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Coastal Waters

Water systems are a key area of focus with regards to climate change, because of both our reliance on them and the changes we've seen in recent decades. This evening, we heard from three expert speakers about issues relating to our coastal waters and river systems. Matthew Parr, Director of Strategy and Regulation at Tideway, discussed the Tideway project which is crucial to London's sewage system. Dr Helen Findlay, Biological Oceanographer at Plymouth Marine Laboratory, spoke about ocean acidification and the impact this has on coastal regions. Lastly, Dr Richard Thompson OBE, Professor of Marine Biology and Director of the Marine Institute at the University of Plymouth, discussed the impact of microplastics on our water systems and the best ways to mitigate against this. Our Q&A session at the end of the talk largely revolved around ways to reduce our impact on water systems and how we can push to make the necessary changes.

Our major cities are heavily reliant on water systems, and this may be no clearer than when one looks at the Tideway project. Mr Parr pointed out that London's current sewage system was established when London's population was around two million. Now with a population of around ten million it only takes two millilitres of rains to result in sewage discharge into the river Thames, polluting the water system. The Tideway project aims to prevent this through the construction of a deep shaft system such that when heavy rainfall occurs the sewage is drained away, reducing the strain on the river system. Mr Parr discussed how this was vital to keep the river system healthy, and how the whole project had reducing environmental impact as a key aim. After years of work, 78% of the construction is complete and it's expected to be operational by 2025.

It's not just water systems in our cities that we're having an impact on. Ocean acidification is a major

problem caused by our carbon emissions. Dr Findlay described how oceans have become 43% more acidic since the industrial revolution. This has an impact on marine ecology as it erodes calcium carbonate structures, such as shells. This leads to economic impacts in our coastal regions as the resources we can retrieve from the ocean are diminished. More work is being done on the exact impact on coastal regions, but studies indicate that acidification rates are faster near coastal regions than in the mid-ocean. Dr Findlay described how reducing emissions and investing in carbon removal technologies are key in slowing this process. Assessing vulnerable regions in order to know where is most at risk from this acidification trend will also help mitigate against the adverse effects.

Plastic pollution also has a major impact on ocean waters. Dr Thompson discussed how there is proof that microplastics are having a direct impact on human and ecosystem health. Dr Thompson outlined that a solution to such a problem needs to be holistic. Microplastics are only one source of plastic pollution and our attitude towards plastic hasn't changed substantially in decades. Plastic is a vital resource in minimising food waste and reducing our impact on the environment in some areas, and all of this needs to be taken into account for good policy. Dr Thompson outlined in some cases banning is appropriate, like with cosmetic microbeads where a single container had three million plastic particles. However, in other cases a push to reduce use or recycle a product through education and incentive would be more effective. Such policies will be vital if we wish to keep our coastal systems healthy.

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