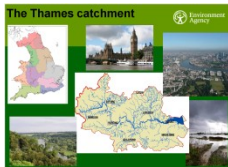


## Presentation 2 – Driver, Alastair



In this presentation I am going to summarise the remarkable recovery of the Thames over the last 50 years, the major initiatives we have for further improvement over the next 50 years and hopefully in so doing demonstrate why the Thames recently entered a competition for the world's largest environmental award.

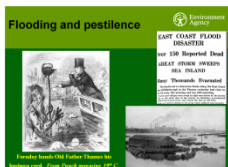


The River Thames is the UK's second longest river at 294 kms long.

The catchment covers 16,000 km<sup>2</sup>, with a dense population of 13 million people.

The River Thames flows from the green rural upper reaches of the Cotswolds, through large urban centres of Oxford and Reading and the UK's capital's city, London, on through the industrial estuarine plains of Essex and Kent, and thus to the North Sea.

The Thames is non-tidal down as far as Teddington Lock in West London, and is then tidal throughout London with a tidal range of 7 metres.



Major historic events include:

The Great Stink of 1858:

Introduction of Water closets to the more affluent households of London in the early 19th century.

Sewers originally intended to take rain water into the Thames then carried raw sewage – diseases such as cholera were rife.

'Great Stink' of London in 1858 - the overpowering smell from the Thames closed Parliament.

A bill was rushed through Parliament and became law in 18 days, to provide more money to construct a massive new sewer scheme for London

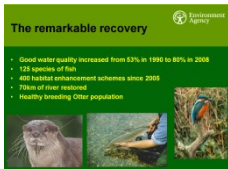
1953 Floods:

307 people died across southeast England

100,000 hectares of eastern England flooded by sea water

1950s

Natural History Museum declared the River Thames a dead river



In the 1960's works to sewage treatment works ended the regular dumping of raw effluent into the river. Tighter regulations on riverside industry helped too and by 1974 salmon were found in the Thames for the first time in 150 years.

The Water Framework Directive is now taking this to higher levels

Thames estuary supports viable shellfisheries and is a nursery ground for commercial sole and bass stocks. Overall fish diversity is increasing, with 125 species recorded, including internationally important smelt and shad.

In 1991 the NRA adopted the FD Enhancement Policy

But we are not resting on our laurels - we have initiated many major pioneering projects to ensure that we continue this catchment-wide improvement.



Catchment sensitive farming will contribute to sustainable agriculture practices, and ensure the Thames catchment will be able to meet future demands for agriculture production whilst protecting the environment.

Even though the Thames catchment is one of the most densely populated and urbanised parts of the UK, agriculture is one of the most important industries. 35% of the Thames catchment is classified as arable and 19% as grassland. A sustainable agricultural industry is vital to maintaining a high class environment and vibrant rural economy.

App. 25% phosphate, 60% nitrate and 75% sediment in our rivers can be attributed to farming and forestry.

We have increased the coverage of NVZs across Thames region from 71% in 2008 to 83% - this protects surface and groundwaters from pesticide and other agricultural chemical pollution.

CSF initiatives are helping many hundreds of farmers and landowners to reduce rural diffuse pollution through the adoption of practices that will improve the management of nutrients, soils, water use, pesticides and waste.



The Jubilee River Flood Alleviation Scheme has led the way in sustainable flood risk management by demonstrating how it can help support both the natural environment and economic regeneration.

In the mid 1980s we started to take a more holistic approach to flood risk management.

Our Jubilee River Flood Alleviation Scheme - a new 11km stretch of waterway - exemplifies how we are now working with, and for, nature.

Since opening in 2002 it has been used for flood alleviation on 20 occasions, protecting over 5,500 homes and businesses.

We created major areas of habitat, including 193 hectares of native woodland, 38 hectares of reedbed and 326 hectares of wildflower grassland.

It has also created 14km of new public rights of way with disabled access, bridleways and cycleways that link with the UK National Cycle Network.

Many people do not realise it is a flood bypass channel, but view it as a pleasant country park.



The London Rivers Action Plan is delivering a wide range of benefits which contribute to health and wellbeing, society and the natural environment throughout one of the world's major cities.

There are also many organisations and partnerships implementing LRAP.

Part of LRAP is an interactive website that maps out all the projects that are in progress or have been completed in London.

There are detailed published case studies for each project – demonstrating the multiple benefits that urban river restoration can deliver for the community and the local economy.

As a result of LRAP we now have a Green Grid for London with:  
 Multiple benefits of corridors recognised in planning policies.  
 Guidance influencing developers to create new open space.  
 Government funding to improve existing open space network.



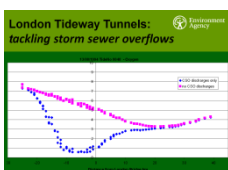
Sutcliffe Park, Greenwich, is a good illustration of how the London Rivers Action Plan is delivering a range of benefits which contribute to health, well being, society and the environment.

Full-time public liaison officer was in post during the construction of the scheme

By bringing the Quaggy out of its culvert, a meandering river has been reborn. Now, the river can overflow into the park using it as a flood storage area. And at other times, the park is there for local communities to enjoy. A network of pathways and viewing points criss-cross the park.

Within the wetland areas, there are wooden boardwalks making the area more accessible for prams and wheelchairs. It is a habitat for a huge variety of plants and animals, and features wildflower meadows, reed beds, lakes and ponds.

Since opening in 2004, visits to the Park have increased by 73%.

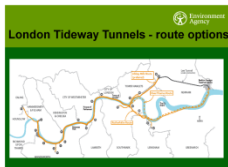


The London Tideway Tunnels (LTT) will improve the ecology of the river and the Thames estuary, which in turn will benefit regeneration, river recreation and tourism.

39 million tonnes of untreated sewage flushes into the Thames tideway in a typical year – and in wetter years this figure can increase threefold.

The discharges result in unsightly detritus on the foreshore and in the river, poor water quality (low dissolved oxygen) risking fish kills and impacts on fish migration, and raised health risks to river users.

Explain graph – dissolved oxygen levels in the river in relation to distance from London Bridge with and without CSO discharges – major sag just upstream.



Thames Tideway Strategic Study (TTSS) conducted 6 years of research on the impacts of intermittent discharges on the river Thames and its tributary the River Lea and proposed potential solutions, having regard to costs and benefits.

The solution, developed with Thames Water, is for two storage tunnels (Lee tunnel and Thames tunnel) to intercept the worst discharges and transfer the effluent to Beckton STW for treatment, and an upgrade to Beckton STW to increase treatment capacity.

The overall cost for the two tunnels is now estimated at £4.2 Bn.

The tunnels will be app 37Km long in total, 7 ms in diameter and up to 75 ms deep.

The Thames and Lee Tunnels are part of wider package of major improvements to London Sewerage system, called the London Tideway Improvements, which also includes upgrades to all of London's five sewage treatment works.

Construction on the Lee Tunnel has started and will be completed by 2014 and consultation on the preferred route of the Thames Tunnel is underway and construction is expected to be completed in 2020



The Thames Estuary 2100 Plan is the first major UK engineering project to put climate change adaptation at its heart, but it also considers how future changes in society and the economy could affect tidal flood risk and how that in turn is likely to impact on estuarine ecology. Current defences protect 1.25M people and £80Bn+ of property value from tidal flooding.

The key driver for the project is that tidal flood risk is increasing in the Thames estuary due to: Climate change and sea level rise, ageing of the current flood defence infrastructure, more people living and working in the defended floodplain.

Starting in 2002, we undertook 300 studies and investigations to understand what is at risk and how that risk is likely to change, as well as options for managing risk and associated cost/benefits.

Throughout the plan development many key strategic stakeholders across the estuary were consulted and updated on progress, and their responses were used to refine the plans.

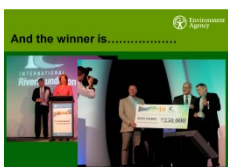
These studies and consultations demonstrated that:

Climate Change – app. 1m sea level rise expected by 2100

First 25 Years (2010-2035) – Continue to maintain the current flood defence system including planned improvements and commence creation of new habitats.

Next 15 Years (2035 – 2050) - Commence replacing/upgrading defences upstream and downstream of the barrier and continue with habitat creation

From 2050 - start the planning and preparation for a new or modified barrier ensuring delivery by 2070



The Chairman of the international judging panel Professor Paul Greenfield (Vice-chancellor of the University of Queensland) confirmed to me that the Thames had won fairly convincingly because we had demonstrated:

- significant sustainable environmental improvement over a long period, across all key aspects of catchment management
- extensive partnership working and stakeholder engagement in planning and developing our activities
- reasonable levels of innovation
- clear commitment not to rest on our laurels, but to strive to improve the environmental quality of the catchment still further, whilst taking account of key pressures such as climate change
- excellent and extensive data and evidence to back up all of the above



We are promoting our success as widely as we can and certificates have been presented to dozens of key partner organisations.

The trophy is made of 100% pure grade aluminium and the shape replicates the shape of the basal section of the Coolibah palm leaf, which Australian Aboriginal peoples used for holding water, food, etc.

The trophy is retained in perpetuity.



In conclusion, we have seen a remarkable transformation in the Thames, from a river that was declared biologically dead in London 50 years ago, to the healthy thriving ecosystem that it represents today.

The projects featured in our submission show that we and our many hundreds of partners are not just maintaining the improvements of the past, but are already delivering major pioneering initiatives that will ensure that the Thames reaches its full ecological potential for the benefit of people and wildlife - in perpetuity.

### Twinning Programme

Finally I am pleased to say that we will be donating the vast majority of the prize money to a twinning programme administered by one of our key partners the Thames River Restoration Trust. These funds will be spent on a twinning project on the Yamuna River a tributary of the Ganges in India, benefitting habitats and species such as the Gharial and Ganges River Dolphin. We believe that there is much to be learnt from not only our successes, but also the many setbacks and failures that we have experienced along the way.