Thames Valley Flood Scheme

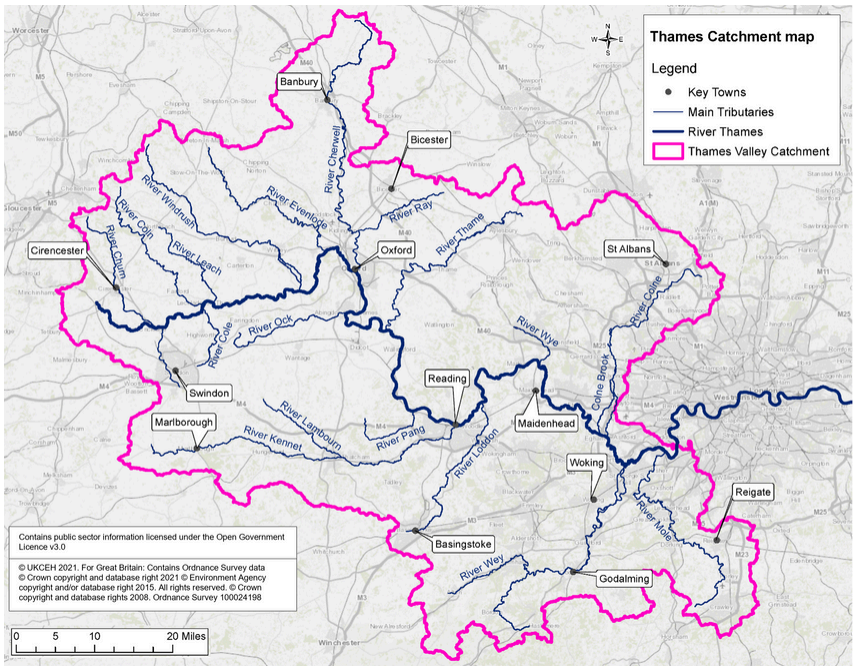
November 2024 project update

In this issue

The Thames Valley Flood Scheme has been investigating ways to manage flood risk on a large scale across the Thames area. We have been looking at ways to reduce flood risk and build climate resilience for communities, businesses and infrastructure. Throughout the project, we have developed a strong partnership group.

We have found that a catchment wide approach is not cost beneficial, and would not gain approval to be progressed at this time.

Read on to learn more about what this development means for the Thames Valley Flood Scheme and the other work that is happening in the Thames area catchment.



Catchment map of the Thames Valley Flood Scheme area

Protecting and enhancing the Thames Valley

Environment Agency

Welcome from the Project Director

Welcome to the latest edition of our newsletter. Whether you have been with us for years or are just joining, we appreciate your interest.

Today, we are sharing the results of our investigation of the potential flood storage areas in the Thames catchment. You can also read about some of the great work our partners have been doing to improve the natural environment.

Over the course of the Thames Valley Flood Scheme, we have developed an approach to look into ways to reduce flood risk and enhance the natural environment at a scale that hasn't previously been considered across the Thames catchment. Our work showed that large scale flood storage supported by natural flood management could reduce flood risk in the Thames Valley.

We reviewed over 700 potential flood storage areas. While we have found that large scale flood storage does have potential to help reduce flood risk to people and properties along the River Thames, the benefits in reducing flood risk would not be enough to gain funding and approvals. We are therefore not able to progress catchment scale flood storage at this time.

I'm mindful that many people will be concerned about flooding. The Environment Agency remains committed to working with communities to understand local challenges and explore opportunities to improve resilience. Ahead of winter I encourage you to learn more about your personal flood risk, and take action to ensure you and your loved ones have an action plan in case flooding happens.

We are continuing to explore how we can support natural flood management work being completed by partners and communities across the Thames Valley. Natural flood management has many benefits beyond flood risk, and the Environment Agency will continue to support the great work already happening across the catchment.

You can read more about the work being done by our partners at the Wildfowl and Wetlands Trust and the Floodplain Meadows Partnership on pages 6 to 9.

Thank you once again for your support and feedback. If you have any further thoughts or suggestions, please don't hesitate to get in touch.

Robbie Williams
Project Director

Contact the team

https://engageenvironmentagency.uk.engagementhq.com/hub-page/thames-valley

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ThamesValleyFloodScheme

What have we found?

Purpose

The scheme was set up to assess ways to reduce flood risk at a catchment-wide scale. We looked at the effectiveness of a range of ways to reduce flood risk, while improving sustainability and considering value for money. This led us to focus on large scale flood storage and natural flood management.

Natural Flood Management

While natural flood management has multiple benefits, large scale flood storage is needed to meet the project aims. We have been assessing how natural flood management can be used in combination with flood storage.

Flood storage potential

Our early analysis showed that large-scale flood storage could meet these objectives. From over 700 potential sites across the catchment, we identified 17 to take forward for further assessments.

We used flood models to assess the effectiveness of flood storage to reduce flood risk on the River Thames. We found that flood storage does offer a reduction in flood risk but it is not as much as our studies had indicated. When we combine flood storage areas, the benefits increase, but the cost increases more quickly. Fewer properties would see a reduction in flood risk than anticipated, and the benefits only slightly outweigh the costs.

We have found that a catchment scale flood storage project is not possible at this time. We would not be able to secure funding or approval to take forward large scale flood storage.

Funding and approvals challenges

Considering the overall costs and benefits alongside the funding available, the catchment scale scheme is not considered feasible to take forward at this time.

Conclusion

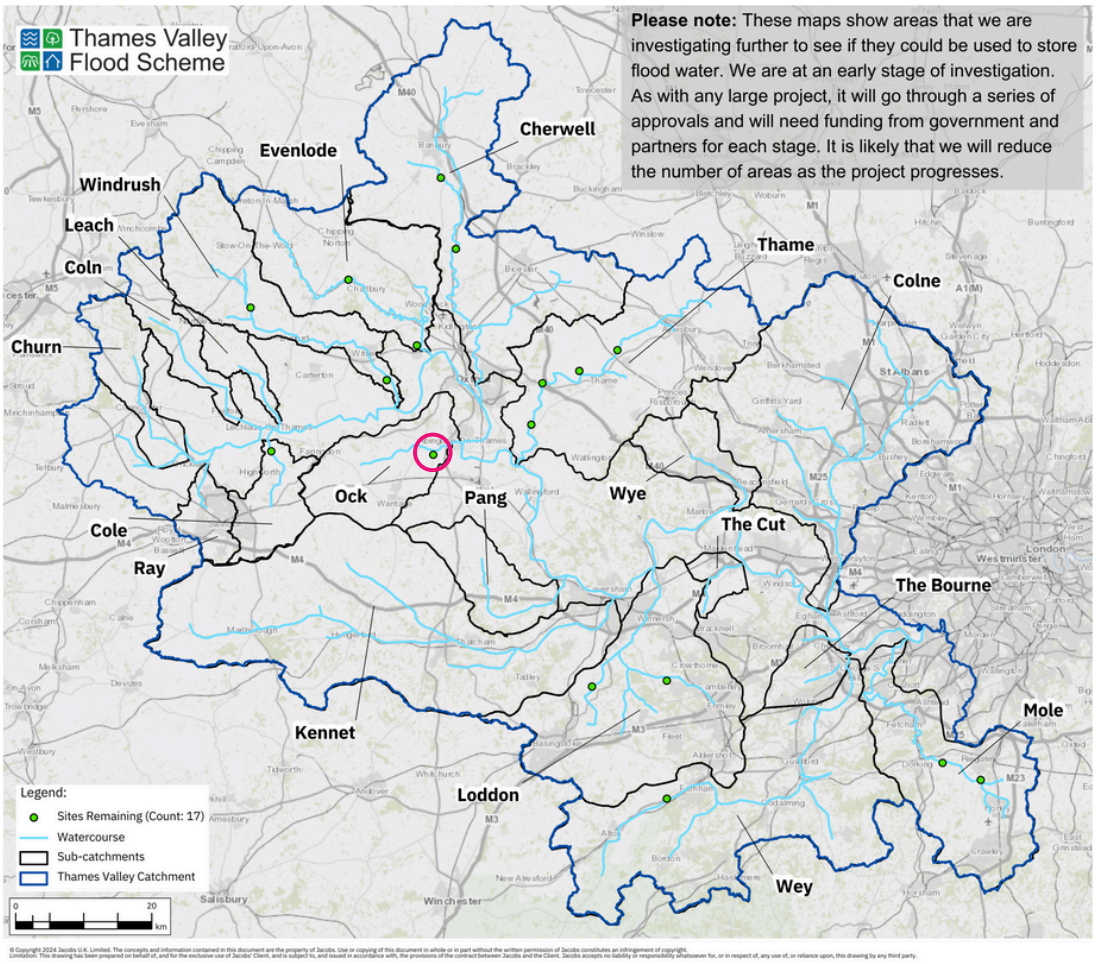
We looked at the benefits of the best performing flood storage areas relative to the costs, to see if it is worth taking any forward as individual projects. We considered the local reduction to flood risk in each area, other existing and planned work to reduce flood risk in the Thames Area and likelihood of gaining funding and approval at this time. We are not able to take forward any of the locations as individual projects at this time.

We recognise the value of natural flood management and are looking at how we continue to work closely with our partners as we consider our next steps.

A closer look at flood storage

The green dots on the map show the approximate locations for the flood storage areas that we have been investigating. While we will not continue investigating these as part of the Thames Valley Flood Scheme, we are looking into a potential opportunity on the River Ock near Abingdon. This is highlighted by the pink circle.

We are not able to take this location forward as a flood storage area at this time for the reasons outlined on page 3. However it is near the area being investigated by Thames Water for the South East Strategic Reservoir Option (SESRO) and we are looking to see if there are any opportunities alongside this to reduce flood risk. There is no guarantee that this will be possible, but it is worth exploring.



Environment Agency's regulatory role

We would like to stress that the Environment Agency is first and foremost a regulator of Thames Water. Our regulatory role is to ensure that any potential impacts on the environment and local area, such as flood risk, are minimised or mitigated.

The Environment Agency plays a crucial role in the water resources planning process. We review water company regional plans and make sure they follow the correct guidelines and methods. We are also the regulator for any environmental permits and a statutory consultee of the planning process.

We are in discussion with Thames Water to identify potential overlaps between the projects to see if there are efficiencies that we can deliver. This could mean saving money and minimising construction, while still providing water resources and flood risk benefits.

Moving forward

While we are not continuing to develop catchment wide flood storage at this time, we at the Environment Agency remain dedicated to reducing flooding in the Thames area. We know how important it is to keep our communities safe from floods.

We'll use what we've learned from this project to improve our future work. To do this, we will:

- Investigate ways to manage flood risk in other areas where schemes are not yet planned.
- Progress other planned flood risk schemes, like the River Thames Scheme and the Oxford Flood Alleviation Scheme.
- Work with local councils to support their surface water schemes and explore smaller scale opportunities to manage flood risk in the area.
- Continue to warn and inform communities when a flood is expected through our Flood Warning Service, giving people time to act.
- Keep working with communities to ensure those at flood risk are aware and know how to prepare and respond.
- Share our improved flood risk data with local councils in the Thames catchment area and the Thames Regional Flood and Coastal Committee to support local flood response plans.


Environment Agency field teams clearing blockages

Prepare for wet weather

Know your flood risk and make a flood plan to keep yourself and your family safe this winter. Use the Gov.uk website to help you prepare for flooding and make a flood plan.

Sign up for free flood warnings by phone, text or email

Floodline 0345 988 1188 www.gov.uk/floodsdestroy

Flood Alert
Be prepared

- Prepare a flood kit including documents and medications
- Avoid walking, cycling or driving through any flood water
- Be prepared to act on your flood plan

Flood Warning
Take action

- Move your loved ones, pets and valuables to a safe place
- Move to higher ground or the upper floor of a building
- Turn off the utilities if it's safe to do so
- Put flood protection equipment in place

Severe Flood Warning
Danger to life

- Stay in a safe place
- Be ready to evacuate your home
- Do as the emergency services tell you
- Call 999 if you are in danger

FLOOD ACTION

Go to GOV.UK/PREPARE-FOR-FLOODING

Floodplain Meadows: Beauty and Utility for Thames Valley

Olivia Nelson, Advocacy Manager
Floodplain Meadows Partnership

Floodplain meadows are part of a quintessentially rural landscape that was found throughout Britain's river valleys 100 years ago. Exceptionally biodiverse, a floodplain meadow can support up to 40 plant species per square metre, which in turn supports a wide variety of invertebrate and bird life. They were created by a long history of consistent agricultural management. Before the introduction of artificial fertilisers, they were one of the most sought after of all agricultural systems. Due to their long history the land management of floodplains such as along the Thames can still be detected through the physical landform, its archaeology, ecology and hydrology as well as through maps and cultural practices.

This rich natural habitat is not the case today. Extensively altered by river engineering and land drainage, 42% of floodplains in England have been separated from their river. Current estimates of floodplain land use in England and Wales indicate that nearly 70% is under intensive agricultural use whilst a mere 11% supports semi-natural habitats. Floodplain meadows are one of the rarest habitats in lowland Britain today. Only 1,100 hectares remain, which is smaller than the footprint of Heathrow.

GB05 Species rich meadow

The Floodplain Meadows Partnership is a long-term partnership set up in 2006 by a group of grassland academics studying floodplain meadows at the Open University. We use our research to provide evidence-based best practice for conserving and restoring species-rich floodplain meadows and demonstrate their value.

Long Mead meadow, Oxfordshire

Species-rich floodplain meadows are important not just because they are rare and beautiful habitats, but because they are a natural and sustainable agricultural system providing a range of public goods and ecosystem services. They have the natural ability to store and filter large amounts of surface floodwater, a vital ecosystem service that can reduce and delay flood peaks while slowing the speed of flood waves. This is crucial in light of increasing instances of extreme weather events and flooding across the UK, such as those seen recently. Well-structured floodplain meadow soils can absorb an extra 800 tonnes of water per hectare during a flood event for gradual release later, compared to a poorly structured soil. They also intercept and store rainfall, helping to recharge aquifers.

We have recorded up to 50 tonnes per hectare of sediment deposited on some floodplain meadows. On arable fields the sediment would run off back into the river, causing siltation and blockages, and taking those nutrients with it. Meadows help stop that process by first catching the sediment and then by absorbing the nutrients deposited into the hay crop so when the hay is taken off the meadow so are those nutrients. Our research shows around 6 kilograms per hectare per year of phosphorus can be exported in this way, so if floodplain meadow creation occurred at scale, it would go a long way to helping reduce the amount of phosphorus in our river systems.

Art work inspired by Long Mead meadow (Oxfordshire) on display at a Parliamentary Reception on the value of grassland, Oct 2024

Restoring these meadows aligns with the Environment Agency's "Working with Natural Processes" framework, which acknowledges the potential of such restoration efforts as effective nature-based solutions to climate extremes. However, despite their enormous potential, floodplain meadows remain underutilised.

The Thames Valley is a highly significant location for meadows, and the FMP work alongside Government, Statutory Agencies such as the Environment Agency, NGOs, landowners, farmers and local communities on conservation and land management throughout the catchment.

You can read more in our blogs about our involvement with the Ecover project in Oxfordshire and our work with farmers on 20-year floodplain meadow restoration strategy on the Windrush catchment. Please do head to our website, which has more info on floodplain meadows, including our free technical handbook which has a wealth of information about water, soils, plants and practical techniques and case studies on restoring floodplain meadows.

www.floodplainmeadows.org.uk
floodplain-meadows-project@open.ac.uk

Thames catchment NFM advice

Corrie Grafton
Project Manager, Thames NFM Advice
Wildfowl and Wetlands Trust

Natural flood management schemes delivered in the Thames catchment

In addition to the work that the Thames Valley Flood Scheme has been investigating, over the last 2 years the Thames Regional Flood and Coastal Committee has been working in partnership with Wildfowl and Wetland Trust (WWT) to fund and promote natural flood management in the Thames catchment.

WWT are providing expert advice to encourage the use of natural flood management in the Thames catchment so that it becomes a mainstream flood risk mitigation strategy.

With support from the Regional Flood and Coastal Committee and the Thames Flood Advisors, this collaborative project works to: engage and teach key stakeholders, fund the delivery of natural flood management projects, and increase and share knowledge on the benefits of natural flood management. Key stakeholders include Lead Local Flood Authorities, non-governmental organisations and community groups.

During the project, 21 natural flood management schemes were funded across the Thames catchment. These work to reduce flood risk in different ways including wetland creation, river restoration, water attenuation areas and leaky dams. These slow the flow of water helping to decrease flood risk in areas downstream. They also provide a number of biodiversity and social benefits to local communities.

Alongside the delivery of natural flood management projects, WWT ran events including webinars and site visits to help people learn more about the benefits of these flood management techniques, and how to use them. By working with landowners, the public and community support professionals at collaborative workshops, WWT were able to better understand why using natural flood management at a large scale is difficult.

Thames catchment NFM advice

The project has recently been extended until March 2027. The Thames Regional Flood and Coastal Committee has set aside an additional £1.2 million of levy funding to support new natural flood management schemes.

WWT completed a mapping exercise to identify waterbodies in the Thames area that are most at risk from flooding and also have the best opportunity to deliver natural flood management. Local authorities, non-governmental organisations, and communities in these key areas will get active support from a Natural Flood Management Advisor to create suitable plans for funding. Additionally, there will be more training events to help communities manage their flood risk and become better prepared for future climate changes.

To find out more about the Thames Regional Flood and Coastal Committee natural flood management programme and hear about the future funding opportunities please contact Corrie Grafton at WWT.

Natural flood management schemes delivered in the Thames catchment