Tidal Thames Catchment-based Pilot Project

Context

The catchment of the Tidal Thames flows from Teddington, in the west, to the Thames estuary near Southend-on-Sea, in the east. The water surface area for this length of the Thames is 248km^2 (Environment Agency, 2011). Flowing through London, the tidal Thames is affected by the most densely populated urban area in Europe and is subject to a wide range of environmental pressures.

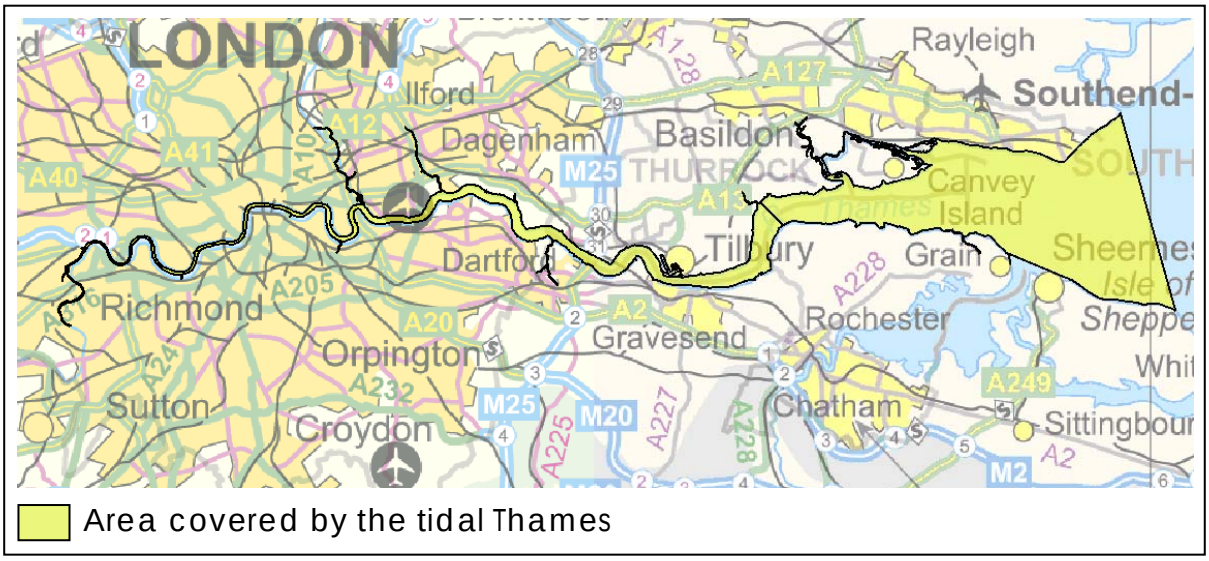

Figure 1. Tidal Thames Catchment-based Pilot Project area

Through central London the tidal Thames is constrained by the Thames Embankment which results in a 7m tidal range and strong currents. These factors can create an inhospitable environment for wildlife living in or by the river, or using it as a route from the North Sea to the watercourses of the Thames River Basin. The estuary of the tidal Thames is one of the most ecologically diverse in England and Wales and plays a major role in supporting North Sea fish stocks (Environment Agency, 2009a).

While water quality has in general improved significantly since the 1960's there are still challenges to be addressed. The main challenge centres on the impacts of storm discharges from the five major sewage treatment works which serve London and from the combined sewer network.

Current Status

The River Basin Management Plan Thames River Basin District (Environment Agency 2009b) divides the tidal Thames into three water bodies – Thames Upper, Thames Middle and Thames Lower[1]. All three have been designated as Heavily Modified Water Bodies (HMWB) and are therefore assessed for their

[1] Thames Upper water body: Teddington to Cremorne Gardens. Thames Middle water body: Cremorne Gardens to Stanford-le-Hope. Thames Lower: Stanford-le-Hope to Estuary (Former Seaward Limit)

chemical status and ecological potential. The designation as HMWBs also impacts the process by which these water bodies are given their overall classification – if a HMWB's flow conditions are regarding as failing then the decision as to how to classify the water body does not take into account any of the ecological elements. The classification decision is made on the basis of the mitigation measures and the chemical elements. Figure 2 lays out the Classification Decision Tree for HMWBs. Both the Upper and Middle Thames water bodies have flow conditions which are regarded as failing (Tidal Regime – Freshwater Flow: Does not Support Good) and their classification therefore does not take into account ecological elements.

Table 1 summarises the current status/potential of each of the three water bodies within the tidal Thames catchment.

Water body name	Current Overall Potential	Current Tidal Regime - Freshwater Flow status	Current Mitigation Measures Assessment status	Current Chemical Status	Current Ecological Potential
Thames Upper	Moderate	Does not support Good	Moderate	Good	Moderate
Thames Middle	Moderate	Does not Support Good	Moderate	Fail	Moderate
Thames Lower	Moderate		Moderate	Fail	Moderate

Table 1. The current status/potential for each water body within the tidal Thames catchment.

Objectives

The objective of this project is to pilot on the tidal Thames a catchment-based approach to delivering integrated river management which balances environmental, economic and social demands.

The output from this project will be an effective, deliverable and sustainable Catchment Management Plan which will be developed in consultation with stakeholders. There are a wide variety of stakeholders who have an interest in the tidal Thames: boat operators from tug boats to dredgers to ferries; recreational rowers, kayakers and sailors; houseboat owners; walkers and joggers; tourists; riverside residents; local authorities, commercial and statutory organisations and the Port of London Authority; river related and wildlife charities and spectators. Thames21 and Thames Estuary Partnership (TEP) will engage stakeholders and utilise their experience, concerns and expertise to develop a Plan that is owned by the community of the tidal Thames.

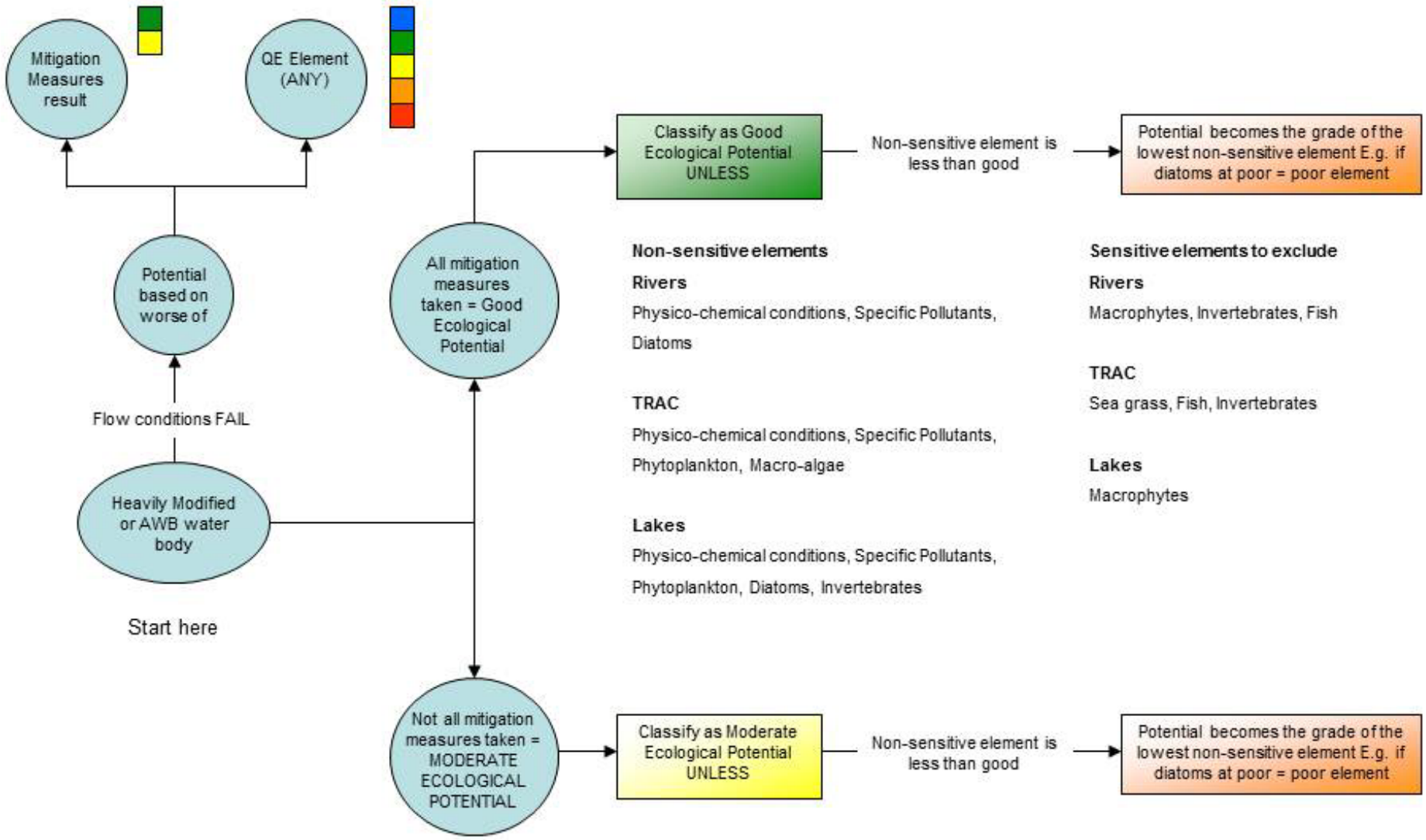

Figure 2. Classification Decision Tree for Heavily Modified Water Bodies (HMWB) and Artificial Water Bodies (AWB)

Initial views of pressures

The River Basin Management Plan Thames River Basin District (Environment Agency 2009b) identifies the elements for each water body which will fail to achieve good status/potential by 2015. These elements form the basis for our initial view on the pressures faced by the tidal Thames in the context of the Water Framework Directive (WFD). These pressures are summarised in Table 2. There is some information currently missing from the 'Additional information' column in the table – we are waiting for further details from the Environment Agency.

It is important to highlight that the information available for the tidal Thames (a transitional water body), on the elements and mitigation measures used to classify the water bodies, is much less advanced than the information available for freshwater rivers. The Environment Agency has already focused on developing detailed measures for freshwater rivers and is now starting this process for transitional water bodies – this pilot project will feed into this process. However what this does mean is that at the start of this project there is very little specific information readily available about the pressures on the tidal Thames from the current Environment Agency Water Framework Directive documentation.

Engagement History

Thames21 and TEP combined have 36 years experience in stakeholder engagement. TEP engages with local authorities, national agencies, industry, voluntary bodies, local communities and individuals. Thames21 engages with grassroots community groups, local residents and environmental volunteers. Thames21 and the TEP both recognise that there many differences between the stakeholders in west and east London and that their concerns and interests relating to the river are likely to be quite different. Working together Thames21 and the TEP can involve and bring together this huge variety of stakeholders and interests in the tidal Thames.

The tidal Thames catchment is an extremely busy area with a long history of engagement for consultations with some if not all of the various stakeholder sectors who will need to be involved with this pilot project. Past water consultations include The Thames Estuary Management guidance, Recreational Use of the Thames, Enjoying Water EA Report, State of the Thames Estuary, Tidal Thames Habitat Action Plan, Thames Strategy East planning supplementary guidance for the London Plan, Natura 2000, Thanet Wind Farm, Gunfleet Sands Wind Farm, DP World London Gateway Port, Balanced Seas MCZ Project for the South East and the ongoing Thames Tunnel consultation. Current and upcoming consultations include MMO Marine Planning and the Thames Estuary Airport.

Stakeholders who take an active part in consultations are often the same individuals representing their sector time and time again. As a result, many stakeholders may suffer from consultation fatigue, information overload and possibly a reduction in earnings for those wishing to attend daytime meetings

but are not retired. Most of these stakeholders will expect the Catchment Pilot team to be aware of and familiar with information given previously and will want to see an integrated management plan for the catchment taking into account all other management needs for the area. Failure to do so in the past has disillusioned many sectors resulting in distrust of the majority of regulatory bodies.

Thames Estuary Partnership and Thames21 have a strong history of engagement with stakeholders along the tidal Thames. Both organisations have an awareness of previous consultations across the catchment, the information that stakeholders have previously shared and are trusted by stakeholders to act on their consultation in the best interests of the river. Through this we hope that input into this new consultation will be more enthusiastic!

In addition, as part of this pilot project Thames21 is planning to run pop-up workshops across the catchment which will aim to engage local residents and interest groups who get involved in Thames21's practical activities and have never previously been consulted with regard to the Water Framework Directive. As the Thames runs through London, such a densely populated urban area, it is critically important to engage all river users, including the communities living along the Thames, if this pilot catchment project is to be a success. In identifying the current status of the water bodies along the tidal Thames the issue of flow in the upper and middle sections has been highlighted as a key issue. This is just one example where local community engagement is likely to be very important as we will need their co-operation and active participation if we are to see to change behaviour with regard to water use.

Water body	Element	Current status	Additional information	Justification for not achieving good status by 2015
Thames Upper, Middle and Lower	Mitigation Measures Assessment: Operational and structural changes to locks, sluices, weirs, beach control, etc	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Upper, Middle and Lower	Mitigation Measures Assessment: Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Upper, Middle and Lower	Mitigation Measures Assessment: Managed realignment of flood defenses	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Upper, Middle and Lower	Mitigation Measures Assessment: Remove obsolete structure	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Upper and Middle	Tidal Regime – Freshwater Flow	Does not support Good Ecological Potential	This measure relates to the 'flushing' flow through the transitional water and which creates its transitional characteristics. If there were no such flow at all then it would become increasingly saline and marine in character.	Disproportionately expensive (HT1a)
Thames Middle	Mitigation Measures Assessment: Indirect / offsite mitigation (offsetting measures)	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Middle	Dissolved Oxygen	Moderate Ecological Potential	Poor dissolved oxygen on the tidal Thames is primarily a result of storm discharges from the five major sewage works and from the combined sewer network. This measure will be addressed by the construction of the London Tideway Tunnels which are planned to be delivered over the next two river basin cycles.	Disproportionately expensive (DO1a)

Table 2. A summary for the three tidal Thames water bodies of the elements that will fail to achieve good status/potential by 2015 and the justification for not achieving this status/potential (Environment Agency 2009b). Explanations of the justification codes are provided in Appendix 1.

Thames Middle and Lower	Benzo (ghi) perylene and indeno (123-cd) pyrene	Moderate Chemical Status	These are polycyclic aromatic hydrocarbons (PAHs). Traffic and domestic fuel combustion are now the main sources of PAHs in the UK environment (Environment Agency 2007). PAHs attach strongly to sediments, they are very stable and can remain in the environment for a long period of time. They are classified as Persistent Organic Pollutants (POPs) and are identified as priority hazardous substances under the Water Framework Directive. This measure is part of the EA's ongoing investigations on the tidal Thames (March 2012)	Technically infeasible (C2a)
Thames Middle and Lower	Tributyltin Compounds	Moderate Chemical Status	The main source of Tributyltin Compounds (TBT) to the marine environment is from its use as a biocide in ship antifouling paints, which then slowly leach TBT into the surrounding water. There are now enforced restrictions on its use, and a complete ban on its use on all vessels. However it has a long residence time in sediments. (Environment Agency 2012) This measure is part of the EA's ongoing investigations on the tidal Thames (March 2012)	Technically infeasible (C2a)
Thames Middle and Lower	Invertebrates	Moderate Ecological Potential	Awaiting additional information which has been requested from the Environment Agency	Not Required (MS)
Thames Middle and Lower	Dissolved Inorganic Nitrogen	Moderate Ecological Potential	High levels of dissolved inorganic nitrogen on the tidal Thames are primarily a result of storm discharges from the five major sewage works and from the combined sewer network. This measure will be addressed by the construction of the London Tideway Tunnels which are planned to be delivered over the next two river basin cycles.	Disproportionately expensive (N1o)

Table 2. Continued

Thames Lower	Mitigation Measures Assessment : Sediment management	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Lower	Mitigation Measures Assessment : Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works.	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Lower	Mitigation Measures Assessment : Bank rehabilitation / reprofiling	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Lower	Mitigation Measures Assessment : Increase in-channel morphological diversity	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)
Thames Lower	Mitigation Measures Assessment : Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution	Not in Place	Awaiting additional information which has been requested from the Environment Agency	Technically infeasible (M3f)

Table 2. Continued

References

Environment Agency, 2007. *UK Soil & Herbage Pollutant Survey: project summary*. [online] Available at: < http://publications.environment-agency.gov.uk/PDF/SCHO0607BMTE-E-E.pdf> [Accessed 2nd March 2012].

Environment Agency, 2009a. *River Basin Management Plan Thames River Basin District*. [online] Available at: < http://www.environment-agency.gov.uk/research/planning/125035.aspx> [Accessed 26th January 2012].

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