

# Creating Urban Wetlands for Wellbeing

A Route Map





**We know that a blue environment can be as good or even better for you than a green one: living near or visiting the coast, rivers and lakes increases people's reported levels of mental health and wellbeing.**

Sir James Bevan  
*Chief Executive, Environment Agency, September 2020*

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**Incredible things happen when land and water meet to create wetlands. Wetlands teem with biodiversity, providing homes for endangered and much-loved species. Wetlands are vital 'service stations' for millions of migratory birds, enabling them to rest and refuel, and for us, they provide essential protection against the impacts of the climate crisis, floods, droughts and pollution.**

**We know that living near to or visiting a wetland and its wildlife is good for our wellbeing, helping us regain a sense of peace and find a place in which to recuperate and escape life's daily stresses. Wetlands are the lifeblood of the planet, but they need our help – they are disappearing at a rate three times faster than forests.**

The UK's wetlands need strong and effective laws to protect them from harm; they need careful and well-resourced approaches to manage them – and they also need restoring. Over the last 500 years England has lost approximately 90% of its wetlands, and in more recent times their continuing absence – coupled with further loss and degradation – has helped to fuel some of the greatest challenges we face: the escalating climate crisis, plummeting levels of biodiversity and a rapid decline in our own wellbeing.

But there's hope: WWT are pioneers in wetland conservation. We use groundbreaking science to bring species and wetlands back from the brink and restore, protect and create wetlands around the world. In 2020, WWT joined calls for a green recovery to build back better out of the COVID-19 pandemic, and crucially for a 'blue recovery' to be at its heart.

We set out proposals for the creation and restoration of 100,000 ha of wetland – every single hectare restored will be filled with wildlife, providing a much-needed boost to biodiversity and to the Government's pledge to halt and reverse the decline of our natural world by 2030.

Two years on, we are setting out further details on how this blue recovery needs to happen, publishing four route maps to creating wetlands for carbon storage, flood protection, urban wellbeing and improved water quality. Each route map sets out the proposal, the purpose the wetlands will serve, the potential they offer, and the partnerships and policy framework required to make them happen.

I hope you enjoy reading our route maps; we look forward to working with you to create and restore wetlands that help improve the wellbeing of our nation.



*Sarah Fowler, Chief Executive  
WWT (Wildfowl and Wetlands Trust)*



Just ten minutes in urban wetlands may be enough to produce improvements in mood<sup>1</sup>.

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# Executive summary

**84% of people in the UK live in urban areas, often without adequate access to nature. Creating wildlife-rich urban wetlands for wellbeing means protecting existing wetlands and creating and restoring wetlands targeted at meeting the particular challenges of urban spaces, providing multiple benefits to people in urban areas.**

This includes mini-wetlands at the individual property level, sustainable drainage systems (SuDS) and small ponds at the street level, restored streams and wildlife ponds at the neighbourhood level, and urban parks centred on lakes, streams and ponds to provide natural space for whole cities and towns.

A wide range of actions and activities, such as nature-prescribing initiatives, community classes and citizen science would connect people to this physical infrastructure so that all are able to benefit, even those normally disconnected from natural spaces.

Creating these locally connected wetlands across the country, and protecting and managing existing urban wetlands for nature, would deliver an incredible range of benefits and help restore our wellbeing.

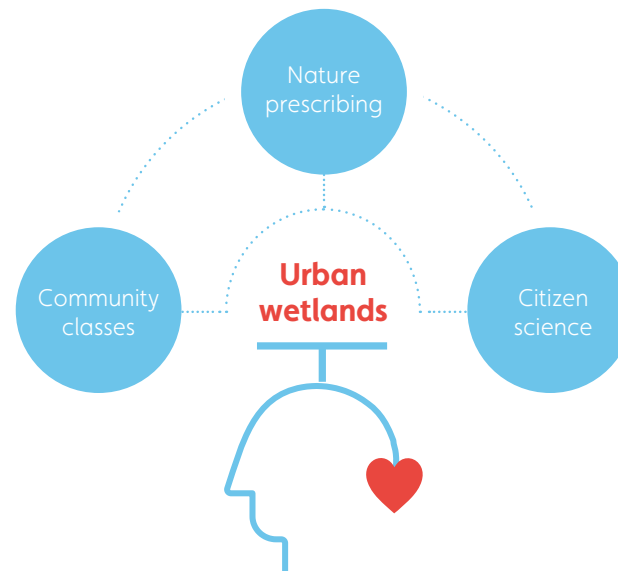
**SuDS in all new developments would deliver £3bn in avoided flood damages<sup>2</sup>.**

## Benefits of urban wetlands:

- **Improve** our mental and physical health.
- **Increase** our resilience to the impacts of climate change.
- **Connect** us with others and the natural world. People are more likely to socialise in blue spaces<sup>3</sup>.

## Opportunities for creating urban wetlands for wellbeing:

- Currently, one in three people don't have access to nature within a 15-minute walk, and lack of access is concentrated in more deprived areas<sup>4</sup>. Therefore, the greatest potential to deliver benefits from new wetlands is in places where people lack access to green and blue space and in deprived areas.
- Areas at risk of flooding and places with a historical connection to wetlands or those that have existing but degraded wetlands would also greatly benefit from urban wetland restoration.
- Specific types of site – including degraded brownfield sites, government estates, places where streets are already being worked on and new developments – offer specific opportunities to start creating more urban wetlands now.



LIVING WALLS HELP COOL, INSULATE, REDUCE NOISE, TRAP POLLUTION AND PROVIDE HABITAT

GREEN ROOFS ATTENUATE AND FILTER RAINFALL

TREES ABSORB RUN-OFF, CLEAN THE AIR AND PROVIDE HABITAT FOR WILDLIFE

URBAN WETLANDS ARE GREAT FOR INSECT-LOVING BIRDS AND BATS

WILDFLOWER-RICH TURF

BRIDGES, TRAILS AND CYCLEWAYS INCREASE PUBLIC ENJOYMENT

GRASSY DEPRESSIONS AND CHANNELS SLOW AND FILTER RUN-OFF

HARD, IMPERMEABLE SURFACES – ROOFS, ROADS AND PAVED AREAS – INCREASE FLOOD RISK

DAMP AREA

REEDBEDS HELP CLEAN WATER

OPEN ACCESS

POND ACTS AS A WATER-RETENTION BASIN AND WILDLIFE HABITAT

LONG GRASS SLOWS FLOW OF WATER RUN-OFF FROM THE ROAD

BADLY DESIGNED PONDS ARE SURROUNDED BY CONCRETE

BIORETENTION AREAS FILTER POLLUTED ROAD RUN-OFF, REDUCE FLOODING AND NOISE, AND PROVIDE HABITAT FOR WILDLIFE

RAIN GARDENS COLLECT ROOF WATER AND PROTECT THE SEWER NETWORK

WATER COLLECTS IN BUTTS AND HELPS WATER PLANTERS

DOWNPIPES CHANNEL RAIN INTO PONDS

PERMEABLE SURFACES SUCH AS BLOCK PAVERS ALLOW WATER TO DRAIN NATURALLY INTO THE GROUND

PIPES FEED CLEAN WATER FROM UNDER PERMEABLE PAVING INTO PONDS TO SUSTAIN THEM ALL YEAR

BADLY DESIGNED GUTTERS DRAIN INTO THE STREET, WITH NOTHING TO ABSORB OR SLOW THE FLOW



**1 in 3  
people**

don't have access to nature  
within a 15-minute walk<sup>4</sup>.

## **Our immediate priorities for creating urban wetlands for wellbeing.**

### **Delivery**

Urban wetlands need to be created and restored at multiple scales to demonstrate and measure benefits. Public health programmes focused on access to blue space need to be expanded.

### **Capacity building**

To accelerate urban wetland creation we will need to build the capacity of stakeholders to create wetlands for themselves. This will include providing advice and training to community members, local councils and developers, and improving the evidence on how to derive benefits from urban wetlands.

### **Community engagement**

Finally, community engagement to co-create projects at all stages will be crucial to the creation of urban wetlands for wellbeing that sit at the heart of community life.

### **Protection and management**

This document focuses on creating and restoring urban wetlands but protecting and managing existing wildlife-rich urban wetlands will also be crucial to delivering wellbeing benefits.





### **Public and private funding will be required to create urban wetlands for wellbeing.**

There is a wide range of potential sources, including:

- **Government funds** directed towards restoring nature, the Levelling Up policy, climate resilience and mental health.
- **Private funding** from biodiversity net gain, developer contributions and meeting SuDS requirements for new developments.
- **Water company investment** in the environment.

### **No stakeholder will be able create urban wetlands for wellbeing alone, so partnerships will be crucial.**

The skills and expertise of government, business and civil society will all be needed to deliver urban wetlands for wellbeing.

Expertise will also need to be shared between these stakeholders and from academic research to increase stakeholders' capacity to create wetlands that provide multiple benefits.

All stakeholders will need to partner with civil society and community groups to learn from their local knowledge.



**Finally, creating urban wetlands for wellbeing at scale will require supportive policies.**

This means having the information, plans and funding in place to allow stakeholders to create and restore urban wetlands.

**Priority policies include:**

- Green infrastructure standards that tell stakeholders how to create high-quality, multi-benefit urban wetlands;
- A requirement to include natural SuDS in all new developments;
- A biodiversity net gain system that leads to the replacement of degraded wetlands with higher quality wetlands in places where people live and work.

**By working together, governments, businesses, civil society and communities across the country can help to create urban wetlands that will transform our wellbeing.**

# 1.

## Proposal

We propose the creation of new and restored urban wetlands as well as the protection of existing ones, and the expansion of access to these wetlands through community engagement.





## What are wetlands?

**Wetlands are unique ecosystems that are either permanently or seasonally inundated with water.**

They include lakes, rivers, swamps and marshes, wet grasslands, estuaries, saltmarshes and human-made sites such as ponds and reservoirs. They range in size from garden ponds to the Pantanal in Brazil, Bolivia and Paraguay, which is three times the size of Ireland.

Many urban areas were built around wetlands due to the resources they provide, especially coasts and rivers, meaning wetlands are often prominent features of the urban landscape.

Smaller-scale wetlands can also be found woven through cities. They include urban streams and canals, ponds and lakes in urban parks, rain gardens and swales, and even ponds in private gardens. Wetlands, therefore, often make up an important part of the character of urban areas.

## What do wetlands do?

**Wetlands hold much of our natural capital – the stocks of natural assets that underpin our economy.**

They also provide essential ecosystem services that make life on earth possible, providing nature-based solutions to some of our most pressing social problems.

They give us relief from the stresses of urban life and improve the resilience of urban communities to the pressures of the climate crisis, pollution and the effects of urbanisation.

This document sets out how we can realise these benefits.

### **Natural capital**

The stocks of natural assets that underpin our economy.



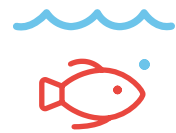
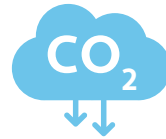
# How do wetlands help us?

They provide freshwater for drinking, cooking and cleaning.



They support livelihoods.

They help combat climate change by storing enormous amounts of carbon.



They provide food and act as nurseries for many commercial fish species.



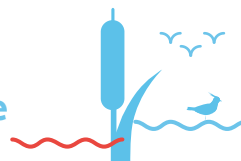
They protect us from flooding.



They are the most biodiverse habitat on earth, providing a home for over 100,000 species of animal<sup>5</sup>.

They prevent coastal erosion.

They treat our polluted water without the use of chemicals.





**Urban wetlands boost our  
mental and physical health  
and cool down our cities.**

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## What do we mean by wellbeing?

**Wellbeing doesn't just mean being free from mental or physical illness. It also means having all the support necessary to have a good quality of life and to thrive.**

### **Factors required to support a good quality of life:**

- A sense of belonging and social inclusion.
- A sense of connection to the world around us.
- The economic means to meet our needs and aspirations (financial wellbeing).
- The ability to go about our daily lives with ease.

Our external environment can contribute to this by helping us to be physically and mentally well, connecting us with others and the world around us, and by making our neighbourhood more 'liveable'.

**Our mental and physical health, our quality of life and the liveability of our communities all contribute to our overall wellbeing.**

### **What is 'liveability'?**

This describes measures that are in place to make our daily lives easier, safer and more enjoyable, such as those that make active travel more accessible or that reduce the risk of flooding during heavy rain.





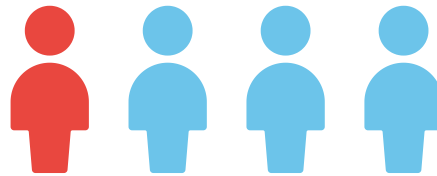
## What challenges do we face to our wellbeing?

**In the UK, we've lost 90 per cent of our wetlands in the last 100 years. Over ten per cent of our freshwater and wetland species are at risk of going extinct and two thirds of existing species are in decline<sup>10</sup>.**

Urbanisation in particular often brings the destruction of wetland habitats and the wildlife they support. Wetlands are frequently filled in or covered up, meaning urban areas become particularly nature deprived, affecting biodiversity, and people's ability to connect with nature.

This has been shown to affect mental wellbeing, as access to nature-rich spaces is highly beneficial to our health<sup>11</sup>. This is concerning because 84% of people in the UK live in urban areas, making those places essential places to bringing back nature and addressing the challenges below<sup>12</sup>. Urban areas also present particular challenges for nature creation and restoration due to their density, and so require specific solutions. This is why we have focused here on wetlands for urban wellbeing.

**Poor mental health is now a major public health challenge.** The challenges to our wellbeing extend well beyond mental illness. Even those who do not suffer from mental illness can experience poor mental wellbeing that affects their quality of life and happiness. In fact, subjective wellbeing in the UK is lower than in many other high-income countries, including the Nordic countries, the Netherlands and Ireland<sup>13</sup>.



**1 in 4 people in England experience poor mental health each year<sup>8</sup>.**



**Poor mental health accounts for 40% of GP appointments<sup>7</sup>.**

**It costs the NHS over £34bn a year, with the wider economic, social and health costs amounting to £105bn a year<sup>9</sup>.**

**Poor physical health is a major challenge to our wellbeing** and is closely connected to physical inactivity. Greater physical activity can help manage and prevent more than 20 chronic conditions and diseases and could save the UK an estimated £7.4bn a year, including an NHS saving of £0.9 billion<sup>14</sup>.

**Urban areas often have heavily polluted air and water.** Polluted air can affect physical health and causes between 28,000 and 36,000 deaths a year in the UK<sup>15</sup>. Meanwhile, polluted water is less likely to be used for recreational purposes, both out of the water because people find it less pleasant to spend time nearby, and in the water due to the health problems it can cause<sup>16</sup>.

**The effects of the climate crisis will also impair our quality of life** if we do not create resilient urban neighbourhoods.

If temperatures increase by 2°C, the number of properties at significant risk of surface water flooding will increase by 59% by 2050<sup>17</sup>.

Flooding has the potential to significantly impact people's mental health, and their financial wellbeing, and cause disruption<sup>18</sup>.

More frequent heatwaves will cause increased deaths from excess heat and make cities less liveable.

# What would restoring wellbeing with urban wetlands look like?

Improving wellbeing through urban wetlands would consist of two essential elements:

- Protecting, restoring and creating wildlife-rich urban wetlands.
- Improving access to and community engagement with these wetlands.

The urban wetlands created and restored would include:

**Wetlands at the city/town level**, such as new or restored urban parks centred on lakes, streams and ponds. These would create new spaces for recreation, relaxation and active travel.

**Wetlands at the neighbourhood level**, such as restored streams and wildlife ponds that restore networks of wetlands, integrating restorative blue spaces into communities.

**Mini-wetlands at the individual property level**, such as garden ponds and drainpipe wetlands, to create wellbeing benefits in people's homes.

**Wetlands at the street or development level**, including SuDS such as rain gardens, swales and small ponds, which can provide the wellbeing benefits of wetlands where people live and work.



## Improving access to and community engagement with urban wetlands.

We must create opportunities for people to interact with wetlands where they may not have done so previously, and opportunities to overcome the social and psychological barriers they face in accessing them.

These would include:

**Co-designing, co-creating and co-managing wetland creation** with host communities and community groups to ensure sensitivity to community needs and local connection to interventions.

**School and community outreach programmes and community activities** (such as walking groups and art classes) that connect groups to wetlands who otherwise would not access them.

**Upskilling and informing local groups** so that we embed new practices and activities that encourage ongoing engagement with wetlands.

**Nature-prescribing initiatives** to maximise benefits to those suffering from mental and physical ill health.

**Citizen science and conservation volunteering programmes** to allow people to reconnect with nature.





### **Nature prescribing**

Nature prescribing is a type of social prescribing where people engage in activities to improve their mental health in natural spaces such as wetlands.



## WWT's Blue Prescribing

This project is WWT's nature-prescribing wetland health programme, which is specifically designed, in consultation with participants, to promote a range of mental and physical health benefits through facilitated wetland nature engagement<sup>19</sup>.



## 2.

### Purpose

Urban wetlands provide multiple benefits to our wellbeing while boosting biodiversity in nature-deprived urban spaces.



# How can urban wetlands improve our wellbeing?

**Wetlands are unique habitats because individual wetland sites can provide multiple, stackable benefits that improve many aspects of our wellbeing.**

**Wetlands improve our mental wellbeing** and combat mental illness. They do this by providing tranquil spaces in which to escape from the everyday stresses of urban life; they are a world away from our daily worries<sup>20</sup>.



**Wetlands provide areas for recreation and physical activity** both on and off the water, including wild swimming, water sports, walking, running and cycling, so improving physical and mental wellbeing.



**Wetlands improve our air and water quality**, especially if urban wetlands are designed to be rich in vegetation that soaks up pollution from the air and water run-off. This directly impacts physical health as well as providing more opportunities for water-based recreation.



**Wetlands provide opportunities for active travel**, especially along linear wetlands, such as rivers and canals, reducing travel costs and encouraging physical activity that aids physical and mental wellbeing.



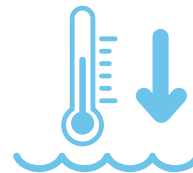




**Wetlands protect us from surface water flooding due to high rainfall**, which will become more common due to climate breakdown. Wetlands do this by soaking up excess rainfall and slowing the flow of water, thereby reducing surges in water levels<sup>21</sup>. In turn, reducing flood risk reduces the likelihood of flooding having negative effects on mental health and wellbeing, and financial wellbeing<sup>22</sup>.



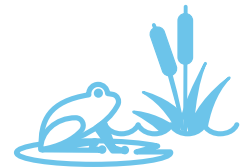
**Wetlands provide air temperature cooling**, thereby mitigating heat waves and urban heat-island effects, which will be worsened by the climate crisis<sup>23</sup>. This improves wellbeing by making summers more enjoyable and safer for the vulnerable.



**By providing opportunities for socialising**, thereby increasing community cohesion and reducing loneliness.



**By enhancing biodiversity through providing habitats for wildlife**, allowing people to reconnect to the natural world. For example, constructed wetlands can support increased populations of amphibians, invertebrates and birds<sup>24</sup>. In turn, more biodiverse natural spaces are associated with greater impacts on human wellbeing, showing that urban wetlands must be wildlife rich to reap the benefits for people<sup>25</sup>.



## The unique benefits of wetlands.

Many of these benefits are unique to wetlands or the blue space that can be found in them.

The evidence demonstrates that:

**Blue space** is particularly effective in reducing stress compared to green space<sup>26</sup>, and that physical activity, such as walking, in blue spaces is better at restoring mental wellbeing than physical activity in green spaces<sup>27</sup>.



**People are more likely to socialise in blue spaces** compared with green spaces, allowing them to build social connections and a support network<sup>28</sup>.

**SuDS are usually no more expensive to install and maintain than traditional drainage systems** and don't usually take up much land. In addition, they reduce flood risk and create blue and green space that improves wellbeing, meaning the benefits of SuDS far outweigh the costs<sup>29</sup>.

**Urban wetlands provide a habitat for unique wildlife** and provide an opportunity to reconnect with nature, which has been shown in a study covering 18 countries to be positively associated with good mental wellbeing<sup>30</sup>.

At WWT's recently restored urban wetland in Slough, kingfishers, egrets and damselflies have been spotted; the restored stream also provides a home for fish including dace, perch, chub and roach.

These unique benefits can be delivered within our towns and cities by creating and restoring wetlands of different shapes and sizes and suited to the urban landscape.

**If SuDS were incorporated into all new developments in England, the savings due to reduction in flood damage alone are estimated to be over £3bn<sup>31</sup>**



### **Blue space**

Any outdoor environment that prominently features open water. More biodiverse blue spaces have been shown to be better for wellbeing.

# Case Study **Salt Hill Park, Slough**

## Overview

**WWT worked with Slough Borough Council, Thames Water, the Environment Agency and the local community to transform a neglected urban stream and reconnect it with local communities.**

### What was created in Salt Hill Park?

Before the project began the area was an undermanaged part of Salt Hill Park. It was the site of an old lido, pieces of which remained, and it had been enclosed by trees that were not beneficial to local wildlife, making it dark and not somewhere in which people felt safe. A stream that once ran through the park had been redirected into a culvert underground. Local resident Suki Singh Dhanda described it as 'just overgrown scrubland. We used to walk a mile and a half round it to get to the temple.'

Community groups were consulted about what they wanted from the site and local volunteers were recruited to help transform it. The concrete from the lido was removed and the trees cut back to create a welcoming open space. The stream was de-culverted, restored to a meandering route and connected to new floodplain wetlands, and a path was created through them.

The end result is an open wetland landscape with varied habitats and wetland plants, linked to an adjacent orchard and wildflower meadow. Local people can enjoy the open water of the stream, including via a new wooden bridge from which you can hear the stream burbling. Dhanda says 'I'm now happy for my kids to walk through here ... We spotted a heron and there are fish in the stream – we'd never seen that before'.



### What is the impact on wellbeing?

The communities surrounding Salt Hill Park contain significant pockets of deprivation. Working with community groups and through school outreach visits WWT helped people reconnect with the stream and learn new skills, including through maintaining the site by ongoing volunteering.



The opening up of the space has helped to make people feel safer and encouraged them to pause and enjoy the site rather than rushing through, creating opportunities to take time out to appreciate the water and connect with nature and with others. The more welcoming site also creates better opportunities for active travel through it.

### **Additional benefits**

*Biodiversity:* kingfishers, egret and damselflies have all been spotted on the stream's banks. Biodiversity surveys with citizen scientists monitor the health of the river, further helping people engage with the wetlands.

*Flood Protection:* the restoration work has helped to address serious flooding concerns, creating a new, functioning floodplain that will slow water flow and increase the storage capacity of the stream.

*Water quality:* the Salt Hill Stream suffers from poor water quality. The wetlands help capture pollutants from homes and industry, trapping toxins and metals in the silt and plant roots. Multiple litter picks have also been undertaken, and residents have noticed a reduction in fly tipping. The improved water quality is leading to an increase in local wildlife.



**I'm now happy for my kids to walk through here ... we spotted a heron and there are fish in the stream – we'd never seen that before.**

*Suki Singh Dhanda, local resident*



# Why do stakeholders need to incorporate urban wetland creation in their plans and targets?

**Urban wetland creation can help multiple stakeholders meet their goals and targets because of the multiple benefits urban wetlands provide.**

## Benefits for the UK Government

**It would help create a nature recovery network and help halt biodiversity loss by 2030.** Urban wetlands not only provide habitat for unique species but can also connect larger rural habitats that may have been separated by urban areas. They can reduce water pollution by cleaning water and reducing sewer overflows during periods of heavy rainfall.

**It would help level up the UK.** If created in deprived areas, urban wetlands could improve health outcomes, reduce pollution and its effects on health (which are often higher in deprived communities<sup>32</sup>) and present opportunities for cheaper and healthier active travel for low-income communities. Access to these benefits is currently unequal. For example, only 57% of people in the most deprived areas spend time in the natural environment every week, compared to 70% in the least deprived areas; and 40% of people from

Black and Asian ethnic groups spend time in the natural environment once a week compared with 69% of those from White ethnic groups<sup>33</sup>.

**It would reduce health costs.** It is estimated that London's natural spaces alone save the NHS £580m a year in healthcare costs related to physical health and £370m a year in costs related to mental health<sup>34</sup>.

**It would make urban areas more resilient to climate change.** If SuDS were incorporated into all new developments in England, the savings due to reduction in flood damage alone are estimated at over £3bn<sup>35</sup>. Urban wetlands can also combat the effects of more frequent heatwaves.

**It would reduce pollution from combined sewer overflows (CSO) in a cost-effective way.** For example, a 40% reduction in CSO volume could be achieved using SuDS for 25% of the cost of installing a storage tank<sup>36</sup>.

**Only 57% of people in the most deprived areas spend time in the natural environment every week<sup>33</sup>.**



## Benefits for local authorities

**It would provide new spaces for socialising, recreation and relaxation in nature, improving mental and physical wellbeing.**

It would improve resilience to climate change by preventing local flooding and providing cooling during heatwaves.

It would reduce air and water pollution, improving people's health and increasing the number of safe recreation opportunities.

**It is estimated that London's natural spaces alone **save** the NHS**

**£580m**

**a year in healthcare costs.**

## Benefits for developers

**It would boost quality of life for residents and add value to properties.** Having blue space within 200 metres of a property can increase property values by over 3%.

It would help them meet the statutory requirement, made law in the Environment Act 2021, that new developments in England achieve a 10% net gain in biodiversity.

It would prevent flood damage to properties.



**Having blue space within 200 metres of a property can increase property values by **over 3%**.**



## Benefits for water companies

**It would help them meet duties to prevent flooding from sewers by reducing surface run-off in urban areas and therefore reducing the capacity needed in sewers before they overflow.**

It would help them meet duties to reduce pollution from combined sewer overflows by reducing surface water run-off into sewers during periods of heavy rain and therefore the need to emit sewage from overflows during these periods.

## Benefits for employers

**It would help improve employee satisfaction and productivity by improving the mental and physical wellbeing of employees<sup>37</sup>.**

It would protect their commercial sites from surface water flooding, reducing the likelihood of costly flood damage.





# Why do we need to create urban wetlands for wellbeing at scale?

**Creating wetlands for wellbeing would be transformative for the urban landscape, bringing nature and all its benefits back into our daily lives.**

We need to act urgently and at scale.

Many people do not access nature regularly. 2.78m people do not live within a ten-minute walk of a green space<sup>38</sup>. Currently there are no UK-wide plans to increase the amount of natural space, including blue space, in urban areas, and direct UK Government funding for new green and blue spaces stands at just £39m a year.

If we are to reap the benefits that urban wetlands provide we need a comprehensive effort from government and stakeholders across society. This would transform wellbeing by restoring our connection with nature in urban areas through creation, restoration, management and protection of urban wetlands.



**2.78m**

people do not live within a ten-minute walk of a green space.

# Case Study **Bridgwater Blue Heritage**

## Overview

**WWT is working with the local community, the Environment Agency and Sedgemoor District Council to restore and create a mosaic of wetlands and blue infrastructure in Bridgwater, to help nature and people be more resilient to climate change, to improve wellbeing and to connect people with Bridgwater's maritime history.**

### What is the vision for the project?

Bridgwater and its surrounding area are at high risk of flooding and there was widespread flooding in 2014. This will be made worse by the climate crisis. Bridgwater is also one of the most deprived areas in Somerset, including when it comes to health outcomes. This project works to tackle the effects of climate change on flood risk and improve wellbeing by restoring people's connection with the natural environment and cultural history.

This will be achieved through a mosaic of blue infrastructure throughout Bridgwater, connected together by walking routes and blue corridors, with information that highlights both nature and Bridgwater's maritime heritage as a port town.

People will be given access to the benefits of wetlands on their doorstep.

Communities will also be encouraged to take ownership of the project, shape it to their needs and preserve its benefits long after the project ends. SuDS will reduce flood risk by slowing the flow, clean the water and provide an amenity for people, as well as boosting biodiversity.

### Key planned outputs include:

- Creating a wetland park next to the site of a planned flood barrier, to demonstrate how natural flood management and hard infrastructure can work together. The site also contains wartime pill boxes which could be integrated into the park to give greater opportunities for learning and recreation.
- Creating a 'pop-up' floating wetland in the Bridgwater docks to clean the water, improve biodiversity and create a tranquil spot in the heart of the town.
- Developing a health and wellbeing programme that helps people appreciate the potential of new and existing blue spaces to improve their mental health.



### **What has been achieved so far?**

The project has completed phase 1 of the restoration of the Meads, a floodplain grazing marsh on the edge of the town, turning it into a biodiverse wetland. Previously the wetland had been drained for agricultural use. The project restored a historic stream, thereby re-establishing a local connection to wetlands, created habitats in new scrapes and has reduced downstream flooding. Community action included helping design the vision for the site and planting 1,000 reeds.

Work is also underway to channel surface water run-off from a new cinema complex into a natural swale rather than through an underground pipe. This will provide biodiverse habitat, as well as blue space for people to connect with nature, instead of directing water straight into the already strained sewer systems.

The project has also begun engaging local people with wetlands and the resilience of the town. Around 30 volunteers regularly participate, with around 20 trained through the project to monitor wildlife and water quality. A Blue Forum of local stakeholders and several open days have also helped establish a network of community members for the project to work with. This has included working with organisations such as Southwest Heritage and the Brick and Tile Museum to begin unearthing Bridgwater's maritime history.

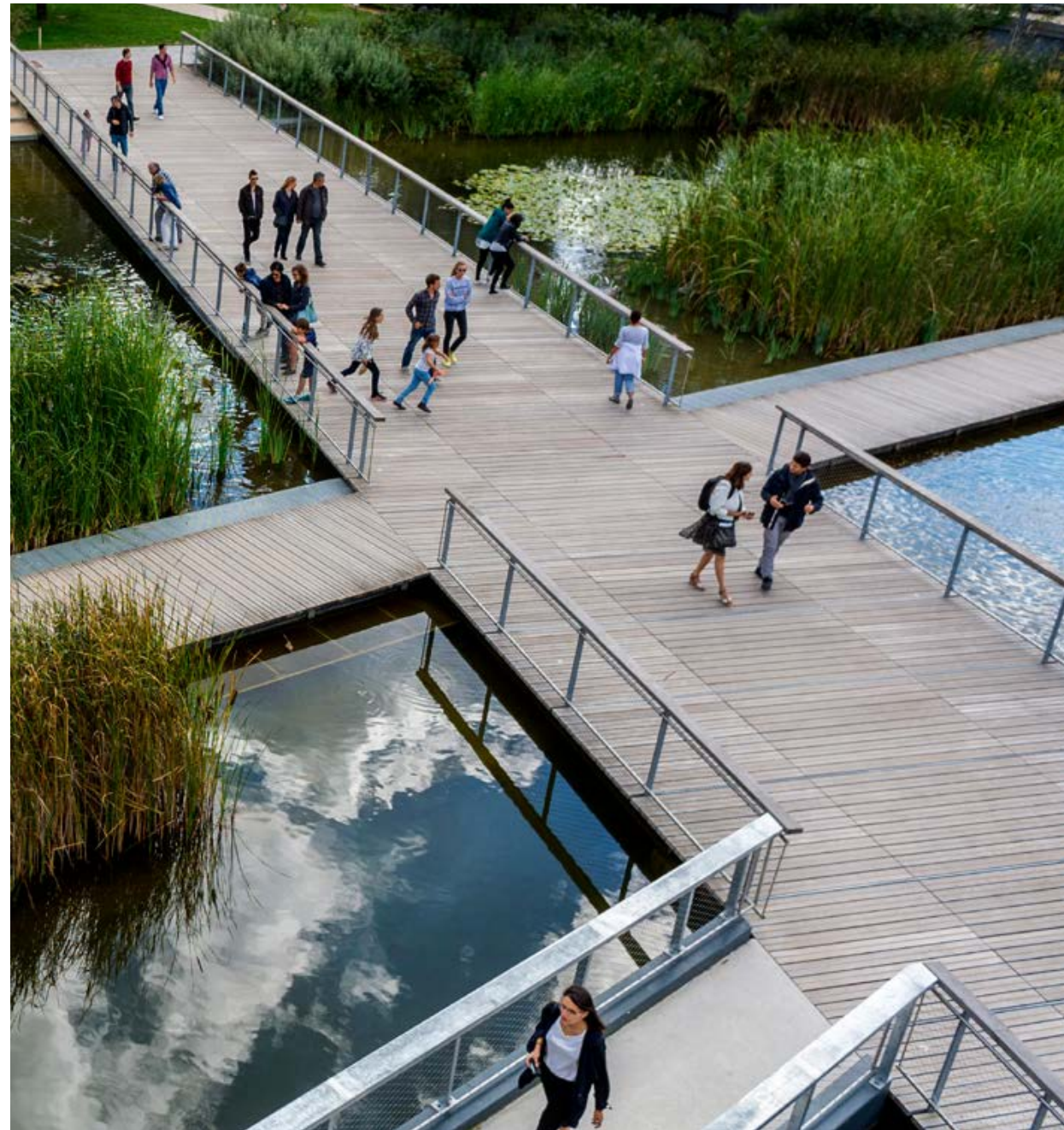




Paris, France, Parc Martin Luther King, Clément-Baignolles, 75017

### 3. Potential

**WWT is working to map potential areas for wetland creation, including urban areas.**



## Where will communities most benefit from urban wetlands for wellbeing?

We know already that access to green and blue space is highly unequal, with lack of access often overlapping with deprivation.

More than 30% of people don't have access to green space within a 15-minute walk, and in the 200 most disadvantaged urban areas (those with the lowest levels of accessible green space combined with the highest levels of deprivation), only 3% of people have access to green space within a 15-minute walk<sup>39</sup>.



In the 200 most disadvantaged urban areas **only**

**3%**

of people have access to green space within a 15 minute walk.

**Factors to consider in prioritising urban wetland creation should therefore include:**

**Current access to natural green and blue space**

Areas without access will be a priority for wetland creation and restoration in order to level up wellbeing. Physical barriers to access should be measured, for example through the amount of green and blue space in a neighbourhood, as well as behavioural barriers, for example through how often people visit green and blue space and reasons for not visiting.



**Levels of deprivation**

Deprived communities are the least likely to access green and blue space but have the most to gain from accessing it as exposure to blue space has a greater effect on the mental wellbeing of those from low-income households<sup>40</sup>. Multiple aspects of deprivation should be included, for example through the Index of Multiple Deprivation. Pockets of deprivation within more affluent areas should also be identified.

**Vulnerability to climate breakdown risks**

Areas that are at risk of flooding and overheating as the climate crisis escalates should be a priority so that the risk management benefits of wetlands can be used to increase quality of life.

**Cultural and/or historical connection to wetlands**

Although most settlements were traditionally built near wetlands, some have a particularly strong and/or recent connection to wetlands. It should be a priority to restore this heritage. For example, WWT's Bridgwater Blue Heritage project aims to celebrate Bridgwater's maritime heritage and enhance wellbeing.

**Places with existing degraded wetlands**

Places where wetlands already exist but need restoring provide an excellent opportunity to return wildlife to its natural habitat and restore what may, at one time, have been a community asset.

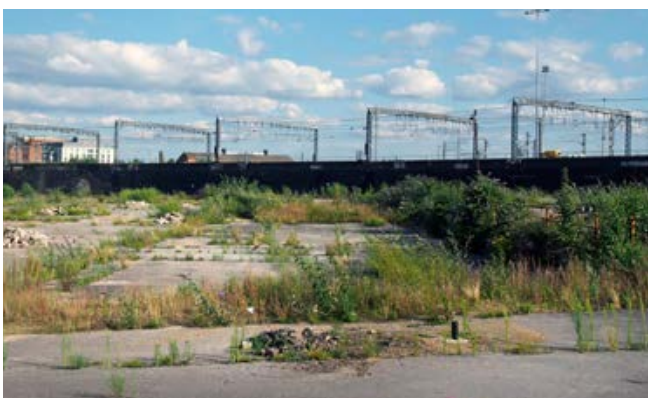
# Where are there specific opportunities for wetland creation over the next five years?

## Specific types of site present a particular opportunity for wetland creation and restoration in urban areas.

These sites need to be identified across the country, for example as part of local nature recovery strategies and local green and blue infrastructure strategies. They include:

### Brownfield sites

Sites that are currently out of use, and where they are currently of low value to nature, could be transformed into wetlands in order to provide a resource to the community and restore a sense of place to derelict areas.



### Local authority-owned land

Land already owned by local authorities that is currently out of use or degraded could be put to use to enhance the wellbeing of communities through wetland creation.

### NHS, military and prison estates, and other publicly-owned land

The Government often owns large tracts of land in urban areas and could enhance it through the creation of mini-wetlands and SuDS to provide a resource to existing users of the land, employees and the public, and to increase the climate resilience of public services.



## Places where streets are already being worked on

Where roads and pavements are being worked on for other purposes, such as repairs to sewers or installation of cables, there is an opportunity to install street-level measures, such as rain gardens, at reduced cost when the road is repaired.

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## New developments

New developments can usually incorporate SuDS at no additional cost and without additional land take. They can go further and enhance quality of life, while also raising property values, by installing larger areas of blue space for people to enjoy<sup>41</sup>.







## 4. Process

**WWT is seeking to create and restore urban wetlands, working alongside other partners to secure their wellbeing benefits for everyone.**



### **Delivery**

However, this will only achieve a small proportion of the wetland creation and restoration needed to create urban wetlands for wellbeing.

We will not be able to create and restore urban wetlands for wellbeing alone. It will require delivery by stakeholders across society, including government, communities, individuals, businesses, landowners and civil society groups.

### **Capacity building**

Increasing the rate of wetland creation and restoration by these stakeholders will require capacity building efforts to equip stakeholders with the advice, training and evidence needed to provide the wellbeing benefits of wetlands themselves.

### **Community engagement**

Local community engagement will be critical to allow communities to create urban wetlands both alongside WWT and other stakeholders and through their own initiatives. Community participation must be supported at every stage of projects, allowing local people to shape wetlands to their needs, make them part of community life and improve their wellbeing.

Alongside these efforts to create and restore urban wetlands, efforts to protect and manage existing urban wetlands, and connect people with them, will be crucial to conserve the wetland nature that remains in urban areas.



# What are the priorities to begin the creation of urban wetlands for wellbeing?

Set out below are the priority actions that will kick start the creation of urban wetlands for wellbeing, through delivery, capacity building and community engagement.

## Delivery

**The following will demonstrate the benefits of wetland creation and access and create a model for further expansion:**

### Habitat creation

Creating a large-scale urban wetland as an exemplar of how larger wetlands can contribute to our wellbeing by providing spaces for recreation, socialising, physical activity and active travel, and how they can improve resilience to the effects of climate change and increase biodiversity.

Creating a network of small-scale wetlands integrated into a neighbourhood as an exemplar of how wetlands where people live and work can provide multiple wellbeing benefits, including opportunities for relaxation and socialising, by becoming an integral part of community life. This should include SuDS interventions to deliver flood resilience and water quality benefits.

Creating urban wetlands in a workplace, such as a commercial estate or hospital, and/or the surrounding community to improve the wellbeing of employees and other community members.

### Access

Through NHS commissioning and funding bodies and local government public health functions, increasing access to nature-based public health programmes in wetlands.

## Capacity building

**The following are priorities for building the capacity of stakeholders to begin to deliver urban wetlands for wellbeing and reap benefits for themselves and their communities:**

### Advice and training

Creating and delivering a scheme to support local councils to incorporate SuDS and urban wetlands into their local plans and policies in order to enhance wellbeing, increase resilience to climate change and boost biodiversity.

Providing information and advice to individuals to allow them to create mini-wetlands in their own gardens, including drainpipe wetlands and wildlife ponds.

Providing advice to developers on the delivery of new developments that integrate wildlife-rich urban wetlands throughout their design, delivering wellbeing and flood resilience benefits and boosting the attraction of properties.

Working with education providers working with planning, development, construction and allied professionals to ensure that the benefits of urban wetlands are appreciated and that these professionals know how to integrate high-quality wetlands into the urban landscape.

Training people to be wetland connectors who guide members of the community to groups, services, organisations and activities that can help them benefit from urban wetlands, and who communicate the importance of wetlands and ecosystem services. This will help build a bridge between the services provided by wetlands and the communities they serve.

### Evidence

Delivering monitoring and evaluation of wetland-based interventions in urban areas to measure their effects on wellbeing to drive change in academic understanding, policy and funding. This could include studies of the full range of benefits that creating and restoring urban wetlands can bring, including to biodiversity.

Exploring evidence gaps regarding the impact of blue space on health and wellbeing, including the cost-effectiveness of wetland-based health interventions.



## Community engagement

### **Working with the community to create wetlands for wellbeing means engaging with them during:**

#### **Project development**

The needs of the community must be central to projects. This means not just consulting them but involving them in the design, governance and management of projects. This will ensure that projects serve the community and are not imposed from outside.

#### **Project delivery**

Community members need to be given the opportunity to deliver urban wetlands for themselves. This can be done through both volunteering and the employment of local people. This will ensure that wetlands are integrated into the lives of the community. It will also mean increased opportunities for people to improve their wellbeing by working in the natural environment.

#### **Use**

Running and facilitating activities that remove barriers to accessing nature will ensure the benefits are as widespread as possible. This includes nature-prescribing initiatives in blue spaces and community activities in urban wetlands, such as educational classes and walks and schools outreach programmes.

#### **Maintenance**

Community adoption of projects ensures ongoing engagement of the community with urban wetlands, which should bring about longer-lasting wellbeing and biodiversity benefits. This is only possible if the community has been included in project design and delivery throughout.

# How will urban wetlands for wellbeing be financed?

## Public finance is essential in creating urban wetlands for wellbeing.

This includes making sure wetlands are created in the most deprived areas. However, public finance alone will not be enough to achieve urban wetlands for wellbeing and private finance will be needed, either alongside or separate from public finance.

The following funding opportunities are mainly focused on England; we hope to explore similar opportunities for the other three home nations at a later date to further facilitate urban wetland creation and restoration throughout the UK.

## Public sector investment

### Restoring nature

The Spending Review 2021 included £250 million over three years for restoring nature and meeting the new legally binding target to halt biodiversity loss by 2030. Some of this funding should be directed towards urban wetlands.

### Levelling Up

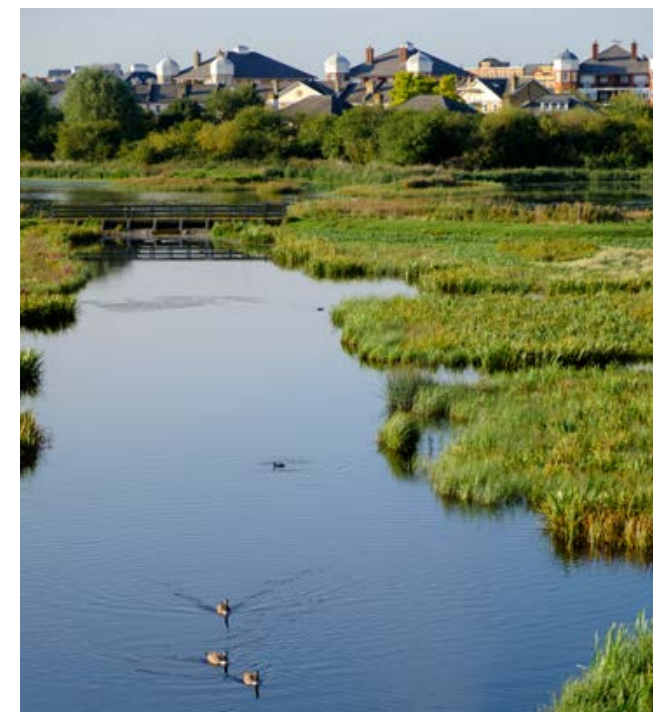
Funding for improving infrastructure across the UK to reduce regional inequalities should be directed towards creating and restoring urban wetlands.

### Climate resilience

Funding for flood resilience from local and national governments, Environment Agency funding in England for flood and coastal erosion risk management (FCERM), and partnership funding for flood prevention from local authorities should be directed towards creating urban wetlands with the ability to slow and capture surface water.

## Health

There is potential for NHS Integrated Care Systems (ICSs) and/or local government public health functions to fund nature prescribing in blue spaces as a treatment for mental ill health.



## Private sector investment

### Biodiversity net gain

The Environment Act 2021 introduced a statutory requirement for all new developments in England to achieve a 10% net gain in biodiversity. This provides an opportunity for the private funding of new wetlands. Some of this net gain will come from off-site delivery or through purchasing of net-gain credits (backed by habitat restoration elsewhere). However, early pilots have shown that most of the net gain is delivered on site by developers<sup>42</sup>. If this on-site delivery is high quality, it has the potential to deliver urban wetlands that are good for wildlife and that enhance wellbeing.

### Developer contributions

Currently local authorities in England and Wales are able to seek contributions to local infrastructure from developers through planning obligations (commonly referred to as 'Section 106' or 'S106' obligations after Section 106 of the Planning Act) and the Community Infrastructure Levy. These contributions can be put towards green infrastructure and natural spaces, including urban wetlands.

### SuDS in new developments

Currently, the National Planning Policy Framework, which sets out requirements for new developments in England, states that 'major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate' and that the system should 'where possible, provide multifunctional benefits'. With proper advice to developers, these requirements can be harnessed so that they lead to developments which integrate urban wetlands.

### Water company investment

Private water companies in England are planning to invest £7.1bn in environmental improvements between 2020 and 2025<sup>43</sup>. The Environment Act 2021 also requires water companies to secure a progressive reduction in the adverse impacts of discharges from storm overflows. Water companies therefore have the opportunity to invest in urban wetlands, including SuDS, to meet their obligations and deliver multiple benefits.

### Employer contributions

Where one employer or industrial site is responsible for a large proportion of local employment, employer contributions towards creating a more liveable community based around urban wetlands could be sought, either through mandatory planning conditions or voluntary contributions. This could include contributions to connecting people with urban wetlands, such as funding nature-prescribing initiatives in blue spaces.



## 5.

# Partnerships

**No single organisation will be able to achieve the creation of urban wetlands for wellbeing alone. To create effective urban wetlands, we need the involvement of national and local governments, the investment and know-how of businesses and a process of co-creation with local communities.**

**The partners identified here are focused on England. We are working to identify the key partners in the other home nations to facilitate urban wetland creation UK wide.**





# Delivery

## Government

Creating and restoring urban wetlands for wellbeing will require working with the UK Government and its agencies and making use of their skills and expertise in nature creation. They include DEFRA, the Environment Agency and Natural England.

Government bodies with less experience of working with nature but which are important for urban planning, such as the Department for Levelling Up, Housing and Communities and Homes England will also be important. This will require bridging the gap between these bodies and nature-focused bodies.

Local authorities working with communities will be crucial to delivering urban wetlands in their areas.

NHS ICSs and funding bodies, and local government public health functions, will be needed to establish sustainable funding mechanisms for nature-based health programmes.

## Business

Developers will be needed to co-design and deliver new developments that integrate urban wetlands.

Water companies will be needed to co-design and deliver projects that demonstrate the best use of SuDS in creating urban wetlands for wellbeing.

Employers can co-design and deliver urban wetlands in workplaces and/or in the surrounding community.

## Civil Society

Community groups and local charities must be supported so that they can deliver projects that genuinely meet their local needs and become a valued part of community life.

## Capacity building

### Government

Training and advice will be needed to build the capacity of local authorities to integrate multi-benefit, wildlife-rich urban wetland creation into their plans and policies.

### Business

Developers will need advice on best practice for how biodiverse wetlands can be effectively and efficiently integrated into the footprint of new developments.

Evidence should be shared with developers and water companies on how to make best use of SuDS so that the multiple benefits for wellbeing and nature are captured

Providers of education to planning, development, construction and allied professionals are well placed to increase business knowledge about the benefits of urban wetlands.

### Civil Society

Training will be needed to increase the skills of community groups, local charities and their members so that they can be equal partners in projects, adopt projects they helped create and initiate urban wetland projects of their own.

Mental health charities will be crucial to increasing the evidence for and understanding of the mental health benefits of blue space. This includes work to run and assess nature-prescribing initiatives in blue spaces.

## Community engagement

### Government

Projects involving national and local governments should include community members as equal partners.

### Business

Projects involving developers and water companies should include community members as equal partners.

### Civil Society

Community groups and local charities should work as equal partners on all projects so that the community can co-produce at all stages.



## 6. Policy

Creating and restoring urban wetlands for wellbeing requires a supportive policy framework. Stakeholders require the right information, plans and funding to make this happen.

The UK Government needs to adopt the following policies to ensure we can make the very best of use of urban wetlands for people's wellbeing.

These policies relate to the UK Government only. In time WWT plans to present policy proposals to the devolved administrations in Scotland, Wales and Northern Ireland to ensure they are also doing all they can to accelerate the creation and use of urban wetlands for wellbeing.

# Information

## TOP PRIORITY

**Guidance:** Ensure Green Infrastructure Standards include standards for urban wetlands.

The UK Government's 25 Year Environment Plan commits to drawing 'up a national framework of green infrastructure standards, ensuring that new developments include accessible green spaces and that any area with little or no green space can be improved for the benefit of the community'.

These standards should help local authorities, developers and communities make best use of the multiple benefits of wetlands for urban wellbeing when creating and funding local infrastructure.

They are currently being developed by Natural England and should include standards and guidance for urban wetlands as a core component.



**Sites: Ensure Local Nature Recovery Strategies map places where urban nature should be restored, including urban wetlands.**

The Environment Act 2021 sets out a requirement for Local Nature Recovery Strategies (LNRSs) to cover all areas of England. Part of their role will be mapping specific proposals for creating or improving habitat for nature.

It is essential the strategies allow people to access wetland nature close to where they live and work and not just in the countryside, as urban natural spaces are the most visited type of natural space<sup>44</sup>.

LNRSs therefore need to map places where urban nature, including urban wetlands, should be created or restored.

**Evidence: Ensure targets for levelling up include measures of access to and use of nature, including blue space, in their intended outcomes.**

Addressing current inequalities in access to nature, including blue space, is fundamental to levelling up opportunities across the UK, and can make an important contribution to reducing inequalities in wellbeing.

Research is needed to establish current levels of access to and use of nature, both in geographical and behavioural terms, and to monitor it over time against specific targets.



# Plans

## TOP PRIORITY

**Standards: Make multi-benefit SuDS a statutory requirement for all new developments in England.**

The UK Government is currently reviewing Schedule 3 of the Flood and Water Management Act 2010, which would have required all new developments in England to integrate effective SuDS; it was never implemented.

Implementing this would mean that all new developments have reduced flood risk and multiple other benefits for people’s wellbeing.

An outcome of this review should be a statutory requirement for all new developments in England to have SuDS that meet national standards. Nature-based above-ground SuDS should be the default standard and SuDS that create blue space should be prominently featured in guidance. Finally, there should be clarity over the adoption and delivery of the long-term maintenance of SuDS to ensure their multiple benefits.

**Targets: Introduce a mandatory access to nature standard for all homes with time-specific targets for reaching the standard.**

The UK Government is currently considering reform of the planning system for England. The reform should include introducing a mandatory access to nature standard.

This will accelerate efforts by planning authorities to ensure that access to nature is integrated into local plans and that new developments integrate adequate green and blue space. This will increase the amount of natural space, including high-quality wetlands, in urban areas, especially in areas currently lacking natural spaces.

The requirement should apply both to new developments and existing homes. It should include blue space in its definition of access to nature, and the quality standards that natural spaces have to meet should include robust standards for natural wetlands.

**Strategies: Revise the National Planning Policy Framework, introducing a requirement for planning authorities to integrate wetland creation and restoration into their local plans.**

The National Planning Policy Framework for England provides a framework within which locally prepared plans for housing and other developments can be produced.

This has the potential to drive wetland creation through local planning, providing multiple benefits to communities through new developments.

It should set out clear requirements for integrating blue and green infrastructure into local plans, including through retrofitting blue space into existing developments to improve access for deprived communities. It should make clear that blue and green infrastructure should harness the multiple benefits of urban wetlands.

# Funding

## TOP PRIORITY

**Statutory requirements:** Introduce Biodiversity Net Gain standards that require the replacement of wetlands with wetlands on site wherever possible.

The regulations that will implement mandatory Biodiversity Net Gain are currently being considered.

They can be used to ensure that where access to wetlands is lost it is replaced with wetlands of the same or better quality nearby, meaning the wellbeing benefits are retained or enhanced.

In order to maximise potential benefits, the standards should require developers to follow the mitigation hierarchy (avoid damage, minimise damage, mitigate and then compensate) to protect existing wetlands, that wetlands be replaced with new, high-quality wetlands on site wherever possible, and that these be connected together to form larger habitats for wildlife and deliver more benefits for people.

**Public funding:** Direct Levelling Up funding towards reducing inequalities in access to nature, including urban wetlands.

This will help to create urban wetlands for wellbeing that benefit those areas without existing access to the wellbeing benefits of wetlands.

This means future rounds of current funding pots, such as the Levelling Up Fund and Shared Prosperity Fund, as well as any future funds aimed at reducing regional inequalities, should invest a significant proportion in green infrastructure, including urban wetland creation.

**Statutory requirements:** Ensure any replacement for the Community Infrastructure Levy (CIL) and planning obligations include provisions to support access to nature.

The UK Government is considering replacing planning obligations and the CIL.

Any replacements must ensure that the specific impacts of development on the environment are mitigated and that more people are given access to the multiple benefits of wetlands, so we do not lose the vital services nature gives us.

This should be done by ensuring that there is funding specifically for access to nature. This could include ring-fencing a certain proportion of infrastructure funding from new developments for green and blue infrastructure.





# Case Study **Portland Metropolitan Area**

## **Overview**

**The Portland Metropolitan Area in the North Western US is as an example of what can be achieved by creating and restoring urban wetlands of different types and sizes across a city, working alongside the community.**

### **Why did Portland decide to restore its wetlands?**

Like many areas of the UK, Portland has a history of major flooding. Previous flood-risk reduction measures had failed. These often focused on engineered solutions, such as the channelisation of the Johnson Creek through widening and rock-lining.

This disconnected the stream from its floodplain and increased the amount of water flowing through the stream during heavy rainfall, exacerbating flood risk as well as destroying crucial wetland habitats<sup>45</sup>. Following a 1996 flood, a change of approach to managing flood risk in Portland took place.

### **How is Portland restoring its wetlands?**

Through its Green Streets Program, streets throughout the city incorporate rain gardens, swales and ponds that capture and slow rain water and prevent surges in water levels during heavy rain.

These street-level wetlands also filter water and prevent it reaching combined sewers and increasing water pollution. City officials estimate that the \$9 million invested in the greening of streets has saved \$224 million in repair and maintenance costs for combined sewer overflows<sup>46</sup>. This green and blue infrastructure also makes for beautiful, biodiverse spaces where people live and work, and active travel infrastructure is often integrated alongside.

Major SuDS projects also manage flood risk while providing spaces in which people can relax.



One example is the Oregon Convention Center SuDS<sup>47</sup>. Water from its roof flows into the adjacent gardens where a system of pools and weirs slows water flow and collects sediments. Meanwhile plants on both sides of the pools help to filter water, while providing attractive blue space in the midst of an urban park. Water finally collects in a larger pool that provides wetland habitat. Such projects are driven by local policy, which requires all sites over 500 ft<sup>2</sup> to meet SuDS standards.

Finally, community groups, known as watershed councils, lead the restoration of larger areas of wetland habitat to manage the flood risk from rivers and restore functioning ecosystems.

These groups are supported by a 1995 Oregon state law allowing local Governments to designate them to manage water. For example, the Johnson Creek Watershed Council has collaborated with local Government on over 200 restoration projects to restore the functioning of the Johnson Creek and its floodplain<sup>48</sup>.

This includes reconnecting a 63-acre floodplain containing a new public park and restoring sections of stream in small urban parks in the heart of the city<sup>49</sup>. A trail follows the 34km length of the Creek to allow access to the restored wetlands. These sites are managed with the help of the local community, which is included through regular mail contact, community events and outreach to neighbourhood organisations.

The neighbouring Columbia Slough Watershed Council has even managed to reduce combined sewer overflows to almost zero<sup>50</sup>.

**Portland demonstrates how multiple levels of wetland intervention can help to manage flooding and water pollution while providing multiple opportunities for residents to connect with nature on their doorsteps.**

## Conclusion

WWT envisages the creation of wildlife-rich urban wetlands for wellbeing across many different scales, from ponds in people's gardens to large blue spaces in their neighbourhoods.



These wetlands would connect together to benefit the whole community. Meanwhile community engagement would expand access to groups who would not normally benefit from access to wetlands.



By implementing this at scale we can increase our resilience to climate change, boost biodiversity, and reconnect to other people and the natural world, addressing the challenges that urban life creates for connection with nature.



These are WWT's proposals to create and restore urban wetlands for wellbeing. We are already leading the way, creating valuable blue spaces to boost the wellbeing of local people and build the resilience of their communities to the challenges they face.

However, we know there is huge potential to do a lot more, and unlocking this requires determined efforts from local and national governments, businesses and communities across the country.

The opportunity is now, and with partnerships, funding and policy change we can create wetlands for wellbeing. Please join with us so that together we can make a Blue Recovery happen.

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# Glossary of terms

## **Active transport**

Any means of travel that involves being physically active, such as walking and cycling.

## **Biodiversity net gain**

An approach to development which aims to leave the natural environment in a measurably better state than beforehand. The Environment Act 2021 introduced a statutory requirement for all new developments in England to achieve a 10% net gain in biodiversity.

## **Blue space**

Any outdoor environment which prominently features open water.

## **Citizen science**

The involvement of community volunteers in conducting scientific research, such as monitoring of biodiversity or water pollution.

## **Green infrastructure**

A network of multi-functional green and blue spaces and other natural features that delivers a wide range of environmental, economic, health and wellbeing benefits.

## **Liveability**

This describes when measures are in place which make our daily lives easier, safer and more enjoyable, such as measures making active travel more accessible or that reduce the risk of flooding during heavy rain.

## **Nature prescribing**

A type of social prescribing where people engage in activities in natural spaces including wetlands to improve their mental health.

## **Rain gardens**

A SuDS feature involving relatively small depressions in the ground filled with native plants that can act as infiltration points for surface water, slowing the build-up of water and reducing flood risk.

## **SuDS**

Sustainable drainage systems: drainage designed to manage water locally (as close to source as possible), to mimic natural drainage and encourage infiltration, attenuation and passive treatment of water, while providing multiple benefits to people and nature.

## **Surface water flooding**

When rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

## **Swales**

A SuDS feature involving shallow and broad vegetated channels designed to store and/or convey surface water and remove pollutants.

There are many exciting opportunities to accelerate the creation of wildlife-rich urban wetlands. Whether you're interested in working with WWT on a project, helping us build the capacity of stakeholders to create more urban wetlands, or helping us put in place the policies needed to support wetland creation, we'd love to hear from you.

**Together we can help secure a future where healthy wetland nature thrives and enriches lives.**



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