PRESS RELEASE

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INDUSTRIAL AGE CANALS REINVENTED TO TACKLE 21ST CENTURY CLIMATE CHANGE CRISIS

Research proves it is 'cool' to be by canals in the UK's overheating towns and cities

As global attention focuses on climate change at the UK's COP26 conference in November, the Canal & River Trust charity is highlighting how the nation's 200-year-old canals offer huge 'blue' opportunities to help Britain tackle the climate change crisis.

Following dereliction and decline in the 20th century, today's canals are enjoying a second golden age to help drive the 'Green Industrial Revolution'.

The modern-day benefits of historic canals include heat transfer technology, which enables canal water to heat and cool more than a quarter of a million UK homes and businesses, flood mitigation by providing extra urban drainage, and more electricity generated through hydro generators. The widespread network of canals is also able to move water from areas of plenty to areas of drought, provides off-road towpaths perfectly placed for sustainable transport, and connects otherwise fragmented wildlife habitat to address biodiversity loss. And moving freight on larger commercial waterways remains a green alternative, removing hundreds of articulated lorry journeys from the roads.

Research published today by the Canal & River Trust and University of Manchester shows the presence of canal water in urban areas can also cool Britain's overheating cities during heatwaves by up to 1.6 degrees Celsius in a 100-metre-wide corridor along the waterway.

Richard Parry, chief executive at Canal & River Trust, said: "Our network of canals and river navigations flowing through the hearts of Britain's towns and cities are perfectly placed to tackle the challenges wrought by climate change, offering opportunities to provide 'net zero' solutions and climate change mitigation.

"With the right investment, our waterways will play an important role in meeting the aspirations of COP26. They can cool cities in summer, heat homes in winter, provide low-carbon energy,

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transfer water to where it's needed and take it away from places where it's not, and provide a network to move goods and materials, connect important wildlife habitat and offer sustainable transport. The canals are ready to be the arteries of the new Green Industrial Revolution."

The University of Manchester research creates a new model which shows the extent to which urban waterways cool cities, where the 'urban heat island' effect plus a warming climate threatens to make summers intolerable. The research conducted across Birmingham, London and Manchester shows reductions in summer temperatures of up to 1.6 degrees Celsius, without undesirable cooling in winter, and demonstrates the importance of choosing the right type, height, scale and location of waterside buildings to maximise the benefits.

Richard continued: "This research proves the important role waterways play in reducing temperatures where and when it's needed most. This valuable knowledge should be used to inform urban planning and design and, combined with a full package of waterway benefits, can make a significant 'blue' contribution towards mitigating the damaging effects of climate change. We ask central government, local authorities, planners and developers to work with us to help make a real difference."

Dr Joanne Tippett, from University of Manchester, said: "The canals in our cities were a product of the Industrial Revolution, a time of great innovation. Adapting to climate change will require new thinking and ways of working, and this research shows the importance of working across disciplines and in partnership. Bringing together our industrial heritage with new technologies and cutting-edge research like this can help us create urban areas where people *and* nature thrive in a more sustainable future."

The Trust is working with partners on a range of projects that support the Government's decarbonisation agenda and tackling the physical effects of climate change.

Heating and cooling. Water-sourced heat pumps have the potential in the UK to heat and cool a quarter of a million waterside homes, as well as other commercial buildings, saving well over a million tonnes per year of CO^2 entering the atmosphere compared to more traditional energy sources. The technology is helping to heat and cool buildings at large commercial sites such as GlaxoSmithKline's canal-side headquarters in London, the Hepworth Wakefield art gallery, the Mailbox shopping and media centre in Birmingham, York's Guildhall, and Dollar Bay and Baltimore Tower in London's Docklands. The Trust is also involved in big infrastructure projects like Nottingham's District Heating Network where waterways are used to cool the generation plant.

Low-carbon energy. The Trust's waterways support hydro schemes generating around 21MWh per year, the equivalent energy for around 10,000 homes, with the potential to create a further 17MWh of hydro power for adjacent buildings and developments, particularly those located near weirs and locks.

Low carbon transport. In order to reach net zero emissions by 2050, the UK urgently needs to improve the country's active travel infrastructure to promote walking and cycling. The Trust has worked with many local councils and developers in recent years to lay all-weather surfaces on towpaths to provide off-road routes for sustainable transport into our towns and cities, with year-round access also encouraging people to stay local and discover the waterside destinations on their doorstep. In addition, thousands of tonnes of freight are moved every year on the Trust's canals and rivers, where lower carbon emissions make them a green alternative that removes hundreds of articulated lorry journeys from the roads.

Water supply and land drainage. Three of the UK's five wettest winters on record have occurred in the past eight years, causing flood damage as intense storms follow in close succession. The Trust's waterways accept over 2,500 drainage discharges, relieving the strain on overflowing urban surface water systems. The network offers the opportunity for new sustainable urban drainage schemes to connect to the Trust's waterways to remove surplus surface water. Conversely, increased temperatures, due to climate change, will exacerbate summer water stress in coming years. The Trust's waterways can play an important role in transferring water across England and Wales, from areas with a surplus of water, to those with higher levels of water stress such as London and the south.

Nature recovery. Many waterside habitats have become fragmented or have vanished from the countryside entirely, making canals especially valuable habitats and much-needed corridors for wildlife. For some species, the Trust's waterways are among their last remaining strongholds, and, for many others, they provide vital resources now scarce in the wider countryside. Canals and rivers are helping to slow the loss of wildlife in the UK, helping to connect isolated natural habitats, so wildlife can spread, recover, and thrive again.

For the Trust, keeping the aging waterways fit for purpose is a constant challenge. This winter it is carrying out 168 large-scale works, across 48 different waterways, replacing lock gates, repairing masonry and brickwork, fixing leaks, updating and installing hydraulics and electrics at mechanised structures, as well as ongoing works to ensure resilience at several canal-feeding reservoirs.

For more information on the role the waterways play in combatting climate change, including a video about the urban cooling research, please visit the Trust's website.

To read the University of Manchester's research report, please click here.

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Notes to Editors

The Canal & River Trust cares for and brings to life 2,000 miles of canals and river navigations across England & Wales. We believe waterways have the power to make a difference to people's lives and that spending time by water can make us all healthier and happier. By bringing communities together to make a difference to their local waterway, we are creating places and spaces that can be used and enjoyed by everyone, every day.
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