversity partnership

The Richmond Biodiversity Partnership (RBP) is an independent consortium of local specialists and organisations concerned with wildlife and biodiversity across Richmond Borough. Chaired by Habitats & Heritage, the Partnership regularly updates and publishes the Richmond Biodiversity Action Plan, a strategy document that details plans for the protection and management of habitats and species of national, regional or local significance and those that are on the Red List of Threatened Species across the Borough

10.7 Site of Importance for Nature Conservation

London's most valuable and special places for wildlife are recognised by the Mayor and London borough councils as Sites of Importance for Nature Conservation (SINCs). Over 1500 SINCs have been identified across the capital. Within Richmond Borough there are 55 (as of 2019) and some are also designated as Local Nature Reserves or as internationally or nationally important sites for the habitats or species found within them. Many SINC’s are places where residents and visitors can enjoy nature close up.

There are three tiers of SINC’s those important at Metropolitan, Borough and Local levels.

Metropolitan Importance - contain habitats or species important at a London Level for example bats or acid grassland. These sites may not all have public access.

Borough Importance – contain habitats or species important at a borough Level for example stab beetles. These sites may not all have public access.

Local Importance - contain habitats or species important at a local level such as graveyards. These sites have open public access

11.0 References

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12.0 Appendices

Appendix 1
Richmond Biodiversity Action Plan, habitats and species relevant to Hatherop Park, [online] available at - https://habitatsandheritage.org.uk/our-work/parks-nature/richmond-biodiversity-partnership/
Appendix 2
Richmond Council Local Plan, [online] available at - https://www.richmond.gov.uk/services/planning/planning_policy/local_plan

Appendix 3
Richmond Council Nature Conservation Policy [online] available at – https://www.richmond.gov.uk/media/17991/nature_conservation_policy_statement.pdf

Appendix 4
Richmond Council Tree Policy, [online] available at -
https://www.richmond.gov.uk/media/18699/tree_policy.pdf

Appendix 5
SINC designations in the Lower Crane Valley
A) Crane Corridor

Site of Metropolitan Importance for Nature Conservation
Site Reference: M076
Site Name: Crane Corridor
Summary: This corridor of open space around the River Crane combines an excellent variety of wetland habitats, including ponds and lakes, and includes some historic buildings.
Grid ref: TQ 113 743
Area (ha): 178.05
Borough(s): Hillingdon, Hounslow, Richmond upon Thames
Habitat(s): Pond/Lake, Running water, Scrub, Wet grassland, Wet woodland/carr
Access: Free public access (part of site)
Ownership: Environment Agency, London Borough of Hillingdon, London Borough of Hounslow, London Borough of Richmond upon Thames and Private
Site Description:
For a length of over 5 kms, the River Crane is bordered by habitats of remarkable diversity, including woodland, pasture, heathland and areas of open water. Throughout, the width of the river corridor is exceptional by London standards. The river itself is one of the most natural in London, and is a stronghold for uncommon aquatic plants such as arrowhead (Sagittaria sagittifolia), unbranched bur-reed (Sparganium emersum), river water-crowfoot (Ranunculus fluitans) and rigid hornwort (Ceratophyllum demersum). At least four species of pondweed include the London rarity small pondweed (Potamogeton berchtoldii). Various damp pastures, old water meadows and associated ox-bow ponds also support a rich flora of regionally uncommon plants, including water-purslane

(Lythrum portula), nodding bur-marigold (Bidens cernua), ivy-leaved crowfoot (Ranunculus hederaceus), meadow crane's-bill (Geranium pratense), marsh-marigold (Caltha palustris) and bog stitchwort (Stellaria uliginosa). Willowalder woodland occurs in several places; this is a rare habitat in London. The breeding avifauna includes kingfisher, grey wagtail and reed warbler. The specially-protected water vole is also present. There are three Local Nature Reserves within the site; Crane Park Island (managed by London Wildlife Trust), Cranebank Water Meadows and Pevensey Road Open Space.

Site first notified: 19/09/1988 **Boundary last changed:** 30/11/2005
Citation last edited: 01/12/2005 **Mayor Agreed:** 25/11/2002
Defunct: N
Last Updated: 09/08/2019

B) Duke of Northumberland's River North of Kneller Road

Site of Borough Importance for Nature Conservation
Site Reference: RiB04
Site Name: Duke of Northumberland's River north of Kneller Road
Summary: A very attractive section of the Duke of Northumberland's River with an outstanding variety of aquatic plants.
Grid ref: TQ 151 743
Area (ha): 0.73
Borough(s): Richmond upon Thames
Habitat(s): Running water
Access: Free public access (all/most of site)
Ownership: Environment Agency
Site Description:
This 650 metre section of the Duke of Northumberland's River which runs alongside Twickenham Rugby Stadium is very attractive, with excellent aquatic and marginal vegetation. The river was created in the 15th or 16th centuries to provide power to the manorial water mill at Isleworth on the Thames. Both branched and unbranched bur-reeds (Sparganium erectum and S. emersum) are present in the channel along with water plantain (Alisma plantago-aquatica), whose flowering spikes poke above the water's surface here and there. On the margins a diverse assemblage of wetland plants occurs, including: marsh horsetail (Equisetum palustre), great yellow-cress (Rorippa amphibia), greater pond-sedge (Carex riparia), reed sweet-grass (Glyceria maxima), water forget-me-not (Myosotis scorpioides), water figwort (Scrophularia auriculata) and skullcap (Scutellaria galericulata). The river here has greatly improved for wildlife in recent years and the increase in vegetation provides more habitat for birds, fish and invertebrates including the spectacular banded demoiselle (Calopteryx splendens).

Site first notified: 01/02/2000 **Boundary last changed:** 01/02/2000
Citation last edited: 06/09/2005 **Mayor Agreed:**
Defunct: N
Last Updated: 09/08/2019

C) Duke of Northumberland's River South of Kneller Road

Site of Borough Importance for Nature Conservation
Site Reference: RiB08
Site Name: Duke of Northumberland's River north of Kneller Road
Summary: A straight and shallow section of the river with abundant fish.
Grid ref: TQ 150 737
Area (ha): 0.63
Borough(s): Richmond upon Thames
Habitat(s): Amenity grassland, Running water, Scattered trees, Scrub
Access: Free public access (all/most of site)
Ownership: Environment Agency
Site Description:
The 800 metre section of the Duke of Northumberland's River between Kneller Road and its junction with the River Crane is straight and shallow, with a gravelly bed. Despite its vertical banks, some marginal vegetation has established, including a few clumps of great pond-sedge (Carex riparia) and scattered plants of common skullcap (Scutellaria galericulata), water-pepper (Persicaria hydropiper), purple-loosestrife (Lythrum salicaria), marsh woundwort (Stachys palustris) and marsh horsetail (Equisetum palustre). Arrowhead (Sagittaria sagittifolia), an uncommon plant in London, emerges from the water in places, and river water-crowfoot (Ranunculus fluitans) and unbranched bur-reed (Sparganium emersum) grow beneath the surface. Kingfishers are commonly seen, feeding on the abundant fish population, which includes chub and stone loach, the latter becoming rather scarce in Britain.
Site first notified: 01/01/1993 **Boundary last changed:** 01/02/2000
Citation last edited: 20/10/2021 **Mayor Agreed:**
Defunct: N
Last Updated: 20/10/2021

D) Twickenham Junction Rough

Site of Borough Importance for Nature Conservation
Site Reference: RiB29
Site Name: Twickenham Junction Rough
Summary: Significant area of wildlife habitat developed around Twickenham Junction.
Grid ref: TQ 157 735
Area (ha): 4.72
Borough(s): Richmond upon Thames
Habitat(s): Scattered trees, Secondary woodland, Scrub, Bracken, Roughland, Semi-improved neutral grassland, Tall herbs, Vegetated wall/tombstones
Access: The northern section is access via the River Crane Walk, the southern section is Network Rail operational Land and can be viewed from adjacent paths or roads only.
Ownership: Network Rail & London Borough of Richmond upon Thames

Site Description:
This site is situated immediately to the west of Twickenham Station, the River Crane (just outside the site) sits at its northern edge. The north of the site is covered in (mostly) native broadleaved woodland of ash (Fraxinus excelsior), pedunculate oak (Quercus robur), birch (Betula sp.) and willows (Salix spp.). Below (as an understorey) and between the trees are areas of scrub comprising native and non-native species e.g., hazel (Corylus avellana), hawthorn (Crataegus monogyna), elder (Sambucus nigra), bramble (Rubus fruticosus agg.), butterfly-bush Buddleja davidii and firethorn (Pyracantha sp.). Common nettle (Urtica dioica) and ivy (Hedera helix) are prominent constituents of the ground flora. The River Crane Walk transverses the northern part of the site. Within the site's southern section, the railway lines divide and cross over one another, leaving an 'island' of undisturbed wildlife habitat. The site contains a large patch of developing silver birch (Betula pendula) woodland and a typical mix of rough grassland, tall herbs and scrub. The grassland is dominated by false oat-grass (Arrhenatherum elatius) and red fescue (Festuca rubra), and includes a range of wild flowers such as great mullein (Verbascum thapsus), Canadian goldenrod (Solidago canadensis) and globe thistle (Echinops exaltatus). Scattered among the grassland are stands of tall herbs, such as rosebay willowherb (Chamerion angustifolium), mugwort (Artemisia vulgaris) and Michaelmas daisy (Symphyotrichum sp.), and bracken (Pteridium aquilinum), and thickets of bramble. The old brick walls supporting the railway embankment along the footpath leading from the footbridge to Lion Road supports an interesting fern community. Among the ferns growing here are three species which are scarce in London: wall-rue (Asplenium ruta-muraria), maidenhair spleenwort (A. trichomanes) and black spleenwort (A. adiantum-nigrum).

Site first notified: 01/01/1993 **Boundary last changed:** 24/10/2021
Citation last edited: 24/10/2021 **Mayor Agreed:**
Defunct: N
Last Updated: 24/10/2021

E) <u>River Crane at St Margarets</u>

Site of Borough Importance for Nature Conservation
Site Reference: RiB20
Site Name: River Crane at St Margaret's (Richmond side)
Summary: This stretch of the River Crane extends from London Road (Twickenham) through to Chertsey Road then continues along the Whitton Brook, on the Richmond side of the borough boundary with Hounsow, to its tidal limit at Northcote Road.
Grid ref: TQ 157 735
Area (ha): 1.23
Borough(s): Richmond upon Thames
Habitat(s): Running water
Access: Free public access (part of site).
Ownership: London Borough of Richmond upon Thames
Site Description:
The River Crane in this location is constrained within a vertically-sided concrete channel which is lined with trees and shrubs and hence deeply shaded. The result is no submerged and little marginal vegetation is apparent other than algae. Nevertheless, little egret, moorhen and mallard can be seen in the stream and kingfishers are known to frequent the site. There are numerous fish of various sizes shoaling in the few parts of the stream where sunlight can penetrate. An area of vacant land between the river and the railway has been added to the site. It chiefly comprises non-native woodland dominated by sycamore (Acer pseudoplatanus).

Site first notified: 24/10/2002 **Boundary last changed:** 22/10/2021
Citation last edited: 22/10/2021 **Mayor Agreed:**
Defunct: N
Last Updated: 22/10/2021

F) Moormead and Bandy Recreation

Site of Local Importance for Nature Conservation
Site Reference: RiL25
Site Name: Moor Mead and Bandy Recreation Ground
Summary: Attractive village green beside the River Crane in Twickenham.
Grid ref: TQ 163 740
Area (ha): 4.96
Borough(s): Richmond upon Thames
Habitat(s): Amenity grassland, Running water, Scattered trees, Semi-improved neutral grassland, Tall herbs.
Access: Free public access (all/most of site).
Ownership: London Borough of Richmond upon Thames
Site Description:
This is an attractive little park, with the character of a village green, alongside the River Crane in Twickenham (the river is fenced off from the park). Most of the park comprises informally managed short grass, but there are plenty of daisies (Bellis perennis) and other low-growing wild flowers, such as lesser trefoil (Trifolium dubium) and dove's-foot crane's-bill (Geranium molle). Where the grass is allowed to grow longer towards the edges of the site, swathes of cow parsley (Anthriscus sylvestris), with creeping buttercup (Ranunculus repens) and common mallow (Malva sylvestris) enhance the rural character of the site. Mature trees include ornemental cherry (Prunus sp.), Lombardy poplar (Populus nigra 'Italica') and avenues of a purple form of Norway maple (Acer platanoides) sycamore (A. pseudoplatanus) and London plane (Platanus x hispanica). A fair range of common birds can be found here, such as blackbird, collared dove, blue tit, chaffinch, and the - now ubiquitous in west London - ring-necked parakeet.
Site first notified: 01/02/2000 **Boundary last changed:** 23/10/2021
Citation last edited: 23/10/2021 **Mayor Agreed:**
Defunct: N
Last Updated: 23/10/2021