



TUESDAY 11 JULY 2017

ZSL SCIENCE AND CONSERVATION EVENT

The Meeting Rooms, Zoological Society of London,
Regent's Park, London NW1 4RY

AGENDA

The state of the Thames

Chair: Richard Aylard, External Affairs and Sustainability Director, Thames Water

Receive the following communications:

Joe Pecorelli, Estuaries and Wetlands, Marine and Freshwater Project Manager, ZSL
The Tidal Thames Tributaries

Adrian C Pinder, Bournemouth University Global Environmental Solutions (BUG)
*The Dynamics of estuaries and their fish populations: implications for fish conservation
in the Tidal Thames*

Joanna Barker, Project Manager, Marine & Freshwater Conservation, ZSL
Seal conservation in the Greater Thames Estuary: research, citizen science & stakeholder engagement

ABSTRACTS

The state of the Thames

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The Tidal Thames Tributaries

Joe Pecorelli, Estuaries and Wetlands, Marine and Freshwater Project Manager, ZSL

The Tidal Thames and its tributaries should be viewed as one ecologically coherent system. The quality of the water that flows out of the tributaries has a direct impact on the water quality in the estuary and a number of species, such as the Critically Endangered European eel, require connectivity in order to move from the estuary up into the freshwater tributaries.

ZSL has, for the last 6 years, been recruiting and training a team of over 1000 dedicated and skilled citizen scientists to work alongside us in the region. This team of citizen scientists gather data which are used by ZSL and Catchment Partnerships, that manage rivers in London, to drive improvements in the tributaries. This presentation will highlight some of the citizen science work we carry out in the Tidal Thames tributaries and in particular focus on how our European eel project and project to identify sources of pollution, the 'Outfall Safari', are achieving conservation impact.

Joe Pecorelli is a Project Manager for the Zoological Society of London (ZSL). He has worked extensively in public aquaria, education and conservation. In 1997, as Curator of the London Aquarium, he founded the National Aquarium Workshop, in response to a need in the aquarium community to share experience, knowledge, improve standards of animal husbandry and encourage collaborative conservation work.

In 2004 he helped set up ZSL's Tidal Thames Eel Monitoring Programme and in 2011 introduced volunteer citizen scientist to the programme. In so doing the project became the largest and most wide-ranging study on eel migration through a single catchment in the UK.

Since 2014 he has been a trustee of the Friends of River Crane Environment, a charity set up to enhance and protect the environment of his local river in West London.

Joe has considerable experience of public speaking including, for 4 years, organising and participating in the Sir David Attenborough family lecture. He is a passionate advocate for wildlife conservation work that engages and benefits from the skills, energy and knowledge of volunteers.

The Dynamics of estuaries and their fish populations: implications for fish conservation in the Tidal Thames

Adrian C Pinder, Bournemouth University Global Environmental Solutions (BUG)

While estuaries are of great value to wildlife, their provision of ecosystem services (e.g. transport, fishing, leisure and power generation) has placed such environments under considerable stress from anthropogenic activities worldwide. Since being declared as 'biologically dead' in 1958, dramatic improvements in water quality have seen the return of 125 fish species to the Thames Estuary, making it a global exemplar for ecological restoration. However, our understanding of the true extent of fish utilisation continues to be constrained by the logistical challenges associated with conducting biological surveys within the highly dynamic environment of the Thames Estuary and a corresponding lack of focused study.

This presentation explains how these survey challenges are being overcome to study the role of the Thames Estuary as a nursery for early life history stages (ELHS, i.e. eggs, larvae and juveniles). During early development, fish exhibit limited locomotory capacity and, thus rely, on low flow refuge areas and/or the synchronised utilisation of tides to govern their temporal, lateral, vertical and longitudinal dispersal and distribution within the estuary. Due to their elevated sensitivity to poor water quality, construction noise and channel encroachment, enhancing the knowledge base pertaining to how ELHS utilise the Thames Estuary, has been identified as a priority knowledge gap in need of address. With reference to future water quality improvements to be realised from the construction and operation of the Thames Tideway Tunnel, the results of this project will be used to develop a temporal and spatial baseline of how different fish species use the Thames Estuary, against which future ecological improvements can be measured. The outputs of this study will also be applied to support more robust, evidence based impact assessment and sustainable development practice in the Tidal Thames, with wider application to other large estuaries throughout northern Europe.

Adrian Pinder is a fisheries scientist with a career extending over 30 years. Currently based at Bournemouth University, Adrian heads 'BUG', a consultancy undertaking fisheries investigations and developing sustainable environmental solutions throughout the UK and abroad. Outside his day job he also serves in a voluntary capacity as Director of Research for the Mahseer Trust, a NGO set up to conserve some of south Asia's most threatened fish species. Adrian's research extends across a broad range of species and disciplines, but a common theme and specialism throughout his career has been the early development and ecology of larval/juvenile fish, the factors which affect recruitment success and the role of estuaries in these processes.

Seal conservation in the Greater Thames Estuary: research, citizen science & stakeholder engagement

Joanna Barker, Project Manager, Marine & Freshwater Conservation, ZSL

Beneath the turbid water of the Thames is a thriving population of two seal species – the harbour seal (*Phoca vitulina*) and grey seal (*Halichoerus grypus*) – a wildlife spectacle that many people in the region are unaware of. Before ZSL initiated the Seal Conservation Project in 2011, these seal populations were some of the least studied and understood in the UK. Through tagging work, annual surveys and collecting over 1,000 public sightings, ZSL has developed important comparable datasets, allowing us for the first time to chart trends in seal population dynamics across years and investigate how the two species use the Greater Thames Estuary. This research is used as part of the Greater

Thames Seal Working Group, a network comprised of stakeholder representatives from all sectors, to inform seal conservation and management in the region.

It is a very interesting time to study seals in the UK. Grey seal numbers have rapidly increased over the last 15 years, especially on the East coast of England. This has led to new behaviours being observed, such as adult grey seals preying on harbour seals, grey seal pups and harbour porpoise. In contrast, some harbour seal populations in Scotland are suffering worrying decline. Recent data from the Greater Thames Estuary indicates that the harbour seal population is increasing in the region, and could be a vital stronghold for harbour seals in the UK.

Joanna Barker has worked in the Marine and Freshwater Conservation team here at ZSL for the last four years. During that time, she has led on a number of projects in the Thames, with a particular focus on conservation of marine mammals and estuarine fish, as well as engaging citizen scientists in conservation. In addition, she set up the Angel Shark Project with partners in the Canary Islands and Germany in 2014, with the overall aim to safeguard the future of Critically Endangered angel sharks in the Eastern Atlantic and Mediterranean Sea. Before ZSL, Joanna studied at the University of Oxford and University of York.

Chair: Richard Aylard, External Affairs and Sustainability Director, Thames Water

Richard Aylard has worked for Thames Water since 2002 and has been in his current role since 2006. In his previous career he served in the Royal Navy and as Private Secretary to HRH The Prince of Wales. A committed environmentalist, he has a degree in Applied Zoology and Mathematics and is a Fellow of WWF and an Honorary Fellow of the Chartered Institute of Water and Environmental Management.