

Title Slide	<p>Good afternoon and thank you for inviting me to join your conference about the issues of pollution in the Pinheiros.</p> <p>It is a privilege to be here and meet people who want to make a difference.</p>
1	<p>I am here today to share the experience, the successes and the challenges of engaging communities and Londoners in the programme to clean the Thames.</p> <p>I will start with setting the scene, to explain the basic geography and the place of the river Thames in London's history that lead to its needing cleaning. This map shows the catchment of the Thames Basin; From source to sea the Thames is 346 km long; comparatively the Tiete is 1,150 km; the Pinheiros runs 25km through this city.</p> <p>The Thames washes through the English countryside, which includes agricultural areas and many towns, before reaching the City of London (grey shading).</p> <p>On this route the Thames meets numerous negative impacts that affect the system as a whole. This can be through pollution from road run off, misconnected plumbing, sewage and litter.</p> <p>The next slide focusses on central London, as shown by the grey area.</p>
2	<p>Thames21 works in the central area that flows through the city and out to the North Sea. The City is in the centre of the map.</p> <p>The Thames flows west to east through this map and numerous tributaries join the Thames along the route.</p> <p>This area supports 8.7 million people: all of whom have a connection with the river Thames, and many do not realise how important it is to their lives. Eg water is abstracted for commercial and domestic use. And also agriculture has a huge impact.</p> <p>It is a tidal river with a range of 7 metres between high and low tide. This range and frequency is a factor in the pollution and accumulation of litter.</p>
3	<p>London has been inhabited since the year AD50 and the Thames has enabled the growth and expansion of the city.</p> <p>It has been a working river for centuries, bringing growth and development to the London conurbation. London has operated as an International Port for centuries, connecting industry from the city to the sea and with many countries over the ocean. The river has been central to the development of London.</p> <p>Yet being a working river brought pollution and it was not realised that the health of the river was important and relevant to London's prosperity. The river was a waste disposal system. The river was used as a sewer until 1866, when a revolutionary engineer, Joseph Bazalgette, designed a scheme that diverted raw sewage away from the river and into pumping stations outside the main urban area.</p> <p>This construction was preceded by 2 major events. This second event, The</p>

	<p>Great Stink, is documented because the smell of the river was so vile that government ministers were not able to meet in the Houses of Parliament, which is adjacent to the river.</p> <p>This started the government looking for a solution to deal with the sewage in the river.</p>
4	<p>The sewage system that was constructed (as shown here) is still operating today. Yet this structure was built to provide a service for only 2million people. London's population is now nearly 9 million. Storm sewage regularly overflows into the Thames.</p> <p>The solution to improve this situation will be through the construction of a super sewer underneath the Thames. The water and sewage company for London, Thames Water, is investing £3.6billion (4.6bn\$US or 20bn Brazilian Real) to tackle the 39million tonnes of storm sewage overflows that enter the tidal Thames in an average year.</p> <p>Tideway is the company who are managing the construction of this new Super Sewer underneath the Thames.</p> <p>The tunnel will be a 7.2m diameter interception and transfer tunnel running up to 65m below the river. It will intercept and collect sewage from thirty-four of the most polluting Combined Sewage Overflow discharge points along the River Thames.</p>
5	<p>Thames21 is an NGO and was established 20 years ago to reduce the litter and debris from the Thames and its tributaries.</p> <p>In the UK, nobody is responsible for removing the litter from rivers. People <i>can</i> be fined for littering. But, once it is in the river, nobody is responsible.</p> <p>So the first activity Thames21 was involved with, was a river clean in 1994. This came about as a few concerned Londoners came up with the idea of asking people to volunteer to help.</p> <p>People were appalled by the litter and pleased to be able to help.</p> <p>This enthusiasm continues today & now Thames21 has 28 paid staff; 1 Chief Executive; 4 Senior Managers; 23 project officers. The organisation has a Board of Trustees.</p>
6	<p>Our key areas of work have expanded from litter removal and we have 4 operational teams:</p> <ol style="list-style-type: none"> 1. The River Improvements team: install sustainable urban drainage schemes, monitor water quality, and contribute to designing and installing wetland areas. 2. The Volunteer team: recruit volunteers and encourage residents to get involved in community groups; and organise many events for volunteers to help in the river. Marketing and communicating are key to the success of this team; 3. The Education & Training team: run an Education Centre where 1000's of children visit as part of their school curriculum; This team also run a range of training courses so that Londoners have the skills to look after their local area.

	The 4 th team is Campaigning & Advocacy : I will talk more of this later.
7	<p>When Thames21 started cleaning up the Thames there was a lot of heavy waste left over from when the river banks were industrialised. Thames21 was very successful in clearing up this type of rubbish, with thousands of volunteers helping every year. Now when you look at the Thames when the tide is out, the river beach is much cleaner than you'd expect even though the well-known issue now is pollution from plastic.</p> <p>In recent years we have noticed a rise in certain types of plastics such as single use drink bottles. It was clear that litter was entering the river quicker than we could possibly remove it. So we needed to stop it getting there in the first place; but we didn't have any hard data on what types of litter were in the river.</p> <p>This wasn't the only problem. The health of the tidal Thames is widely misunderstood – many people see a brown and dirty river, even though this is natural and the Thames was brown before the Romans arrived.</p> <p>This lack of awareness is a problem because the river faces serious threats in the 21st Century, it really needs citizens to campaign on its behalf.</p>
8	<p>Thames River Watch is our solution to these problems. It is a Citizen Science project, which engages local people directly in the collection of information AND is developing a new set of data set on the health of the tidal Thames. This data will enable greater understanding of the issues the river faces, and what needs to be done to improve its health.</p> <p>All volunteers are trained by Thames21 in monitoring methods. The data is stored on a digital mapping system.</p> <p>Volunteers can see the information they are helping to collect and they are able to watch it grow and develop. The plan is to make the data available to anyone so the project will reach wider than the volunteers involved.</p> <p>This citizen science programme involves individuals, community groups, and local businesses.</p> <p>In summary, the Thames River Watch programme has 2 areas of focus: We want to improve <u>our</u> understanding of the health of the river - (<i>via litter monitoring</i>) And improve <u>Londoners'</u> understanding of the river - (<i>tested by public perception surveys</i>)</p>
9	<p>This infogram shows one of the sets of data. The plastic bottles were graded and counted before being removed from the Thames beach.</p> <p>The data is produced in a report and will be available on our website in January.</p>
10	<p>Thames21 offers a variety of opportunities to volunteer. It's not just about picking up the gargabe.</p> <p>Even though litter continues to be an issue on the Thames, there are many</p>

	<p>other opportunities for volunteers to assist rivers in London. There are events for local people to gain experience and skills in using hand-held conservation tools, citizen science methods, carrying out ecological surveys and learning about non-native plant management.</p> <p>Some examples include</p> <p>Installing floating habitats to green the grey</p> <p>Restoring sections of rivers to enhance a river corridor.</p> <p>Natural Flood Management which involves installing mitigation techniques such as woody debris that will reduce the risk of flooding to communities. The structures are designed to slow high flows and store large volumes of water.</p> <p>And designing and managing wetland areas to improve water quality in the rivers.</p>
11	<p>From the very beginning it was a concern that people would not get involved and want to help.</p> <p>Yet the river has continued to attract willing volunteers.</p>
12	<p>Year after year, thousands of individuals are working with Thames21. Here you can see one of the methods that we use.</p> <p>When the tide is high the Port of London Authority leave these yellow cages on the river bed. So at Low tide volunteers can fill them with the collected rubbish. Then the Port of London Authority pick up the cage on the next high tide. They sort and recycle the rubbish.</p>
13	<p>How do we find all these volunteers?</p> <p>The calendar of events on the Thames21 website is regularly updated;</p> <p>Posters are displayed about 2 weeks prior to where the event will be; these are also left in libraries and in community buildings. This is one of the most successful methods;</p> <p>We produce E-news which is emailed to our volunteers;</p> <p>And Londoners are keen users of social media: We have 14,400 followers on Twitter, Facebook & Instagram.</p> <p>We communicate with local and regional newspapers, radio stations and TV channels, who like to promote details of events beforehand and tell the stories afterwards;</p> <p>We also create innovative events and campaigns:</p> <p>We link with national and international campaigns such as <i>World Water Day</i> in March and <i>World Rivers Day</i> in September.</p>
14	<p>The volunteer experience is important to us at Thames21. But to retain our volunteers and keep them enthused, the task needs to be meaningful.</p> <p>Clearing rubbish, from rivers is a physical activity and the sites can be challenging, with mud and heavy objects. Although a bit of hard work can be very satisfying, it is rewarding to see the visual effect at the end; the difference is immediate and obvious.</p> <p>When we promote an event, we include information about the site, the</p>

	<p>meeting point, the date and how long the activity will last. We warn people to wear clothes that might get muddy! We also invite our volunteers to celebrations in a local bar so we can thank them and enjoy time away from the river together! We have Annual Celebrations to celebrate achievements and thank those who give their time.</p>
15	<p>Thames21 provides equipment at all events. This makes the event easier for volunteers to attend. Photos refer to: wellington boots,litterpickers and gloves.</p> <p>We also instruct volunteers in health and safety; so that we stay safe with the strange environment of the river bed. And provide soap and water to wash hands and anti-bacterial gel to remove germs.</p>
16	<p>All in all, the experience is enjoyable and satisfying. As shown by these statements from Thames21 volunteers.</p>
17	<p>In addition to the work of volunteers: an effective solution was installed by the Port of London Authority in the early 1990's: They invested in floating Passive Debris Collector equipment. As seen here on this slide. There are 12 of these in the Thames collecting floating rubbish. They are strategically situated in the Thames to catch the litter on the passing tide. The Port of London Authority maintain and manage these as part of the Cleaner Thames campaign</p>
18	<p>Thames21 is proud to share that over time impressive results can be achieved. The photos here show an area of the Thames from the year 2000 and in 2016. The top photo shows a Thames beach littered with plastic bags, then the same area,16 years later. Achieved because of the work of volunteers. In fact, this area has not become littered in the same way since as in 2016 the UK government introduced a 5p charge for plastic bags.</p> <p>Through many events over many years, we have been able to clear vast amounts of debris in a way that would impossible for contractors to achieve.</p>
19	<p>An important step for Thames21 is to encourage, support and train residents and communities to do the work themselves. Thames21 can arrange event after event on rivers all over London, but that is not sustainable. It is really important that a community take ownership of their local waterway. We have established sustainable relationships between communities and rivers throughout the London region. We run a training course 'Leading A Waterway Clean-Up'. It is designed for volunteers to learn how to arrange river cleans, safe ways of running events, and to build the confidence and skills in Londoners so they will continue to look after their river.</p>

	<p>The dots on this map of London, represent where a group of people have come together. They have been trained by Thames21 and meet regularly to look after their waterway.</p> <p>The training instructs residents in how to run their own river cleans, how to prepare and organise themselves safely and effectively.</p> <p>The training is accredited, which means that participants receive a certificate.</p> <p>Once volunteers are trained, they are stimulated to promote their activity locally and encourage more people to get involved.</p> <p>This helps Thames21 to have a wide impact, as Thames21 staff can then focus on other parts of the river and other activities.</p> <p>Another advantage to the trained group is that will be covered by our insurance policy. Which all the local authorities support!</p>
20	<p>On the Thames, we are establishing community hubs that have 8 to 10 dedicated people involved. These groups of volunteers monitor and record the litter an area of the Thames.</p> <p>We are collecting details about brands and which kinds of bottle are most commonly found in the river.</p>
21	<p>The success of Thames21 and the ability to make changes happen is reliant on working with partners & Thames21 works with many across the region.</p> <p>Politically we work with the Environment Agency which is a Government Agency; The Greater London Authority with London's Mayor and his team; and with riparian borough authorities.</p> <p>Key Funders and Stakeholders for Thames21 include the PLA; Tideway; Thames Water</p> <p>Non government partners include: ZSL; Keep Britain Tidy group; The Rivers Trust network; the Thames Estuary Partnership;</p> <p>and teams and teams of corporate employees who work with Thames21 to meet the Corporate Social Responsibility targets of their company.</p> <p>We also work with recreational organisations such as canoeing and stand-up paddle-boarders which is growing in popularity on the river.</p> <p>Recently the Thames Litter Forum was established to meet the growing interest in plastic in rivers. This Forum is beneficial as it brings like-minded people together and focusses action so that work is not replicated.</p> <p>Thames21's work includes working with academic scientists and university's, who can help to develop effective methodologies and give more depth to the issues facing our rivers.</p>
22	<p>Thames21 is a keen supporter and contributor to campaigns that promote changes in people's behaviour.</p> <p>We were part of the coalition to bring in the 5p charge on plastic bags. There is now an 80% decrease in the demand for single use plastic bags and this has in part resulted in a visual decrease in bags in the river.</p>

	<p>We run an annual campaign, London Rivers Week, this is in partnership with many other Environmental organisations in London. It is a week long campaign to celebrate the rivers across London and brings awareness to the issues affecting the rivers. This is achieved through arranging events so that people can discover and enjoy their local river.</p> <p>A recent success is the In The Drink campaign. This developed from the data that our volunteers collected on the number of single use cups found in the river. Using this evidence Thames21 contacted the 160 bars and party boats along the tidal river and have asked what they currently do to reduce their plastic waste. We have offered a solution to the problem by suggesting alternatives and providing the costs so bar managers know how much they need to invest to make a change.</p> <p>The #oneless campaign has developed using the data about the plastic bottles that Thames21 volunteers have removed from the river. The campaign is to encourage people to use “one less” plastic bottle and to always carry their own refillable water bottle.</p>
23	<p>We often get asked how much wildlife is there in the Thames, as the water is brown, people think the water is polluted. But we have 125 species of fish and seals are frequently seen joining the stand-up paddle boarders.</p> <p>This is a Common Seal <i>Phocavitulina</i></p>

24	<p>To summarise, here is a timeline of our journey since 1994 which started with a tentative call out for volunteers.</p> <p>In summary, it is important to state that the volunteers who we work with are much more than just the workforce; they are not just labour.</p> <p>Involving people in the process means that people are more likely to value their place and also understand what needs to change, therefore involvement will influence personal behaviours and habits.</p> <p>The data that volunteers collect has led to influencing the policy in London government. The Environment Manager was influenced by the quantity of plastic bottles we remove, there are now more taps to refill your own bottle across London.</p> <p>It is also documented how being part of activities, especially in groups has a positive effect on mental health and well-being.</p> <p>These add an immeasurable sense of achievement to each activity.</p>
25	<p>To conclude, this statement written by an American physician in the 1800's sums up what we need to remind ourselves.</p> <p>A river is more than an amenity, it is a treasure.</p> <p>And to remind ourselves that rivers are the arteries to our cities.</p>
26	<p>Thank you for listening.</p>