

# Richmond upon Thames

## Habitat Action Plan

### Tidal Thames



The Thames looking down-stream, passed Kew Gardens and Syon tidal flood meadow © Oliver Whaley

***“My eye, descending from the hill, surveys,  
Where Thames among the wanton valleys strays;  
Thames, the most loved of all the ocean’s sons;  
By his old sire, to his embraces runs,  
Hasting to pay his tribute to the sea,  
Like mortal life to meet eternity.”***  
(From “The Thames” by Sir John Denham, 1615 – 1668)

#### 1. Aims

- To identify and quantify the wildlife habitats and species of the tidal Thames
- To ensure the improvement, regeneration and integration of tidal Thames habitats
- To contribute to strategic efforts to deliver biodiversity conservation targets for the tidal Thames as a whole.
- To promote public education, appreciation and research of the tidal (and non-tidal) Thames within the Borough

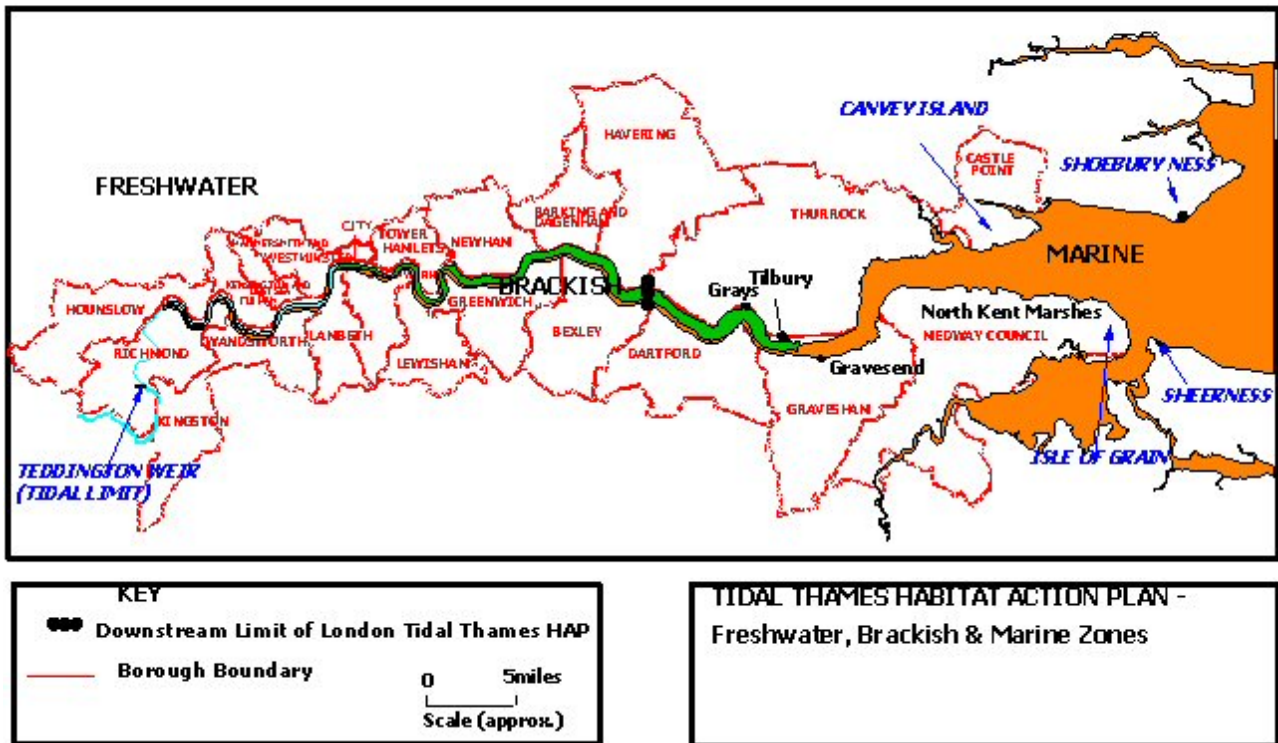
#### 2. Introduction

By the time the Thames reaches London it has flowed over 300 kms from its source in the Cotswolds; it has however traditionally been known as “London’s River” or “old Father Thames” and has been a landscape of inspiration to the capital for two thousand years. The original meaning of the name ‘Thames’ tells us something about its character. The name is perhaps derived from the Celtic language root *Tam*, meaning ‘dark’ or more likely from a pre-Celtic root *Ta* meaning ‘melt, flow turbidly’.

The history of the river in Richmond Borough is no less important and is evident from finds of Stone Age tools on Eel Pie Island; flint implements and Celtic and Roman pottery on Ham lands. The river has been an inspiration to Alexander Pope and Turner. Its serpentine presence through the Borough does much to define its life and character and is symbolised within the Borough Council logo.

The London Borough of Richmond upon Thames is unique among the London Boroughs in extending both north and south of the River Thames. The tidal limit of the Thames is within the Borough, at Teddington Lock (although it is noted that this can be breached on extreme high

tides). The western boundary of the Borough extends a further 12 km upstream on the north bank of the river. The London wide Tidal Thames HAP has selected the Richmond Borough boundary as its western limit as it also represents the western boundary of the Greater London Authority (GLA). This plan has also been extended to include the non-tidal reaches.



The riverbanks within the Richmond Tidal Thames Habitat Action Plan (HAP) are:

**Non-tidal**

- The north bank upstream (12 km) of Teddington Lock, to the west end of Hampton Water Works

**Tidal**

- The north and south banks downstream (8 km) of Teddington Lock, to the confluence with the River Crane (the boundary with the London Borough of Hounslow)
- The south bank downstream (12 km) to the confluence with the Beverley Brook (the boundary with the London Borough of Wandsworth)

The Borough boundary runs along the centre of the river except where it moves around islands. Some Islands, such as Taggs Island are included and others, such as Isleworth Ait excluded.

The lateral extent of the plan area includes:

- The river bed and the 11 Thames islands within the Borough
- The (short) tidal reaches of associated tributaries but excludes their main fluvial channels. (These will be included in a subsequent “Rivers and Streams HAP” for the Borough)
- The banks, towpaths and other riverside pathways and associated flood channels, back channels and backlands. This includes rare marginal habitats of flooded forest and wet woodland.
- The floodplain. For example Petersham Meadows is within the current flood plain and Ham Lands, which may be returned to flood plain as part of the “Floodscape” project.

The Richmond section of the river is part of the upper “freshwater zone” of the wider Tidal Thames, which stretches downstream through central London to the estuary, and coastal marshes



of Essex and Kent. A Habitat Action Plan for the wider Tidal Thames has been prepared on behalf of GLA by the Thames Estuary Partnership and is a key reference for this plan.

### **3. Current Status**

#### **3.1 Overview**

The river is a valuable amenity to Borough residents and visitors and provides a mode of transport for some commercial and much seasonal leisure traffic. It receives much of our treated effluent and urban run-off whilst also providing a vital wildlife corridor for the migration of wildlife between urban parks and green space. Locally, these areas include; the Barnes wetland centre, Bushy Park, Ham Common and Lands, Marble Hill House, Syon Park SSSI, Richmond Park SSSI and Kew Gardens World Heritage Site.

Ecologically the Thames today can be thought of as a recovering ecosystem. Only 40- 50 years ago it was considered almost biologically dead, whilst today its healthy fish stocks indicate its present status as a good quality urban water environment. It was recognised to be one of the cleanest rivers flowing through a European city in 2005. The main reason for this is the additional treatment of sewage effluent, before it is discharged to the tidal reaches, resulting from European and UK legislation.

Over 100 species of fish are currently recorded in the wider tidal Thames with reintroduced salmon running up-river beyond Teddington Lock in 1985 for the first time since the 1830's.

The tidal Thames is still far from being a natural eco-system, with its controlled river course, little natural flood meadow and bank-side housing development. Its main ecological constraint is the hard engineering to stabilise the riverbanks, consisting of sheet piles, cobbled or concrete revetments. These both reduce the variability of the habitat and severely curtail the surface and subterranean flood plain environment. A further impact is the Richmond Half Lock, which retains an artificial high water level over the bottom half of the tidal cycle in the river upstream. This benefits river navigation but reduces the upstream inter-tidal habitat. Benthic zone habitats are extended however, including several mussel habitats.

Although background water quality has improved, there remains the periodic outflow of untreated effluent from combined sewer systems in response to high rainfall events, which result in reductions in water quality. Continued occasional major incidents should be expected without remedial action, particularly given an anticipated increase in rainfall extremes as predicted by 'climate change'. October 2004 saw such an event when a combination of sewer over-flows and antecedent dry weather conditions, resulted in a rapid lowering of dissolved oxygen in the river water and many thousands of fish were killed.

There is also continued large-scale abstraction of fresh water for public water supply from above Teddington Lock. Although this is regulated by a variable minimum flow control at the lock, it still results in reduced fresh water inflows to the tidal reach throughout the year, and potential changes to river ecology during the low flow summer period.

#### **Specific habitats**

##### **3.2.1 River Channel**

The river channel habitat is constrained artificially by its hard embankments, resulting in a greater depth and a faster water flow than if the channel was "natural". Although this is largely a tidal reach, the water quality is dominated by the inflow of fresh water from upstream. Marine salinity levels are understood to be low throughout the stretch, although may be elevated in extreme drought periods. Water levels vary according to fresh water inflows and the monthly tidal cycle. Low levels are mitigated, on the tidal reaches upstream, by the outflow regulation of Richmond Half Lock, and the fresh water upstream reaches are maintained by Teddington Lock.

The in-stream habitat is subject to the seasonal changes of thermocline, oxygen levels and nutrient flows that in turn determine the algal base of the food chain. Algal blooms affect water clarity and colour and subsequent aquatic micro fauna.

In the wider tidal Thames there are over 100 fish species present. The main river habitat in Richmond supports good fish diversity with over 20 species, probably best represented by Bream (*Abramis brama*) - in this 'bream region' of the Thames, with prized angling fish such as Barbel (*Barbus barbus*) and introduced efficient predators like Zander (*Percidea Stizostedion*).

Some marine species such as Flounder (*Platichthys flesus*) use the stretch as a refuge for 3-4 yrs, after which they return to the sea and estuary where they spawn. The river is also used for migrating fish like European eels (*Anguilla anguilla*), and since the mid 1980's re-introduced migratory Salmon (*Salmo salar*) and Sea trout (*Salmo Trutta*) are regularly recorded.

It is important to note that the lack of large in-river waterweeds make the existence of marginal vegetation such as submerged tree roots like crack willow (*Salix fragilis*) and the tidally flooded bankside plants, very important refuges and attachment points for fish eggs during and after spawning.

The fishery and its associated invertebrate fauna, is predated by marine and fresh water birds including Kingfisher (*Alcedo atthis*), Grey heron (*Ardea cinerea*), cormorant (*Phalacrocorax carbo*) and a large number of wildfowl including both Great crested grebe (*Podiceps cristatus*) and Little grebe (*Tachybaptus ruficollis*). The reach is also visited regularly by Common seals (*Phoca vitulina*) from lower down the estuary, and even Bottlenosed dolphins (*Tursiops truncatus*) have been seen as far upstream as Twickenham.

### 3.2.2 River Bed

There is a considerable seasonal suspended silt load in the river system. This is perhaps enhanced from time to time by dredging activities and flocculation downstream. However, due to the relatively fast flowing nature of the stretch, silt is only deposited in any quantity in minor low-flow areas, especially on the Twickenham and Brentford side of the river, where islands interrupt the flow. These conditions provide important transition zone habitats for benthic fauna, including unionid mussel beds; specifically the Painters mussel (*Unio pictorum*), the Ducks mussel (*Anodonta anatina*) and the less common Swollen river mussel (*Unio tumidus*); whilst also providing for the UK BAP priority species the Depressed river mussel (*Pseudanodonta complanata*). Also found are invasive species such as the Chinese mitten crab (*Eriocheir sinensis*), the Zebra mussel (*Dreissena polymorpha*) and the Asiatic clam (*Corbicula* sp.).

Non-biting midge larvae (*Chironomus* sp.), leeches (Hirudinea) and Freshwater shrimps (*Gammarus pulex*) are a widespread and an important food source for fish and ducks. The other key riverbed inhabitants, with several species found in the Richmond reaches, are small Orb (*Sphaerium* sp) and Pea (*Pisidium* sp) mussels.

### 3.2.3 Banks

The combination of the hard banks and the Richmond Half Lock restricts the inter-tidal habitat within the main channel. Gravel and silt banks are exposed downstream of the lock and provide a good habitat for feeding water fowl. In a few places, such as on the foreshore of RBG Kew and the Old Deer Park, Sea Club-rush (*Bolboschoenus maritimus*) and Grey club-rush (*Schoenoplectus tabernaemontani*) provide an important habitat that is used as a spawning ground.

The channel embankments tend to be uniform with steep faces covered with protective hard rock blocks or sheet piles. This provides a restricted habitat with little marginal vegetation or opportunities for roosting. However the concrete and cobbled revetments are increasingly being colonised by Willow (*Salix* sp.) and Alder (*Alnus glutinosa*). There are no natural banks currently within the tidal reaches of the Borough, such as the tidal flood meadows (protected as a SSSI) outside Syon House in Hounslow on the north bank opposite Kew Gardens, and which provide good habitat for a range of species including Reed warblers (*Acrocephalus scirpaceus*)

Recent schemes are attempting to provide more habitat within the channel banks. Local volunteers have installed a softer defence system on the river-side of the flood bank at Kew, consisting of hand built willow stake "living fences" for the retention of silt and the potential

development of more natural bank-side habitats and known as “spiles”. Recent improvement works at Teddington Lock incorporated soft materials into the new sheet piled banks to allow habitat for soft boring invertebrates and small fish.

The towpath, revetments and associated riverside vegetation forms an important corridor habitat and also represents a key connection to associated habitats such as floodplain and wet woodland. The riparian assemblages of plants in some locations in the Borough are some of the best examples in the tidal Thames and are especially important, as they are also rare on the engineered tributaries. However, being close to the towpath, they suffer from badly timed or heavy mowing that has considerably impoverished some habitats. Where they are well managed, a wonderful lush riverside border can still be found, often characterised by plants such as; Great water dock (*Rumex hydrolapathum*), Water speedwell (*Veronica anagallis-aquatica*), Hemlock water dropwort (*Oenanthe crocata*), Marsh ragwort (*Senecio aquaticus*), Water figwort (*Scrophularia auriculata*), Purple loosestrife (*Lythrum salicaria*), Yellow loosestrife (*Lysimachia vulgaris*) and Amphibious bistort (*Polygonium amphibium*).

The private river bank is typically in the form of short grassed gardens with some structures such as offices, water treatment plants or roads.

There are many large and valuable trees along the bank including; crack and weeping Willow (*Salix x sepulcralis*), Oak (*Quercus* sp.), beech (*Fagus* sp.), and Poplar (*Populus* sp.). In both the public and private parts of the embankment these provide good quality habitats for invertebrates, birds and bats.

#### **3.2.4 Islands**

There are eleven islands within the borough river reaches, ranging from about 10m to 600 m in length. These are largely shored up by lateral sheet piling or wooden camp-shedding. During high tides and flood events parts of the islands are inundated. The islands provide an important range of inter-tidal habitats on exposed shores, shelves or bars at the foot of the sheet piling.

The islands also provide roosting habitat for water fowl, and occasionally seabirds such as the common tern (*Sterna hirundo*). However due to the vertical piling at low tide, and the foxes, dogs and cats present on the larger Islands, ground nesting birds are often unsuccessful.

The lack of sites for waterfowl has seen interesting adaptations that include Coots (*Fulica atra*) nesting in trees on the little Richmond Aits (Ait being a local name for a Thames island). However it is clear, that the only consistently successful nesting sites for water birds (apart from Canada geese), are the floating man-made rafts, mooring buoys or abandoned boats, that ensure that the nests survive the daily tides.

The many mature trees on the Islands, together with Ivy (*Hedera helix*) cladding, provide important roosts and nesting sites for the less common species such as Great spotted woodpeckers (*Dendrocopos major*), Tawny owls (*Strix aluco*) and Treecreepers (*Certhia familiaris*). Several bat species also depend on mature trees like broken crack willows with large trunks for roosting sites. As with much of London, Sycamore trees (*Acer pseudoplatanus*) dominate some islands; this, especially when ivy clad, provides many good roosts, nests and foraging material. Willow (*Salix* spp.) species dominate other islands. Barges and other moored artificial structures can also provide good nesting and roosting habitat along the river.

#### **3.2.5 Tidal Tributaries, Flood Channels and Flood Plain**

The north bank of the river, except for a short reach alongside Marble Hill House, is largely protected from inundation by a combination of the flood embankment and/or local topography. However a significant part of the south bank includes backwater and flood channels, and reaches such as Petersham Meadows and the Old Deer Park include an important range of flood plain habitats, for example the tidally flooded wet willow woodland in Petersham. These are unusual tidal habitats within London and are considered to be of value for fish fry as well as specialised strandline invertebrates and flora.

The tidal reaches of tributary rivers such as the Crane and Beverley Brook also provide potential refuge for fish fry. They are also important access points to the Thames for wildlife using these key green corridors to the north and south of the Thames.

The flood plain areas of the Thames are inundated during periods of high water level resulting from high tides and/or higher fresh water inflows. Parts of the adjacent land are designed as storage areas for flood waters and are only inundated on spring tides. This is facilitated by large sluice pipes passing through the flood embankment to fill back-water channels. The Old Deer Park flood channel creates an exceptional wet woodland / fen, whilst the Royal Botanic Gardens, Kew ha ha provides valuable habitat heterogeneity, although it is liable to silting.

The upper reaches of the River Thames are fed with run-off from Chalk downland and Cotswold limestone and this calcareous origin is considered to have an important role in the regulation of pH over its flooded and riparian habitat corridor downstream. The raising of the pH through the calcified river water, especially in the modern acid precipitation context, is probably a contributing factor to the existence of rare molluscs (that prefer more alkaline environments for shell development), within the tidal Thames corridor such as the Two lipped door snail (*Lacinaria biplicata*) and the German hairy snail (*Perforatella rubiginosa*), that are found in several regularly flooded sites within the Borough. More research is needed, but indications are that flood prevention has for example, seen previous flood meadows in Kew Gardens developing increasingly acid soils, indicated by a progression towards calcifuge plants.

Petersham Meadows is a flood meadow, inundated typically on twice monthly spring tides or following upstream storm events. This is maintained as a meadow by grazing and provides good quality habitat for wet meadow flora.

The "Floodscape" project is currently investigating the opportunities for returning parts of Ham Lands to flood plain, as a wet meadow and/or flood plain woodland, which were artificially raised out of the flood plain by land-filling in the immediate post-war years. The main aim of the scheme is to provide additional flood storage for the Thames, and thereby reduce the flood risk to adjacent inhabited areas; however it also provides an opportunity to return a part of the historic flood plain to a more natural habitat.

### **3.2.6 Wildlife Corridor**

One of the key aspects of the Richmond stretch of the Thames is its functional role as a wildlife corridor locally and as part of the wider Thames corridor. The stretch links the river to other important sites such as; the Kempton Park Reservoirs – a SSSI and Ramsar site, Barn Elms wetland site on the south bank, acid heathland of Richmond Park and Wimbledon Common to the south, Bushy Park and Hampton Court to the north. The corridor is an important link between the brackish and marine habitats along the Thames Estuary and the fresh water habitats of the Thames, as well as between the river Crane and Colne via the West London Green Chain. Its location as a key link along these wildlife chains, with access to a range of adjacent sites, increases its richness as an existing habitat as well as its potential if and when new habitat niches are developed.

## **4. Specific Factors Affecting the Habitat**

### **4.1 Sea Level Rise and Climate Change**

Sea level rise is an anticipated effect of climate change and results from the combined impact of the thermal expansion of water and the melting Polar ice sheets. The resultant effect is a sea level rise of 2 - 4 mm per year. This effect is anticipated to lead to the loss of some 10,000 hectares of foreshore and mudflat habitat in Britain over the next 20 years. In this Borough, it may further reduce the inter-tidal channel bed habitat downstream of the Richmond half Lock.

A further effect of sea level rise is the increased high tides and the consequent higher flood risk to the Borough. The Environment Agency also has made it clear that it wishes to reduce the operation of the Thames Tidal Barrier as a protective measure for the upper parts of the tidal Thames. This will increase the periods and levels of inundation within the backlands and

associated flood plain habitat, and is one reason for the proposed implementation of the Floodscape project.

The latest evidence on local climate change indicates that summers in the south east of England are becoming warmer and drier whereas winters are becoming warmer and wetter. In addition the variability of the weather is increasing, resulting in increased risk of both floods and droughts. This pattern of change is already in evidence and is expected to continue with the main debate surrounding the intensity of these changes.

The broader impact of climate change on the tidal Thames habitat is difficult to gauge. Increased flooding may be a benefit to some habitats. At the same time, the loss of floodplain and channeling of the river may combine with increased flooding, to produce very rapid and turbid flow, perhaps resulting in the loss of other riparian and riverbed habitats. This loss can perhaps be ameliorated by sensitive managed retreat and flood plain enhancement schemes such as Floodscape. At the other extreme, increased droughts and lower summer fresh water inputs may result in increased stress to the existing flora and fauna, whilst promoting the incursion of estuarial visitors and exotic species.

## **4.2 Land Ownership and Management Responsibility**

The division of ownership and responsibility for the management and maintenance of the public reaches of the tidal Thames bed, banks and backwaters is complex and divided between bodies such as the Local Authority, Port of London Authority and Environment Agency as well as public landowners such as The Royal Parks, RBG Kew, National Trust, English Heritage and others along specific reaches. This has resulted in relatively low land management efforts on these reaches, which may have been to the benefit of the associated habitats in the past, but also inhibits the delivery of potential habitat improvement measures and coherent overall habitat management.

Approximately 30% of the direct frontage to the tidal Thames is under private ownership and/or management, as are some of the islands. There is even less known about the habitat and species within much of this area, although a plan for the islands has been produced by the Thames Landscape Strategy with management proposals for many of them. It is hoped that further information and dialogue with private landowners will be encouraged through initiatives such as this HAP and other much larger local initiatives. Significant landowners in this respect include Royal Mid Surrey Golf Club and Thames Water although private householders also manage long reaches of the river frontage.

## **4.3 Development and Planning Controls**

Any significant development proposed on either private or public land is controlled by the Local Planning Authority and will be subject to planning guidance under the council's "Unitary Development Plan" (soon to become the Local Development Framework) and the Greater London Authority's "London Plan".

The London Plan includes policy on the "Blue Ribbon Network" of land adjacent to the river. This policy supports bio-diversity and requires that "the value of waterways for wildlife and wildlife habitat will be protected and enhanced".

It is intended that this HAP and associated mapping and surveys will provide guidance to Borough planners when considering prospective developments within and adjacent to the tidal Thames area. From a habitat perspective it will be important for prospective developers to show that there will be clear net benefits to habitat and species strength and diversity from development. Given the impoverished nature of much of the riverside habitat there is the potential for beneficial net impacts as long as enhancement measures are sensitively designed and long-term management is incorporated.

## **4.4 Flood Control Structures**

The main flood control structures in the Borough are the system of embankments, walls and sheet piling. These retain water within the main channel, associated sluices, pipes and back channels

that release water into controlled back water areas on high tides, and let it back into the main channel on low tides.

This system is primarily for the purposes of flood management, although it results in back waters, flood meadow and wet woodland habitat. However there is be scope for reviewing the operation of this system, and the management of the associated flood plain, to better manage the existing habitat and/or provide additional good quality habitat within the backland area.

These features also result in a constrained river channel, increased flow velocity and water depth and a combination of pools and glides but no riffle sequences within the river. As a consequence, there are no locations where the river is in turbulent flow downstream of Teddington Lock. This controls the distribution of oxygen within the river channel, which is consequently high immediately downstream of Teddington Lock but subject to reductions further downstream.

#### **4.5 Flood Plain Management**

As noted above, the management of the flood plain is closely linked to the design and operation of the flood structures, which control the amount and timing of water released into the flood plain area. The management of the flood plain itself is dependent upon the topography and the approach to managing the ground flora.

The Old Deer Park for example is managed for recreation as a sports field and consists of close mown grass which, despite being inundated several times per year, has little habitat interest. Petersham Meadows is managed as open wet meadow by the introduction of cattle during the summer to maintain grass levels and control succession plants. This is an interesting habitat for flora and associated species, which is rare within London. The wet woodland adjacent to Royal Mid Surrey Golf Club appears to be essentially un-managed and has progressed over many years to a mature wet woodland habitat, which is also rare within London.

#### **4.6 Barriers and Locks**

The Thames Barrier lies downstream of central London and well outside the Borough, but it has a vital role to play in the protection of the Borough from flooding. It is likely that, in the future, more use will be made of local schemes such as Floodscape and less reliance placed on the Barrier. Other opportunities to develop wetland habitat as part of local flood management are possible if Floodscape is successful.

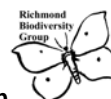
Richmond Half Lock retains artificially high water levels for the lower half of the tidal cycle. This results in still water conditions for half the tidal cycle and reduced inter-tidal habitat exposure. This lock may have an impact on sediment movement but is unlikely to significantly impede fish migration as it is breached twice daily.

Teddington Lock is actually a major weir structure with an associated lock for the movement of river transport. The impact of this structure on the migration of fish is not known at present.

#### **4.7 Water Quality**

Whilst it is generally acknowledged there has been a major improvement in background water quality in the tidal Thames over the last forty years, a detailed analysis of the base data has not been undertaken. There is a constant high input of nutrients with resulting high biochemical oxygen demand (BOD) from the major treated effluent of Mogden Works - discharged to the Thames at Isleworth Ait; this deposits anoxic sediments to the local river reaches and has a detrimental impact on local river species. The river has no significant natural inputs of dissolved oxygen downstream of Teddington Lock and this makes it susceptible to oxygen sags in response to low flows, high temperatures and effluent inputs. There is relatively constant BOD loading from Mogden and other licensed discharges; in addition there are peaks caused by the periodic discharge of dilute but untreated effluent and associated solid detritus from combined sewer overflows.

The fishery is particularly vulnerable to the operation of combined sewer overflows following summer storms, when the conditions combine and major oxygen sags can result leading to high fish kills. It is likely however that the cumulative effect of the 50 to 60 combined sewer discharges on an average year has a larger underlying impact on ecology and habitat.



#### 4.8 Litter

Plastic bags and plastic sheeting are common in the tidal Thames and often get lodged in trees where they look unsightly. Willow trees perform a useful 'raking' operation, preventing the passage of plastic to the sea and estuary. It is in the sea where research has shown they can be lethal to marine animals. Underwater, they 'open-up' and are mistaken as jellyfish and other prey items by marine turtles, for example. Leatherback turtles (*Dermochelys coriacea*) are recorded in the Thames Estuary. In 2002 the Marine Conservation society found that a dead Minke whale in Normandy, France, contained nearly 1 kg of plastic bags and packaging. Identifiable were English supermarket plastic bags. The National Aquatic Litter Group (NALG) is working to reduce litter from rivers.

#### 4.9 Water Quantity

Abstraction of fresh water for public water supply, combined with the effects of climate change, has resulted in extended periods, particularly in the summer, of low fresh water inflows to the tidal reaches of the river. This reduces the oxygen content in the river as well as promoting increased saline intrusion and potential changes to the habitat.

#### 4.10 River Transport and Recreation

The commercial traffic along the river is minor but there is significant recreational traffic by motorised and un-powered craft. Large washes resulting from certain motorised boats can have a significant impact on the river habitat and shoreline erosion. The combination of bank erosion by mitten crabs (see below) and large rolling washes, can be observed as accelerating the erosion. This is exemplified by the shoreline zone of the SSSI of Syon House, where the condition of the habitat is described as 'unfavourable' as a result.

The river is vulnerable to dredging activities due to the high quality shellfish habitat and its sensitivity to dredging and associated sediment movements. Any organisation proposing to dredge within or local to the Borough should first seek clarification as to the likely impact upon these and other habitats. There has also been concern expressed regarding the potential impact of dredging down-stream, particularly if tidal conditions result in an influx of sediment rich water into this part of the river.

The river is well used by walkers and cyclists along the banks and whilst these uses are largely benign, there is a problem with refuse in the river and its impact upon larger animals, such as seals, turtles and dolphins, within the downstream reaches. There is some recreational fishing within the reach but no commercial fishery.

#### 4.11 Problem Species

The Chinese mitten crab is recognised as a problem species in the tidal Thames, largely as a result of its habit of burrowing into marginal banks. Given the lack of suitable habitat in this Borough it may be less of a problem at present but remains an issue if this habitat is re-introduced to the Borough.

Japanese knotweed (*Polygonum cuspidatum*) is a major problem species in the marginal habitat adjacent to the river. Himalayan Balsam (*Impatiens glandulifera*) is also found extensively on river embankments and flood plain of the Borough and can result in mono-cultural habitat with little floral species diversity.

#### 4.12 Lack of Knowledge

One of the main issues in the tidal Thames is the fragmentation of responsibilities for the river and no central repository for knowledge regarding the habitats and species present. There is considerable potential for improvements in river and river-side management for the benefit of habitat and species diversity. This fragmentation of responsibility and consequent lack of knowledge is a major hindrance to the development of improved management for the system.

## **5. Current Action**

### **5.1 Legal Status**

The tidal Thames within London is not covered by any statutory nature conservation designation. It is however recognised by the GLA as a “Site of Metropolitan Importance for Nature Conservation”. This non-statutory designation nonetheless is a valuable protection at GLA and local level in planning terms.

There are a number of other sites adjacent to the river with Metropolitan status including Barn Elms Reservoirs, Bushy Park and Home Park, Ham Lands, and Stain Hill and Sunnyside Reservoirs. Further sites designated as having Borough Importance include the Old Deer Park, Royal Botanical Gardens, Lonsdale Road Reservoir, Petersham Meadows and Petersham Lodge Wood.

### **5.2 Mechanisms Targeting the Habitat**

Although, or maybe because, there is no overall authority for the tidal Thames, there are many initiatives at both a local and a regional level which either directly or indirectly impact upon the habitat.

#### **5.2.1 Thames Estuary Partnership**

This partnership was set up, in the absence of a single management body, to provide a focus for the management of the tidal Thames. Although the formal upstream limit of interest is Tower Bridge, in practice its interests extend from the Essex and Kent Marshes to the uppermost reaches within Richmond Borough.

The partnership is the lead body for the tidal Thames HAP for the Greater London area and in 2004 produced the tidal Thames Habitat and Species Audit. TEP is currently starting a major survey of the key habitats and species along the tidal Thames and also proposes an ambitious programme of research activities for the tidal Thames.

#### **5.2.2 Thames Landscape Strategy Hampton to Kew**

The “Thames Landscape Strategy” was established in 1994 for the Thames corridor between Hampton and Kew and the Borough is one of the key partners. The Strategy is ongoing, working with local groups and communities to develop management and regeneration schemes for the Thames landscape and supports funding activities for these plans. ‘London’s Arcadia’ is one of the main schemes and has recently received £3.3m of Heritage Lottery funding for the riverside area between Twickenham and Richmond Lock.

#### **5.2.3 Thames Strategy Kew to Chelsea**

The “Thames Strategy Kew to Chelsea” was launched in June 2002 and sets out a vision for the management of the river and its corridor downstream of Kew Bridge to Chelsea. A full time project manager is in place to realise the objectives of this strategy.

#### **5.2.4 Floodscape**

The “Floodscape” project is investigating the potential for returning some or all of Ham Lands into floodplain by lowering ground levels and thereby providing an improved capacity for flood management of the surrounding urban river-side areas. There is the potential to develop managed flood plain habitats as part of the scheme although it will also result in the loss of some woodland habitat.

#### **5.2.5 Thames Tideway Strategic Study**

The Thames Tideway Strategic Study is a collaborative study, managed by Thames Water, investigating options for improving the current problem of discharges from combined sewer overflows. The final report, published in February 2005, identifies a long-term solution by the construction of a major interceptor sewer beneath the river between Hammersmith and Crossness Sewage Works downstream. This scheme is not scheduled for completion until 2020 and does not directly address the local problems resulting from Mogden and other local CSOs, which are all upstream of the proposed tunnel.

Thames Water has proposed interim measures to reduce problems in the mean time and also intends to implement local solutions for Mogden. The details of these schemes have not been viewed to date.

## 5.2.6 Planning Controls

Planning developments are controlled by the Borough UDP, to be superceded by the Local Development Framework, and the London Plan. The London Plan incorporates specific provision for protection and enhancement of the bio-diversity within the “Blue Ribbon Network” of land adjacent to the river.

## 5.2.7 Environment Trust Towpath Group

This group has produced a detailed audit of the south bank of the river between Kew Bridge and Beverley Brook. A schedule of physical improvements and proposals for improved management for the benefit of biodiversity and river-side users are due to follow from this audit.

## 5.2.8 Volunteer Groups

There are a large number of volunteer groups carrying out clean up and improvement works along the length of the river within the Borough. Co-ordination of these activities is carried out by many of the organisations above and is increasingly being co-ordinated and supported by the Richmond Environment Network, recently set up and funded by the Council through Richmond CVS.

## 6. Flagship Species

*These special plants and animals are characteristic of the tidal Thames in LB Richmond; many are also listed in the London Plan or the UK Plan.*

<b>Common Tern</b>	<i>Sterna hirundo</i>	Summer visitor, breeds on derelict structures and islands
<b>Grey Heron</b>	<i>Ardea cinerea</i>	Particularly associated with the islands and back waters
<b>Purple Loosestrife</b>	<i>Lythrum salicaria</i>	A wetland plant characteristic of river banks particularly important for bumblebees.
<b>Two Lipped Door Snail</b>	<i>Lacinaria biplicata</i>	A spire shelled mollusc. Its habitat is soil surface (usually with ivy cover) of occasionally flooded riparian land in the shade of closed canopy woodland.
<b>German Hairy Snail</b>	<i>Perforatella rubiginosa</i>	A small mollusc with small bristles. Confined to the tidal Thames in the UK, it inhabits strandline detritus in the shade of closed canopy woodland and riparian vegetation.
<b>Flounder</b>	<i>Platichthys flesus</i>	A sea fish which spends its juvenile months in the tidal Thames, which provides a refuge area for fry spawned in the North Sea.
<b>Great crested Grebe</b>	<i>Podiceps cristatus</i>	A crested diving bird feeding on fish. Once almost extinct in UK, several pairs are breeding in the Borough, dependent on man made rafts.
<b>Depressed River Mussel</b>	<i>Pseudanodonta complanata</i>	A jade green bivalve freshwater riverbed mussel found in the upper reaches of the tidal Thames. A UK BAP Priority species.
<b>Daubenton Bat</b>	<i>(Myotis daubentonii)</i>	Medium sized bronzy coloured furry bat. Often called the ‘water bat’ as it feeds on insects over smooth water.
<b>Salmon</b>	<i>Salmo salar</i>	Salmon were re-introduced in the 1980’s and up to 500 fish now pass through on their way from the sea to upstream spawning areas.

## 7. Objectives, Actions and Targets

Most of these actions are specific to this habitat. Please note that the partners identified in the tables do not represent an exclusive list and new partners are both welcomed and needed. The leads identified are responsible for co-ordinating the actions – but are not necessarily implementers.

### Objective 1: Establish a Working Group to move forward with the Plan Objectives over the period 2005 to 2010.

**Target: Working Group established by end of 2005**

Action	Target Date	Lead	Other Partners
1.1 Send copies of the Plan to all interested parties and request feedback	2005	RBG	
1.2 Identify and contact potential interested parties for the Working Group	2005	RBG	
1.3 Form the Working Group, agree a method of working and identify partners	2005	TT HAP Working Group	Interested parties

### Objective 2: Produce a database and associated plan of habitats and species within the tidal Thames of Richmond Borough.

**Target: Initial database and plan completed for inclusion in the TEP Survey by 2006**

Action	Target Date	Lead	Other Partners
2.1 Review the approach to the Survey with TEP and identify opportunities for collaborative working	2005	Working Group	TEP
2.2 Undertake a survey of the river bed, including during the annual Richmond Half Lock draw-off.	2005	Working Group	TEP, ETRuT
2.3 Collate existing data from regulators and other interested parties and develop an initial database	2006	Working Group	TEP, EA, LWT
2.4 Support other survey work by TEP and other parties and add the data to the database	2007	TEP	Working Group, Floodscape, EA, LWT, LA

### Objective 3: To make available the biodiversity records for the tidal Thames corridor within the Borough, with the aim of facilitating the protection of species through contractors, agencies and Council Planning being made aware of species locations and sensitivities; aiding research; and facilitating life-long learning.

**Target: To put a database in place by 2007**

Action	Target Date	Lead	Other Partners
3.1 To provide, for council use only online locations of vulnerable habitat and species	2007	Working Group; RBG Kew; LA	EA; LWT; TEP; TLS;
3.2 Provide a generally available online database with interactive maps for species checklists, habitats and distribution	2007	Working Group, RBG Kew	EA

**Objective 4: Review existing activities in the tidal Thames and provide advice and information to support the incorporation and development of aspects that promote biodiversity**

**Target: Review existing activities by 2006; ongoing development and implementation**

Action	Target Date	Lead	Other Partners
4.1 Review works to date and proposals with the Thames Landscape Strategy and Thames Strategy: Kew to Chelsea and identify opportunities for habitat enhancement works and management schemes	2006 and ongoing	TLS, TSK2C, Working Group	LA
4.2 Review proposals under the Thames Tideway Study and make representations for means to reduce the impact of CSOs on the tidal Thames in the short to medium term	2006 and ongoing	TTS team, Working Group	LA
2.3 Provide inputs to the Floodscape Strategy as it develops on management opportunities to promote bio-diversity	2006 and ongoing	Floodscape team, Working Group	LA
4.4 Support other initiatives on the tidal Thames, including ETRuT Towpath Group for example.	2006 & ongoing	ETRuT, Working Group	REN, LA, EA
4.5 Promote integrated habitat enhancement in private waterside gardens	2007 & ongoing	LA Working Group, private landowners	EA

**Objective 5: Review the coverage and level of existing Site Designations with a view to ensuring all sites are adequately protected in the light of findings on species presence and habitat value**

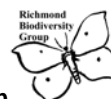
**Target: Identify Sites that may justify increased protection and submit proposals by 2008**

Action	Target Date	Lead	Other Partners
5.1 Compare the evolving database and associated plan of tidal Thames Habitats and Species to the existing coverage and level of Designated Sites and identify where Designations may be reasonably added or revised	2007	Working Group	LA, LWT, TEP
5.2 Develop a case for revision to the Designations and submit this to the relevant authorities	2009	Working Group	LA, LWT, GLA, DEFRA

**Objective 6: Provide inputs to the development of the Local Development Framework for Richmond Borough to ensure the tidal Thames is appropriately protected under the plan**

**Target: Appropriate protections included in the LDF on publication in 2007**

Action	Target Date	Lead	Other Partners
6.1 Submission of proposals as part of the development and drafting process	2006	Working Group, LA	TEP, LWT



6.2 Work with the Council on the final version	2007	Working Group, LA	
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**Objective 7: Identify sites for potential river-side habitat improvement and work with the appropriate bodies to bring these to fruition.**

**Target: Completion of improved habitat sites by 2009**

Action	Target Date	Lead	Other Partners
7.1 Identify riverside areas for habitat improvement, in line with the aesthetic and biodiversity objectives of TLS and RBG Kew (riparian buffer zone management plan) and other stakeholders.	2007	TLS, RBG Kew,	EA, LWT, TRP, Working Group
7.2 Develop habitats next to sheet piling and impoverished banks, including the creation of semi-aquatic and riparian vegetation swathes.	2009	TLS, RBG Kew	EA, Working Group

**Objective 8: Reduce the amount of rubbish entering the river within the Borough**

**Target: Bins with lids installed and trees cleaned of bags regularly by 2007**

Action	Target Date	Lead	Other Partners
8.1 Identify litter sources and sites. Protect or supply bins with lids, to prevent raiding by foxes and crows	2007	TLS, TSK2C, LBRUT	EA, LWT, RBG Kew Supermarkets, Working Group
8.2 Remove plastic and rubbish caught in trees. Start education campaign on wide reaching effect of river litter on marine animals	2007	LBRUT, TLS Canoe and sailing clubs	NALG EA, supermarkets, Working Group

**Objective 9: Provide increased nesting sites for breeding waterfowl**

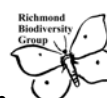
**Target: Put in place several nesting rafts for water fowl and terns**

Action	Target Date	Lead	Other Partners
9.1 Identify potential sites and designs for nesting rafts	2007	TLS, PLA, Working Group	EA, LWT, RBG Kew, LA
9.2 Put in place, suitable natural looking rafts on permanent protected moorings.	2008	TLS	EA, LWT, PLA, LA

**Objective 10: Broadcast the value of the tidal Thames and the objectives of the tidal Thames to the general public and other interested parties**

**Target: Incorporate elements of the TT HAP into existing and emerging life long learning programmes in partnership with TLS, TSK2C and other interested parties**

Action	Target Date	Lead	Other Partners
10.1 Develop life long learning initiatives on the TTHAP for inclusion in the project work of the TLS and TS K-C	2005	TLS TSK2C Working Group	LA EA RTBP
10.2 To incorporate appropriate aspects of the	2006	TLS	



## Relevant Action Plans

### Local Plans

Reedbeds, Bats

### London Plans

Tidal Thames, Grazing Marsh and Floodplain Grassland, Reedbed, Grey Heron

### National Plans

Mudflats, Sub-littoral Sands and Gravel, Twaite shad, Salmon, Depressed river mussel

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## Abbreviations

BAP – Biodiversity Action Plan

BOD – Biochemical Oxygen Demand

CSO – Combined Sewer Overflow

CVS – Council for Voluntary Services

DEFRA – Department of Environment, Food and Rural Affairs

EA – Environment Agency

ETRuT – Environment Trust for Richmond upon Thames

GLA – Greater London Authority

HAP – Habitat Action Plan

LA – Local Authority (London Borough of Richmond upon Thames)

LWT – London Wildlife Trust

NALG - National Aquatic Litter Group

PLA – Port of London Authority

RBG – Richmond Biodiversity Group

RBG Kew – Royal Botanic Gardens Kew

REN – Richmond Environment Network

SSSI – Site of Special Scientific Interest

TEP – Thames Estuary Partnership

TSK2C – Thames Strategy Kew to Chelsea

TLS - Thames Landscape Strategy (Kew to Hampton)

TRP – The Royal Parks

TT HAP Working Group – Tidal Thames Habitat Action Plan Working Group

UDP – Unitary Development Plan

## Contact

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