ENVIRONMENT AGENCY

EA-Thames LON

London's River

The River Thames is not, perhaps, one of the most imposing rivers; it has no rapids, no precipitous falls, no geographical eccentricities. But it has character, and there are few others which can compare with it in that respect, or many others.

The Thames happens to be one of the greatest rivers in the world, not because of its size, but because of its importance to London, the world's biggest centre of population; to Great Britain, an island nation which depends for its means of living on sea communications, and to the world as a whole because it is London's river, without which London would never have made its mark on history, or in international trade and commerce.

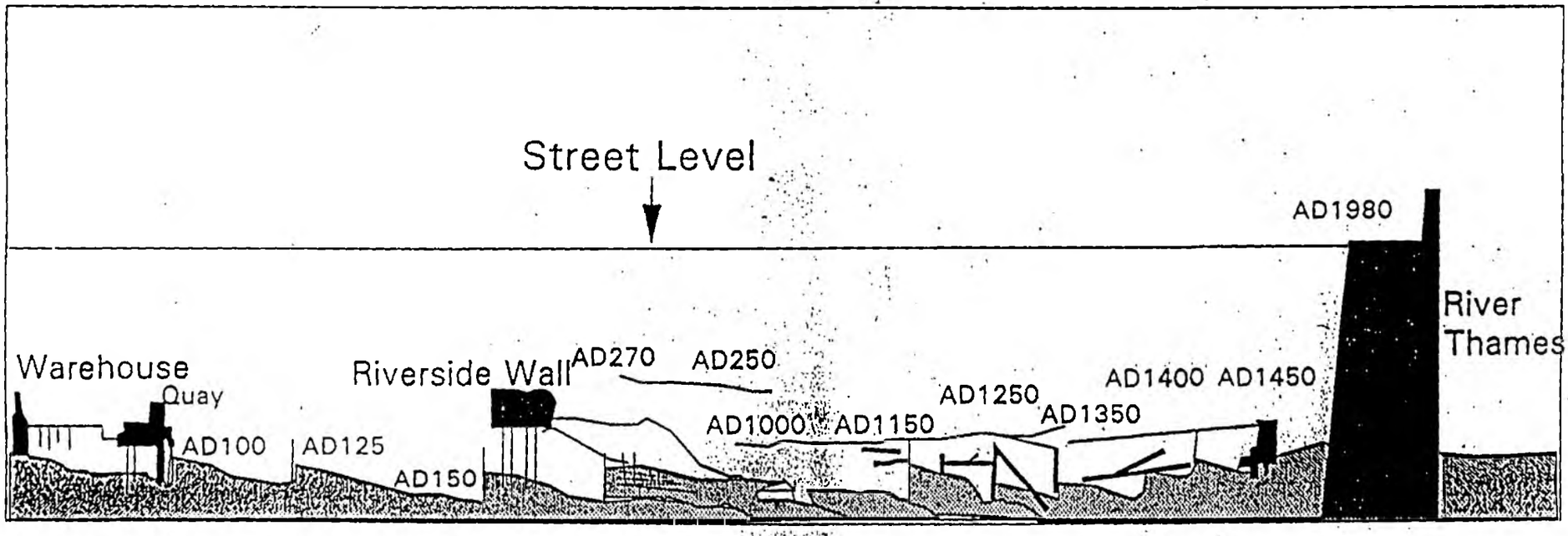
The secrets of the Thames are not displayed openly, they must be sought out, or discovered by accident, you can walk down to the river at any point and find something to admire, or to question; but to understand its magic, or at least appreciate its fascination to the full you must embark upon the river, and learn the wonder of its ways.

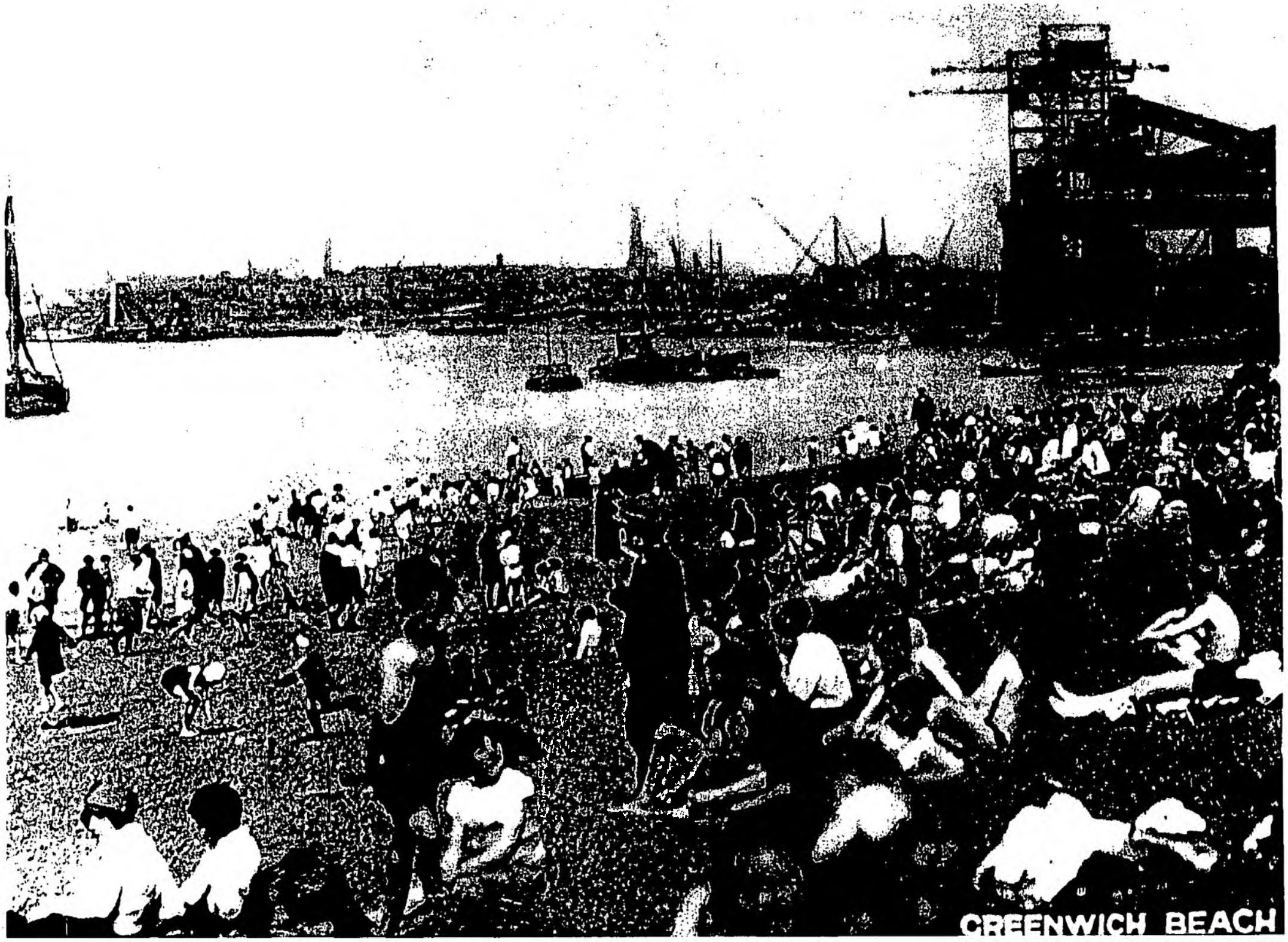
The banks of the Thames teem with historical places and buildings, all the way downstream from Hampton Court to the Tower of London, and the architectural wonders at Greenwich. All these buildings can be visited and inspected individually from the land; but only from the river itself can you discover how history, art, accident and commerce made London what it has grown into over the centuries.

History and architecture, however, form only part of the fascination of London's river. They lie on its banks, while the ebb and flood of the tide bring living history before your eyes; for this little river is one of the main traffic arteries of Great Britain, it is an international highway; and it is the largest port in the world.

(London's River and Guide to the Middle Thames, W B Caisley, 1954)

LONDON'S ADVANCING WATERFRONT




GREENWICH BEACH

THE THAMES AS AN ENVIRONMENTAL RESOURCE

Just as London is becoming an increasing focus for business and commercial investment, the city's greatest natural asset, the tidal River Thames, is truly "coming back to life". The river which was completely devoid of life in the late 1950's, now supports an increasing fish population which has already reached a total of 115 different species. It has been described as a "wildlife super highway" through the Capital.Providing an increasingly valuable amenity and recreational resource and now provides an environmental focus for riverside development. The Agency seeks to work in partnership with developers and has organised a series of seminars for designers, architects and landowners, aimed at increasing outside awareness of the environmental importance of the Thames.

The recovery of the tidal Thames

Historically the tidal Thames supported a wealth of wildlife. One of the more complete records concerns fisheries. Major commercial and recreational fisheries existed for species such as smelt, shad, eel, whitebait and salmon from Teddington to Southend (Wheeler 1979).

Marginal habitat loss due to riverside development and growing pollution reduced the ecology of the river to a very low ebb by the end of the 19th century. In 1957, Alwynne Wheeler, in a report to the Natural History Museum, stated that "there were no resident fish populations between Kew and Gravesend".

Investment in sewage treatment brought about improvements in water quality in the late 1950's. Fish and wildfowl began to reappear the following decade. By the early 1970's, a broad range of invertebrates appeared as pollution levels began to decline. This new food source attracted further species of birds.

This recovery is internationally renowned. Many overseas visitors come to see what can be achieved in a metropolitan river. Sadly, this story is not so well known nearer to home. Many Londoners still believe that there is little life in the river, citing the floating rubbish and the muddy colour. While the former is a problem which many agencies are tackling it has only a small impact on wildlife and the latter is a normal esturial process not related to water quality! Some know a little of the return of the salmon, but are often unaware that this is actively supported by the Environment Agency. Water quality continues to pose a threat.

The tidal Thames is now regarded by many as supporting one of the widest varieties of animals of any estuary in Europe. It has a major influence on the life in the North Sea as well as in the fresh water catchments upstream, it plays a crucial part in the lifecycle of many animals.

Ecology of the tidal Thames

Habitats

Every estuary is unique and has its own set of specific characteristics influencing the overall ecology. The abrupt changes in salinity, temperature, tidal flow, sediment type and habitat diversity will combine to give the estuary its unique ecology.

The differing corridor supports a rich diversity of habitats not found elsewhere in London. Important habitats include reed fringes, mud-flats, shingle beaches rock pools, grazing marshes, relic water meadows, open water and wet woodland. Tidal creeks , islands and dock basins provide further specialized habitats. Redundant structures and barges are used by wildlife as habitats, marginal vegetation adjacent to man made structures provides new habitats.

The mosaic of habitats spread along the tidal Thames form a linear corridor or "wildlife super highway" which enables animals to move relatively freely along its length. The most important and vulnerable habitat along the present river corridor is the tidal foreshore. A continuous foreshore is essential to allow fish, birds and invertebrates to move up and downstream in fulfilment of their life cycles. The twice daily rise and fall of the tide provides a changing variety of habitats and views. Tidal Creeks are also important wildlife refuges; 'estuaries in miniature' - they provide a unique habitat to supplement and safe guard species of the main river channel. Creeks provide safe and quiet feeding grounds for species and support a diversity of plants which prefer a habitat with a lesser tidal regime.

Wildlife

Birds

The exposed mud, shingle beaches and rock pools at low tide provide a valuable feeding area for many of the 38 species of bird which reside on the Thames for all or part of the year. Four species of bird present are noted to be of nationally important levels of abundance, with more than 1% of the British wintering population, these are the Cormorant, Gadwall, Teal and Lesser Black Backed Gull. Shelduck, Lapwing, Ringed Plover, Dunlin, Redshank and common Gull are of regional importance. 15 species are full Red Data species, with seven being os European conservation concern (see fig. 1)

Over 10,000 waterfowl overwinter on the Thames. At high tide, redundant jetties and adjacent relic marsh provide a refuge for wildfowl and raptors, as well as supporting resident small mammals, amphibians and reptiles.

Fish

The river now supports important recreational an commercial fisheries, such as one of the largest estuarine commercial eel fisheries in the U.K. It is gaining recognition as one of the most important nursery areas for young marine fish in the southern North Sea. Indeed it is the premier nursery for dover sole in the UK. The smelt, now a rare species in european terms, has returned in strength.

Most fish species in the Thames, feed across the foreshore area so their continuing abundance is dependent upon the retention of this valuable resource.
Large scale migrations of the very early life stages of several fish species migrate upstream during the spring and summer months. So small as to be yet unable to swim effectively against the stream, they float up on the flood tide and find refuge during the ebb at the margins of the channel in pools and eddies along the beaches.

Invertebrates

Invertebrates (such as worms, shrimps, snails, etc.) are an important food source for the diverse fish populations of the thames. The recent improvements in water quality have resulted in an increase in marine fish species utilising the estuary as a nursery area. It is essential to maintain a continuous foreshore along the length of the tidal Thames to allow both localised and extensive migrations of the various invertebrate and fish species. If this is not maintained reductions in the estuarine/freshwater fauna may result elsewhere in the river.

The invertebrate distribution of the thames estuary closely reflects the salinity gradient and habitat diversity of the estuary. more than 350 freshwater, estuarine and marine invertebrates have been recorded over recent years. In the upper Thames estuary (Teddington to london Bridge) where the substrate tends to be gravel with some find deposits of mud, typical freshwater species such as insect larvae, nymphs and mollusca occur with decreasing diversity downstream attributed to the reduction in habitat diversity and increasing saline penetration. In the mid thames estuary (London Bridge to Gravesend) oligochaete worms are dominant with a downstream sequence of species associated with salinity. Typical estuarine species such as the crustacean Corophim volutator and the polychaete worm Nereis diversicolor are also present, particularly on the intertidal mud banks. Some sites within this area show a high degree of stress and an impoverished invertebrate community.

Encroachment

the recovering river still represents a fragile environment. Encroachment is the historic tendency for waterfront development to extend ever-further onto the foreshore.

Bankside habitat along the Tidal Thames is limited and in the majority of areas the conservation interest is restricted purely to the foreshore. Completely natural river banks within the tidal river are very rare, only 1%. Sloping artificial banks account for 32% and support a diversity of freshwater and estuarine plant species. the remaining banks consists of vertical sheet-pile of stone wall which reduces plant establishment, limits access to the foreshore, restricts the gradation of foreshore habitat and increase the velocity of the river flows.

Encroachment will lead to a loss in river habitat. Historically, the cumulative effect has been significant, even if individual encroachments have been small. Encroachment will threaten entire species.

Channel narrowing due to encroachment is likely to lead to changes in sedimentation patterns, local velocities and scour. Such effects could severely disrupt the migration of fish, invertebrates and birds. Again such effects are cumulative, large scale encroachment could sever the continuity of the river corridor blocking migratory routes up and down river.

Historically access to the foreshore was always very important, for transport, commerce and recreation. Sadly, access has been severely reduced by development due to the loss of step and stair access points. Today, increasing numbers of walkers, anglers, sailors, commercial eel fishermen and others use the foreshore, from a diminishing number of access points. The thames path will bring more people to the edge of he river. This will encourage more demands for access to the shore. Access to the foreshore should be protected and promoted where safe and appropriate.

Archaeology

The Thames foreshore is london's most extensive archaeological site. it provides the means to trace the development of the river ad its hinterland from the time of the very earliest human settlement into one of Europe's busiest waterways.

These remains are fragile and are being constantly degraded by the daily ebb and flow of the tides. Any further disturbance of the foreshore can damage or destroy these valuable remains and may increase the erosive power of the river. the detrimental effects on the archaeological remains of any such development should be considered at the earliest opportunity, so that adequate measures can be taken to ensure the survival of this unique and irreplaceable archaeological resource.

The Way Forward - Towards Sustainable Development

The Environment Agency does not want to stand in the way of development along the riverside, rather it wishes to bring to the process an understanding of the hydraulic, ecological and social issues. a fuller, more balanced debate will tend to bring more informed and sustainable solutions, through partnership rather than confrontation.

A more strategic view of the river s now being promoted. the Agency is actively involved in The Estuary Management Plan promoted by English Nature and in its own Local Environment Agency Planning process. It has contributed to both the Government office for London's "Thames Strategy" and the Agency's "Thames landscape Strategy" (Hampton to Kew). All these documents stress the importance of the foreshore as part of the wildlife corridor and promote the principle of sustainable development.

Education is the key factor. Many developers perceive that the river is still polluted and that it contains little of value to protect. the agency is actively seeking opportunities to address this issue. A leaflet on encroachment has been launched as has one on invertebrates, fish and birds.

The Agency is working in partnership schemes at a range of locations to promote habitat regeneration in docks, creeks and along the river front. many of these will incorporate nature interpretation sites, to promote wider understanding of he ecology of the river.

Within many riverside developments lie real opportunities for habitat protection and creation. Agreements on sustainable developments incorporating habitats enhancements such as beach replenishment/creation schemes, reed fringes ad access to the foreshore, riverside paths and educational signage are now being achieved. in recent years, developers are beginning to see clear benefits to themselves and their development from being associated with creative sustainable solutions in such a high profile environment against the background of a recovering ecological resource.

It is evident today that there is renewed life in Old Father thames. The Agency believes that it is possible to achieve genuinely sustainable development along its banks, with commercial business and domestic needs balanced by the maintenance of a high quality ecological resource.

NOTES ON SITES OF INTEREST

PUTNEY BRIDGE AREA

The Thames is an extremely widely used recreational resource in this area, with an abundance of rowing clubs and sailing clubs on the banks of the river. The original footings for Putney Bridge have been discovered, on the north bank, downstream of the existing bridge, buried within the foreshore. In the vicinity, other archaeological discoveries have been made, including a medieval fish trap.

POINT PLEASANT

Calor Gas Site

A new Riverside Residential development is currently being developed. This will include a riverside walk. Part of the proposals include house boat and visitors moorings. The Environment Agency originally objected to these proposals due to the loss of exposed foreshore. This objection was supported by the planning authority, therefore several mitigation measures are to be undertaken including archaeological and invertebrate surveys. Foreshore monitoring works will be undertaken on the site to assess the likely impacts.

Shell - Mex Depot Site

Plans exist for the development of multi-storey residential units and for the reuse of the jetty on this site. The Agency has stated that it will object to ant proposed encroachment or cantilevered development above the foreshore. This site is part of an options study commissioned by the Agency for Wandle Creek.

The foreshore in this area is an important bird feeding site and smelt spawning ground.

BROOMHOUSE DRAW DOCK

As part of a residential development alongside the Thames in Hurlingham, environmental and educational improvements facilitated by a section 106 agreement are proposed. The Draw Dock will be enhanced by the creation of reed fringes, erection of educational signage, improved public access and litter clearance. The Agency has assisted architects with the proposals and encouraged the developer to enhance the river frontage and create a riverside path.

CHELSEA HARBOUR

Chelsea Harbour is an exclusive scheme that was developed during the late 1980's. An interesting feature contained is the ball on the tower which moves in response to the changes in the river level. Chelsea Harbour is now used as the site for external displays for the London Boat Show.

Again it is important to note that the area around Chelsea Harbour is a valued feeding area for fish within this stretch of the Thames.

EFFRA SITE

John Gummer approved proposals for the development of the Effra Site, which involved encroachment into the thames extending to 18 metres in places into the river across a 300 metre stretch of the foreshore. The NRA gave evidence against the proposals at the planning appeal on flood defence and conservation grounds. However, the inspector ruled that there was insufficient data to support the objections. Since that decision, the NRA/EA has undertaken hydraulic and ecological studies to further support its original misgivings. Since the planning appeal, a Bronze Age jetty and a Tudor jetty standing c above the foreshore have been found.

This site is now being developed by St. George and the new proposals to limit encroachment, provide access to the foreshore and enhance the river frontage, are strongly welcomed by the Agency.

The vertical flood defence wall with wooden fender supports a variety of species, including hemlock water dropwort, celery leaved buttercup and wild angelica. Sea aster is also present in this reach. The adjacent site also provides a habitat with a variety of river related tree species, such as alder, willow and birch. The foreshore in this area is used as a feeding area for gulls, ducks and herons. Smelt are believed to spawn close to this area (Wandsworth to downstream Chelsea). The reach between Vauxhall Bridge and Wandsworth is particularly important for birds both at high and low tide.

Downstream of the bridge, the probable effect of the M16 development in terms of siltation, smothering the foreshore and restricting access, can be seen.. The exposed shingle foreshore (with associated shallow pools) is the largest and most accessible (refurbished steps and gates in 1994) close to the city centre.

Between Lambeth and Vauxhall Bridges the foreshore is rich in archaeological artifacts. Along the north bank can be found the remains of pre-historic reed beds, marsh lands and barge beds.

CAMELFORD HOUSE

The initial proposal for this site included a level of encroachment that would have been comparable with the encroachment damage caused by the M16 building. The Agency opposed this proposal, which led to the developer meeting with Agency staff and formulating a new scheme which will provide access to the foreshore, a riverside walkway and landscaping.

COUNTY HALL

From Easter 1997, the lower floors will house one of the world's largest public aquariums. Environment Agency staff are advising the developers on a tideway exhibit and interpretation material. There are very substantial potential Public Relations spinoffs in terms of local exhibit aquaria and displays.

BERMONDSEY AREA

This part of the Thames provides a visually impressive reach with Tower Bridge and the Tower of London dominating the view. During the 19th century, gulls feeding on the foreshore were shot from the bridge.

St. Saviour's Dock is the confluence of one of London's lost rivers, the Neckinger, and has an almost Dickensian feel to it. The new footbridge is part of the Thames Path and was designed to minimise impact on the foreshore. Large ships timbers on the shore downstream show where for many centuries, wooden sailing ships were broken up in informal breakers yards. Turner's painting "The Fighting Temeraire" was of the vessel Temeraire being towed to such a breakers yard at Rotherhithe. The wrecks of many such vessels remain in the mud in the lower estuary. Often drawn up on the shore, redundant vessels were left for the public to destroy as firewood.

The redevelopment of the wharf warehousing in this area has brought some new foreshore access points. The Environment Agency were keen to protect the conservation interest of the shingle foreshore and plants established on the timber frontage piles. New local owners now promenade on the beaches and beachcombing is a popular pastime.

There have been several redevelopments proposed at Hermitage where the Agency aims to protect the continuous expanse of shingle foreshore by recommending no encroachment, safeguarding of the waterman stairs and a riverside walkway. A developer has approached the Agency with plans to encroach into the Thames but a package has been negotiated where the building has moved back from the Thames with no encroachment involved, and includes a new riverside walkway across the inlet with new reed planting.

BULLHEAD WHARF

This represents one of the earliest examples of Agency successes with developments involving encroachment. Whilst the refurbishment of the wharf includes a small area of encroachment, in compensation, a new single foreshore with educational signage is under construction.

LIMEHOUSE STAIRS

This is a good example of where the Agency, as a developer, has undertaken sea defence works which have included the refurbishment of these historic stairs and cleaning of the adjacent foreshore.

DOCKLANDS

The redevelopment of the dock basins has been largely undertaken without any consideration of the renascent ecology. Indeed, the LDDC has been slow to appreciate that this will require proper management regimes. Large bird, fish and invertebrate populations are now associated with the docks. Agency Fisheries staff have conducted large scale specialised fish rescue operations at the foot of Canary Wharf Tower, rescuing thousands of dace, smelt, sprat, eel, flounder, perch, bass, carp and other species.

A photograph of Greenwich beach in the 1930's shows the popularity of the river beaches, even when the river was more polluted than now! Today, many people promenade and beachcombe on this shore. One problem with shore access generally, is that in the absence of information, most people assume they should not go on to the shore. In fact, many sites, such as Putney Hard, have been accessed for generations. The Agency wishes to promote access where safe and possible.

LONDON YARD

London Yard presents a future vision. Constructed 15 years ago in a derelict former industrial embayment, the single beach has remained clean and attracts large human and wildlife populations!

BOW CREEK/EAST INDIA DOCK

The Agency has created a new reed bed in Bow Creek as part of a flood defence scheme. Agency input into the DLR Ecostation on Limmo Peninsula has made substantial environmental gains. LDDC proposals (actively assisted by the Agency) for the East India Dock basin include beach creation and marginal vegetation stands.

GREENWICH MILLENNIUM SITE

At an early meeting with the developers, it became apparent that the plans assumed no life in the river, no local environmental interest or regeneration schemes. As a result of the meeting, the emphasis of the Exhibition is likely to be altered significantly to bring environmental awareness, sustainable development and urban regeneration forward as major themes. Given complex problems with the site, the Exhibition could provide a superb flagship partnership project for the Agency early in its life, producing huge international Public Relations for the year of the Exhibition and permanent environmental gains to the site.

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