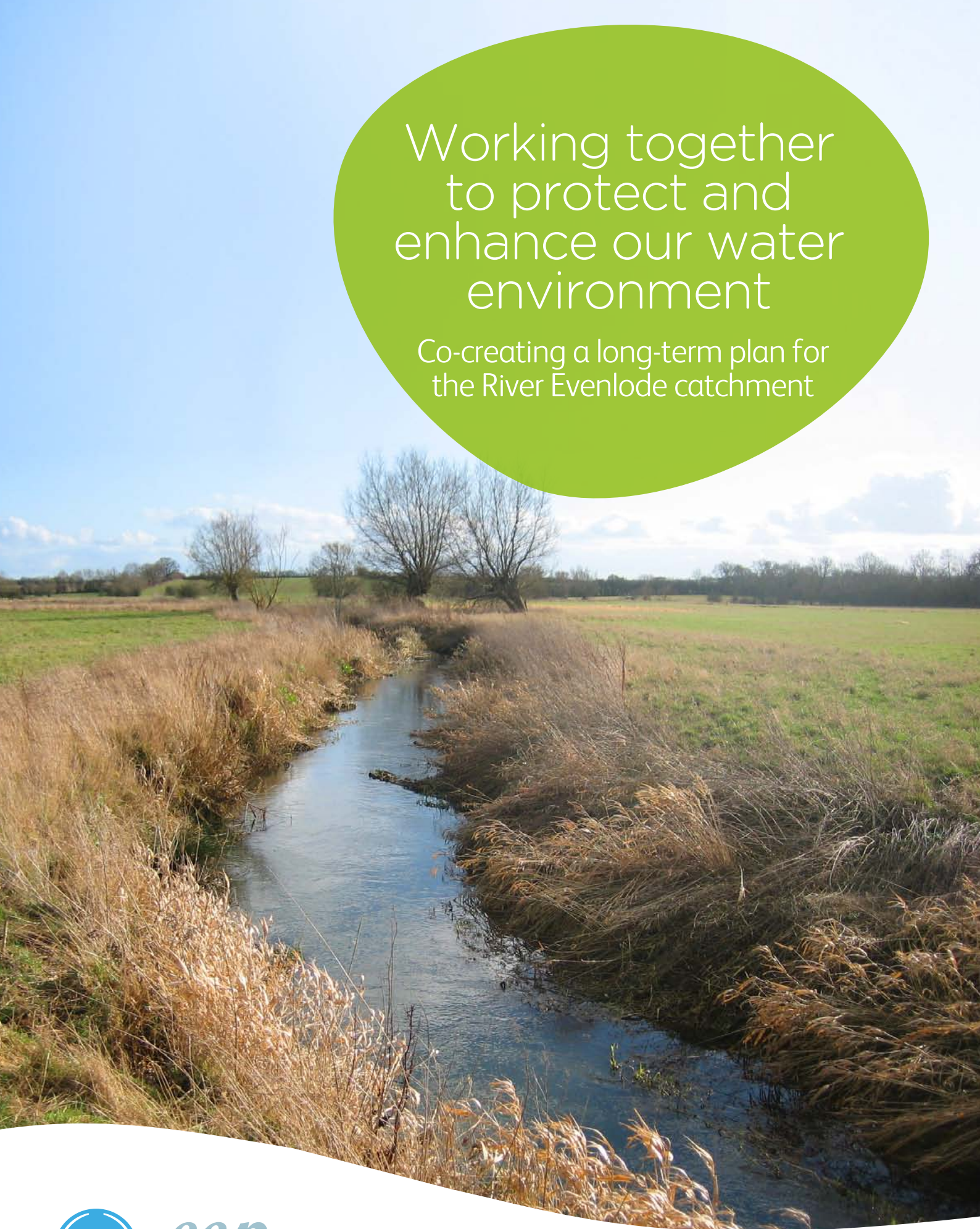
Working together to protect and enhance our water environment

Co-creating a long-term plan for the River Evenlode catchment



Working in partnership

Smarter Water Catchment Plan

March 2021

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Working together to protect and enhance our water environment

Cover photo: River Evenlode at Bledington

Foreword

Since joining Thames Water in September, I’ve been spending lots of time listening to and talking with colleagues, customers and stakeholders.

What’s really struck me is the passion and dedication we all share for protecting and enhancing our environment, and how, by working together, we can really make a difference to the quality of our rivers.

In 2018, we set out our ambition to work more closely with our local partners and communities to look after our river catchments. Called our ‘smarter water catchments’ initiative, it looks at the environment as a ‘system’ and sees us working together in partnership with others in the region to make bigger and better improvements than we could make as individual groups and organisations. We face significant challenges to improve the quality of our catchments, however there is so much more opportunity when we work together. We’re so excited about how this pioneering approach to catchment management sets a new direction for how we, and others, will manage our precious water cycle.

The River Evenlode is one of the headwaters of the River Thames, running through the rural communities of the Cotswolds. We’re committed to investing in our assets to build greater resilience and combat the unacceptable discharges of untreated sewage. These schemes will make a difference, but there is so much more we can and need to do to protect this precious resource for current and future generations.

This joint catchment plan for the River Evenlode outlines our actions for the next ten years. I want to say a huge thank you to all the stakeholders who have worked with us to create it and to make sure it’s the right one for the future of the wonderful River Evenlode. I can’t wait to work with you as we restore this river catchment to a condition we can all be proud of.

Sarah Bentley
Chief Executive Officer,
Thames Water

A message from our partners

The Evenlode Catchment Partnership (ECP) was established with the Environment Agency in 2014 to help local people and organisations work together to improve river water quality, enhance biodiversity, improve flood management and resilience to climate change and, build greater community engagement with the river and its tributaries.

Partnership members are drawn from a diverse range of backgrounds including our communities, farmers and landowners, river users, consultants, academia, statutory agencies, local authorities and NGOs. The ECP is hosted by a local charity Wild Oxfordshire.

The ECP partners have a long track-record of developing and delivering real-world improvements in the catchment. Notable successes include river channel re-engineering, an ongoing and increasingly expert programme of community-based water quality monitoring, extensive natural flood management measures and work to reduce agricultural pollution through regenerative farming techniques.

By strengthening our partnership with Thames Water, the 'smarter water catchment' initiative offers the ECP an opportunity to build these community skills, understand better and find solutions to the problems that affect water quality and develop new relationships with landowners. Together this will help the ECP achieve its long-term goal of bringing the Evenlode back to good ecological condition - a river and landscape that truly merits its place at the heart of our community.

Nick Mottram
Chair, The Evenlode Catchment Partnership

For more information on this plan, or to work with us, please contact partnerships@thameswater.co.uk or visit the ECP website

Citizen Science techniques to monitor water quality

Introduction

Catchment management can offer better value and greater benefits than more traditional hard-engineered solutions. However, it's usually restricted to an individual organisation working to address a single issue, such as pesticide run-off from agricultural land into local rivers.

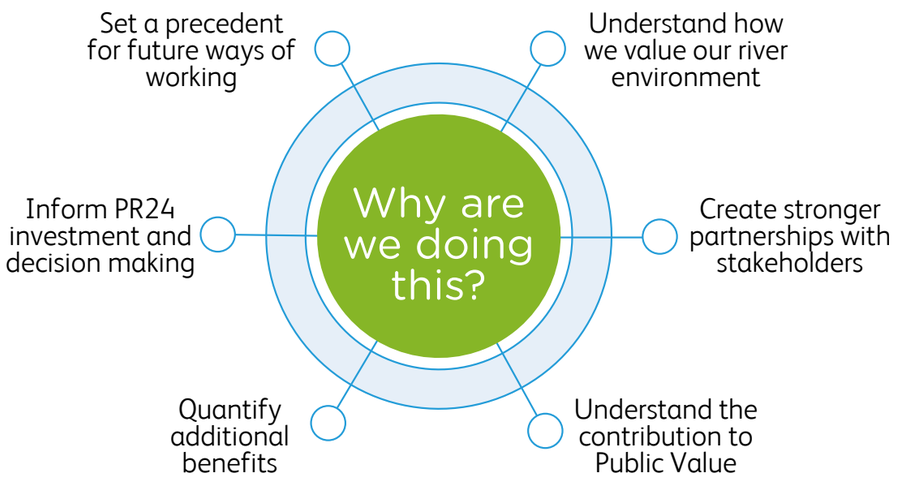
We believe we can achieve more by taking a systems-based view of the environment, collectively addressing multiple challenges and co-delivering solutions that make the most of opportunities on an even bigger scale. This is the premise of our 'smarter water catchments' initiative.

We're putting this approach into practice to understand how we can achieve key benefits while working in a more holistic way. The first step on this journey is to co-create a catchment plan with key stakeholders who either operate within this environment and/or have a vested interest in protecting and enhancing it.

This document, which has been written in partnership with our stakeholders, outlines our approach and sets out the actions which we'll collectively deliver over a 10-year time period, starting next month.

Between 2020 and 2025, we'll use a bespoke performance commitment to measure our progress with our regulator Ofwat. To be as transparent as possible, we'll provide annual updates on our progress and share any benefits we achieve.

Purpose of our new approach



Working in partnership

Managing the water cycle in England and Wales is a responsibility divided amongst several organisations, all with varying regulatory systems, funding mechanisms and external drivers. But there are also thousands more user groups and businesses that depend on, benefit from, and interact with water on a daily basis.

This creates a somewhat disjointed approach to planning, making it much harder to maximise the value of the work we do individually. To overcome these hurdles, we must work together.

Working within the framework of the Environment Agency's 'catchment based approach' provides us with an opportunity to put this into practice. It brings together partnerships made up of government, local authorities, water companies, environmental and community interest groups, academia and local businesses at the river catchment scale, all working towards a shared vision.

Within the Thames region, there are already over 400 stakeholders involved in the 27 established partnerships operating within this framework. However, these partnerships all vary in capacity and often depend on uncertain sources of funding.

By drawing on the collective understanding of all partners and bringing together expertise across different specialisms, we can create more robust, joint plans for the future. We'll also keep local communities up to date with our progress and encourage them to join us in delivering our plans.

We must all play our part in protecting and enhancing this precious resource for the future.

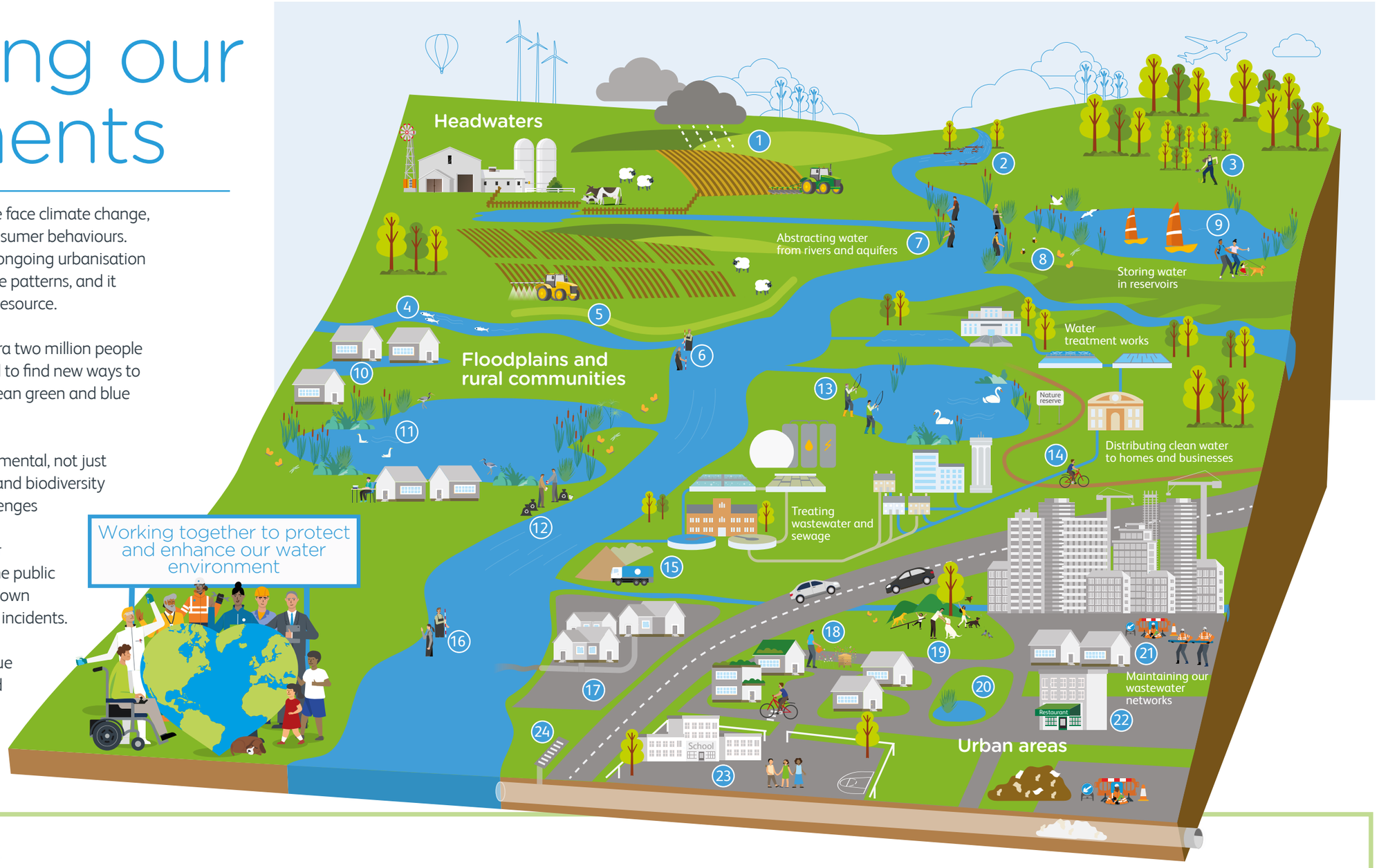
Managing our catchments

Water is more precious than ever as we face climate change, population growth and changes in consumer behaviours. Add in more extreme weather events, ongoing urbanisation and a fundamental shift in our land-use patterns, and it becomes even harder to manage this resource.

By 2045, we estimate they'll be an extra two million people living in the Thames region. We'll need to find new ways to meet their growing expectations for clean green and blue spaces to enjoy.

The water quality of our rivers is fundamental, not just for our customers but for the habitats and biodiversity of species that depend on them. Challenges around our ageing infrastructure and in some cases, outdated designs of our wastewater systems, combined with the public misconception of what can safely go down drains, can lead to unwanted pollution incidents.

We must take action to share the value of water and work with upstream and downstream users across our region to protect our river catchments for the future.



Opportunities

We're working closely with our partners to understand the challenges we're facing and uncover new opportunities to address them. In many cases, this will lead to activities that also meet the individual priorities of the organisations involved.

We're identifying opportunities across our catchment from headwaters, floodplains and rural communities through to our urban areas. The opportunities could include:

Headwaters

1. Working with farmers to reduce soil run-off
2. Using Natural Flood Management processes
3. Planting trees to reduce the risk of flooding
4. Improving fish passage
5. Managing pesticide and herbicide run-off
6. Monitoring water quality for diffuse sources of pollution

Floodplains and rural communities

7. Restoring and naturalising rivers
8. Rewilding our river corridors and enhancing biodiversity
9. Managing water resources for public value and recreation
10. Protecting homes from flooding
11. Creating natural carbon sinks
12. Making river corridors safe and clean
13. Protecting Sites of Special Scientific Interest
14. Improving accessibility
15. Returning water to rivers and solids to land

Urban areas

16. Monitoring water quality for point sources of pollution
17. Ensuring drainage is not misconnected
18. Creating innovative green spaces
19. Increasing access to blue/green spaces
20. Introducing Sustainable Drainage Systems (SuDS)
21. Connecting new developments
22. Correctly disposing fats, oil and grease
23. Raising awareness through education
24. Managing highway runoff

Creating a ‘smarter water catchment’

Over the last few years, we’ve been looking for the best way to deliver a step change in holistic catchment management. We’ve now created a new methodology to help us achieve this.

Working together to protect and enhance our water environment

Vision

To build better functioning river catchments

considering the most effective solutions

without negatively impacting the environment

Strategy

Evidence-based

Identifying the most appropriate course of action through data collection, monitoring and analysis

Partnership-led

Working in a unified way with a diverse set of committed stakeholders

Catchment-wide solutions

Applying a ‘systems thinking’ approach to address multiple challenges holistically

Outputs

Long-term plan

Creating a 10-year delivery plan together for each selected catchment

Annual partnership actions

Identifying key activities for delivery by all participants

Catchment-wide solutions

Delivering solutions that achieve multiple benefits

Outcomes

Protecting and enhancing the environment

We’ll plan appropriate interventions over a longer timescale to realise environmental benefits and safeguard our most precious resource.

Prioritising our partnership objectives

Each catchment will have a unique ambition and set of objectives that are locally appropriate – and we’ll deliver these by working together.

Embedding our approach in water industry planning

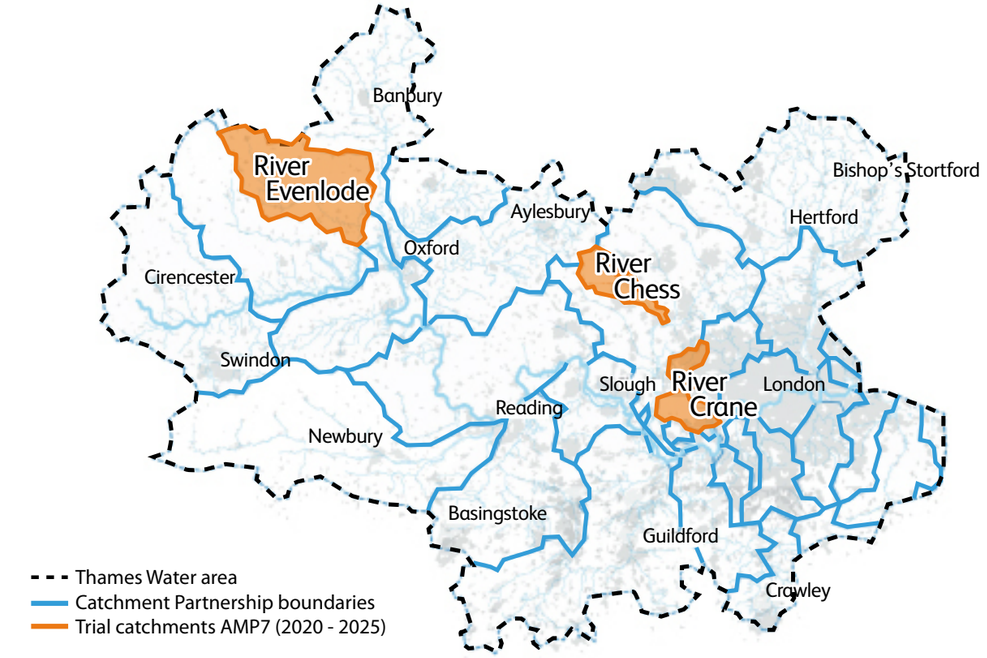
We’ll create a sustainable management model that understands the scale of benefits we can achieve, setting a precedent for future ways of working.

Putting it into practice

We’ve identified three trial catchments. They all have varying challenges that are representative of those found across our region:

- River Evenlode, Oxfordshire
- River Chess, Buckinghamshire
- River Crane, West London

To understand how we can best protect and enhance these areas, we’ve applied our new methodology to each of them. Working through the ‘catchment based approach’ framework, we’ve engaged with hundreds of stakeholders across each catchment to encourage them to take part in this initiative.



Each partnership, of which Thames Water is one part, has identified a set of key themes that underpin the unique challenges within each catchment. These key themes have influenced our joint objectives, which we’ll work together to achieve over the next 10 years.

Collectively, we’ve created a bespoke plan that identifies all the milestones we need to hit to make this happen. We’ve also included subsequent year-on-year actions that we’ll undertake to meet these milestones.

Over the next four years, we’re investing £3 million in each catchment to trial this initiative. This is the seed funding we need to set up new and improved governance frameworks, financial models and delivery roadmaps to ensure we meet our objectives.

River Evenlode catchment planning

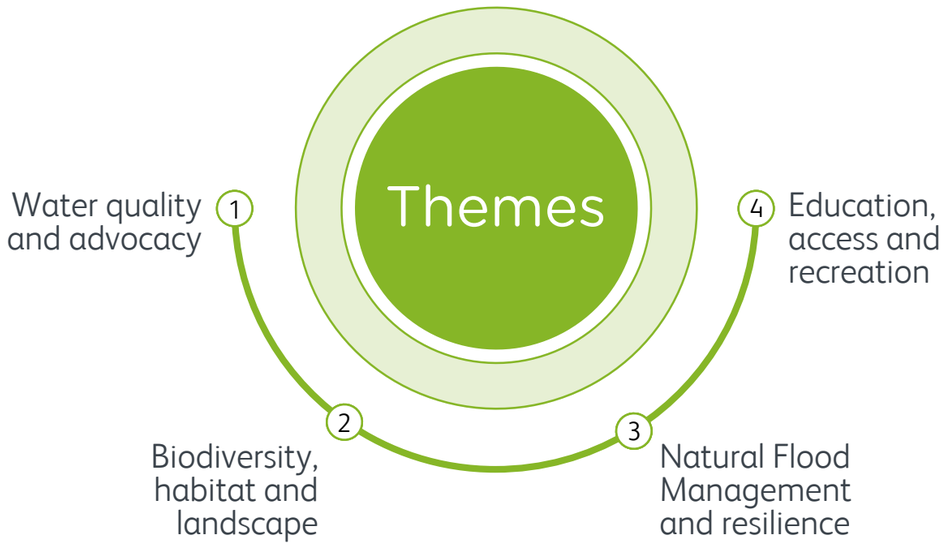
Following the flow of the River Evenlode

The River Evenlode rises out of the limestone that underlies the Cotswolds, flowing south-east towards the clay vales of the River Thames. The catchment contains 18 waterbodies, including the Evenlode, as well as the major tributaries Glyme and Dorn.

The landscape in this catchment is some of the finest in the country, forming part of the Cotswolds Area of Outstanding Natural Beauty (AONB), the remains of the ancient Royal Hunting forest of Wychwood and the World Heritage Site of Blenheim Palace. There are many historic market towns nearby, such as Chipping Norton, Moreton-in-Marsh and Woodstock. Habitats include oak-ash woodland, limestone grasslands, lowland meadows and fen, which support a wide range of wildlife.

Despite this beautiful setting, the River Evenlode is currently failing to meet Good Ecological Status (GES) as defined by the Water Framework Directive (WFD). Poor water quality, particularly high phosphorus loadings from point and diffuse source pollution, and physical damage to habitat (including barriers such as weirs) are the primary reasons for these failures. This is reducing the diversity of wildlife as well as the number of fish and macrophytes living in our river.

River Evenlode strategy



Building an action plan

The Evenlode Catchment Partnership has developed a strategy based on four key themes. Everyone was able to share their thoughts and ideas as we dived into each theme, building an action plan that can help us deliver key benefits and improve the overall river environment.

Moving forwards, we'll underpin this plan with robust monitoring and data and evidence collection while encouraging inclusive communication across the catchment and reviewing and refining it periodically.

Visualising the ECP strategy

Water quality and advocacy

Reducing phosphorus levels

In the latest WFD assessment (2019), none of the 18 waterbodies in the catchment achieved 'good' ecological status, largely due to high phosphorus levels.

Phosphorus is a common component in the organic waste of sewage and industrial effluent. It's also present in agricultural fertilisers and manure. While it's essential for plant life, too much of it can reduce levels of dissolved oxygen, which is needed for a healthy river environment.

According to the Environment Agency's Source Apportionment Geographical Information System (SAGIS), the average phosphorus contribution from sewage treatment works (STWs) is 65%. Right now, phosphorus removal is only part of the sewage treatment process on the Glyme and Dorn tributaries.

During bad weather, heavy rainfall combined with groundwater infiltration and/or an inadequate STW storage capacity, can result in more phosphorus entering rivers through untreated discharges. A smaller amount of phosphorus (around 28%) also enters rivers, along with silt, because of diffuse agricultural pollution.

The high phosphorus concentration in the river leads to eutrophication, enriching the water causing algal blooms in the late spring and summer. This is likely to cause periods of high turbidity (cloudy water) during low summer flows, affecting the quantity and diversity of macrophytes, invertebrates and fish. We've seen the impact of this much more frequently in recent years. In periods of high flow or physical disturbance, such as after a storm, phosphorus can also be remobilised from river sediments.

We want to work collaboratively to support ecology across the catchment and make sure the River Evenlode can achieve GES. However, we recognise that more investment will be required to achieve this.

We'll work towards this by:

- Increasing water quality monitoring
- Refining our understanding of root causes
- Increasing awareness through advocacy
- Campaigning for sufficient and additional investment
- Identifying and implementing new solutions to address the problems

13 Downstream of Ashford Bridge, North Leigh

Biodiversity, habitat and landscape

Protecting local wildlife and habitats

Water quality issues, changes in land management and river engineering can all impact our biodiversity.

In the past, the River Evenlode has undergone extensive dredging activities for flood defence and land drainage purposes. Some sections have been over-deepened and moved from their natural alignment within the floodplain. Weirs and other man-made structures left over from past industrial use block the passage of fish and reduce their access to spawning grounds. These modifications have resulted in the river being disconnected from the floodplain for much of its length. Although there are riffles (areas of shallow water) along the course of the river, it's mostly a uniform channel and steady flow, with limited riverbed variation and much fine sediment.

Natural flood meadow habitat is rare, and much of the valley floor has been converted to arable land. In flood conditions, arable land is where soil and nutrient losses are greatest. This negatively impacts the ecology of the river and its banks and can exacerbate flooding downstream.

While the distinctive landscape is recognised as being internationally important through its designation as an Area of Outstanding Natural Beauty, it's still a landscape in decline.

Along the riverbanks, there are several lost, gappy or poorly managed hedgerows and trees. In many places, wire fencing replaces traditional stone walls. Ancient grasslands are rare and isolated, making them difficult to manage, while wet meadows have been drained or ploughed. A combination of ash die back and poor management has led to a loss of woodland habitat

Building on the Environment Agency's Evenlode river landscape restoration project, we want to further develop a programme that will enhance biodiversity and improve our river's physical habitat and ecology.

We'll achieve this by:

- Removing or providing fish easement to barriers in the main rivers and tributaries
- Reconnecting the river with its natural flood plain and changing floodplain management to land uses (e.g. meadows, wet woodlands), which will slow overland flows and reduce the nutrient and soil loss into the river
- Cultivating a rich, biodiverse landscape through various new and existing schemes and incentives
- Monitoring and evaluating changes in biodiversity

Natural Flood Management and resilience

Protecting local homes and businesses

There are several rural communities at risk of flooding within the Evenlode catchment. Land management, soft engineering approaches and river restoration interventions will help us to slow and temporarily store overland flows and increase infiltration into the soil. These measures will also help us to improve water quality and biodiversity and align with the ambitions of the Flood and Coastal Risk Management Strategy and Carbon Zero 2030.

We'll engage with communities and landowners within the Evenlode catchment to develop a landscape-scale vision and strategy, which will include natural flood management (NFM) techniques. We'll develop a range of projects across the catchment, including river and floodplain reconnection, NFM interventions and land management changes. The scale of projects will range from small-scale channel, riverbank and floodplain interventions through to large-scale reconnections of the valley floor. We'll also implement land management changes, including hedgerow and cropping/cultivation technique adjustments as well as whole farm system changes.

Building on the Environment Agency's NFM pilot project at Bruern Estate and wider NFM programme, this will help us to understand the effectiveness of different measures. We'll also build on our established consultancy and academic links, which we've been using to monitor and model the tributary trial area, plus expand our community Citizen Science engagement.

We'll achieve all this by:

- Integrating NFM solutions within our landscape-scale vision
- Communicating NFM solutions and the potential benefits (natural capital/ecosystem services) to local communities, stakeholders and wider audiences
- Working with landowners to sustainably deliver NFM within agricultural business

15 Bruern Estate

Education, access and recreation

Encouraging communities to embrace the Evenlode

The River Evenlode is home to a number of engaged communities, but there's a concern that people are becoming increasingly disconnected from the water environment. People living locally or in the surrounding areas could enjoy significant benefits to their health and wellbeing by engaging with the environment around them. Deeper connections and interactions with the river will also encourage everyone to value and take care of this precious resource.

We plan to develop a bespoke programme of activities to show the relevance of the river and its catchment within the community.

This will include:

- Promoting physical health activity in a high-quality environment
- Improving access to nature to maintain and improve mental health
- Encouraging communities to participate in environmental activities, supporting nature recovery and acting on climate change
- Understanding how the 'smarter water catchments' programme protects communities from flooding and see the river reconnected to the floodplain
- Promoting sustainable living with products from the Evenlode Valleys landscape, such as locally grown food
- Organising knowledge exchange events across the catchment

It's also fundamental that we educate the next generation by delivering bespoke activities to primary and secondary school pupils, as well as giving the right skills to teachers through 'train the trainer' days.

We'll structure and deliver an Evenlode Education Programme based on three key aims:

1. Connect:
   To help schools access and visit their local stretch of the Evenlode River
2. Educate:
   To provide educators with information, resources and skills to teach people of all ages about the Evenlode River and its catchment
3. Act:
   To enable young people and their teachers to take positive action to care for, and ecologically improve, the River Evenlode

Our shared long-term plan

The collective vision for the Evenlode catchment

We want to achieve our ambition of good ecological status across the whole catchment. To do this, we must reverse the degradation and fragmentation of our habitats and species, historic landscapes and freshwater bodies.

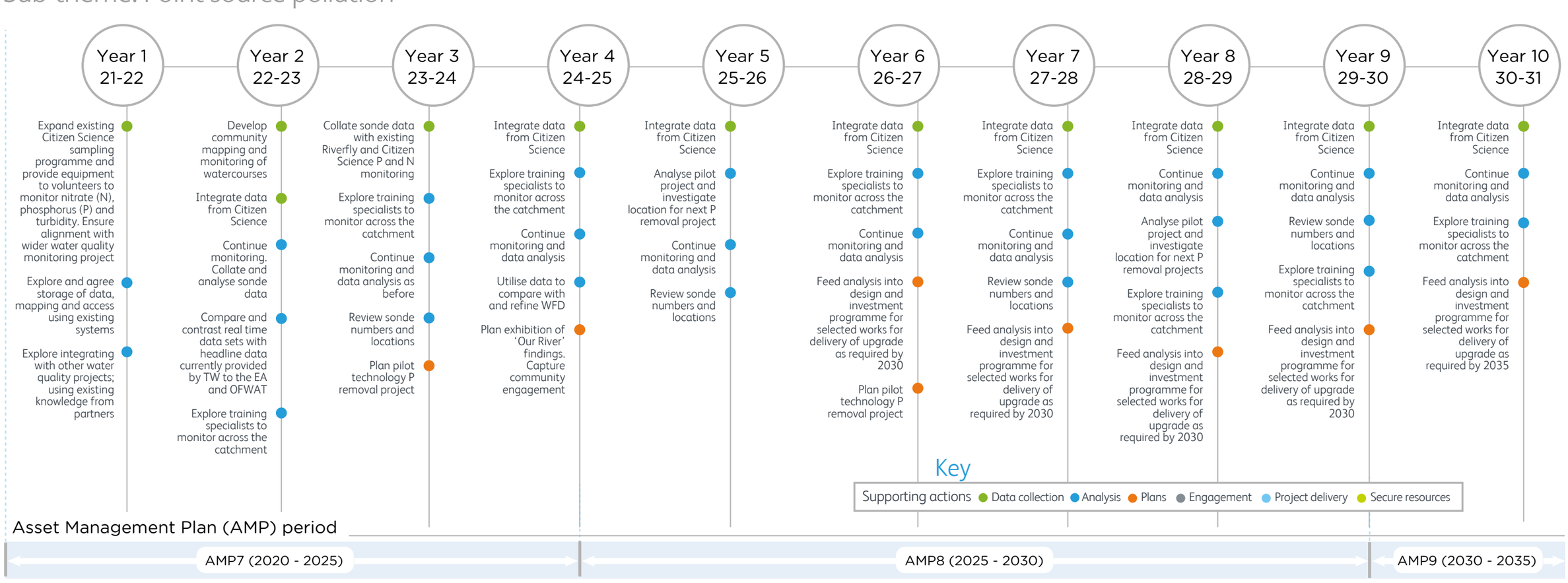
The combined pressure of climate change and the rapid growth of rural settlements makes reaching this goal harder. More extreme weather events also increase the risk of flooding or untreated sewage spills. We need to work closely together to tackle these new challenges.

We'll engage with local communities, landowners and stakeholders to improve connectivity throughout the catchment and share experiences, solutions, expertise and culture.

We'll also expand our monitoring and data collection for water quality and biodiversity, using evidence to drive change, deliver restoration projects, enhance ecosystem services and reset attitudes.

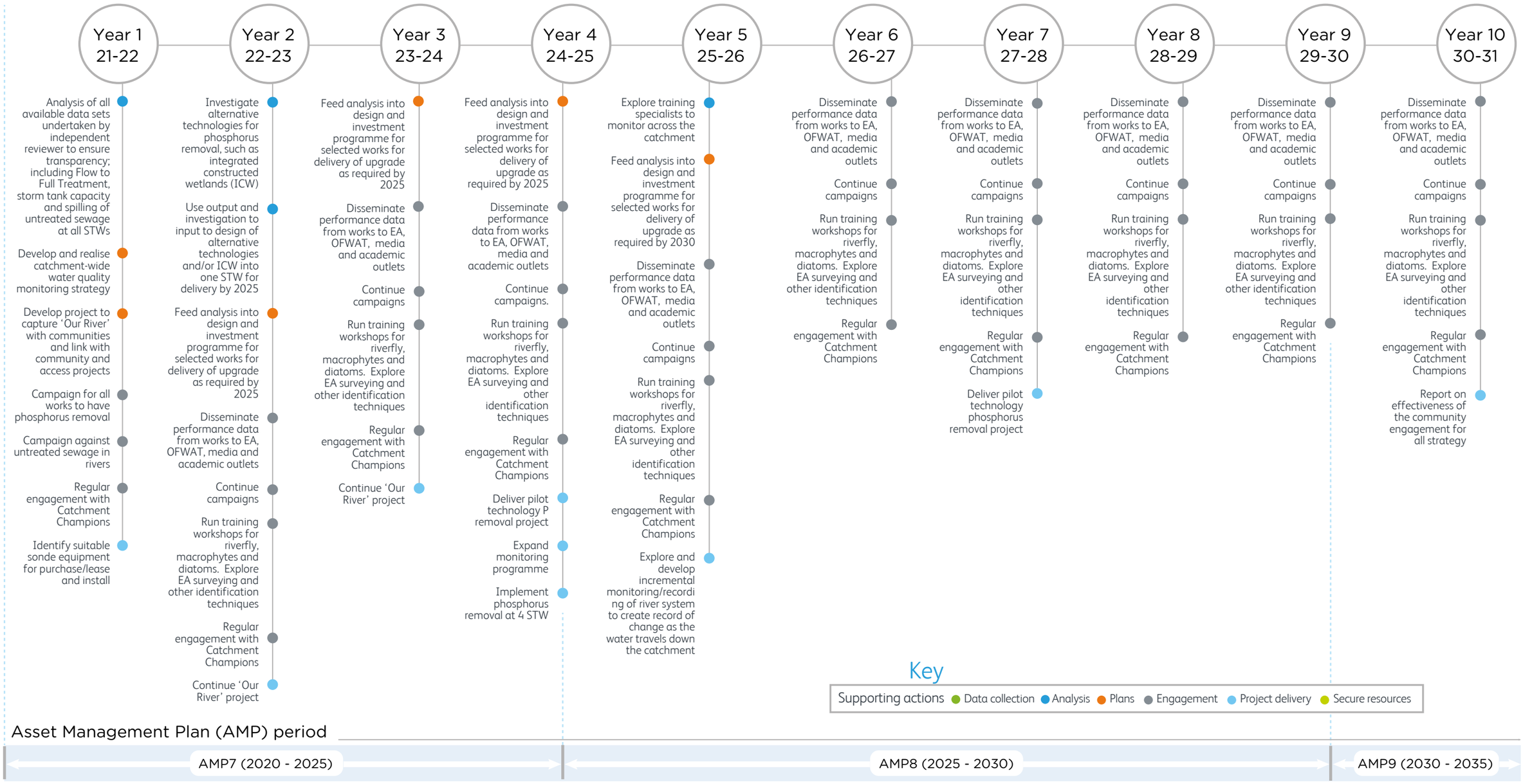
Water quality and advocacy action plan

Sub-theme: Point source pollution

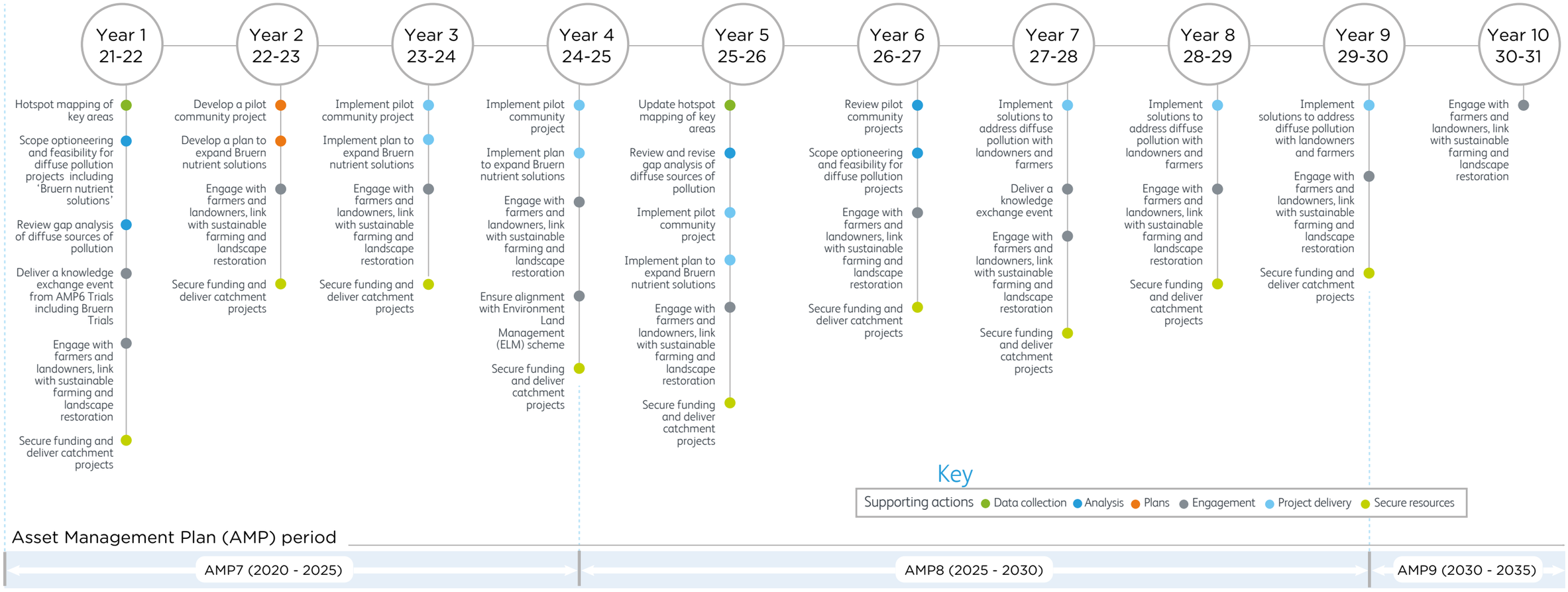


Working together to protect and enhance our water environment

Sub-theme: Point source pollution

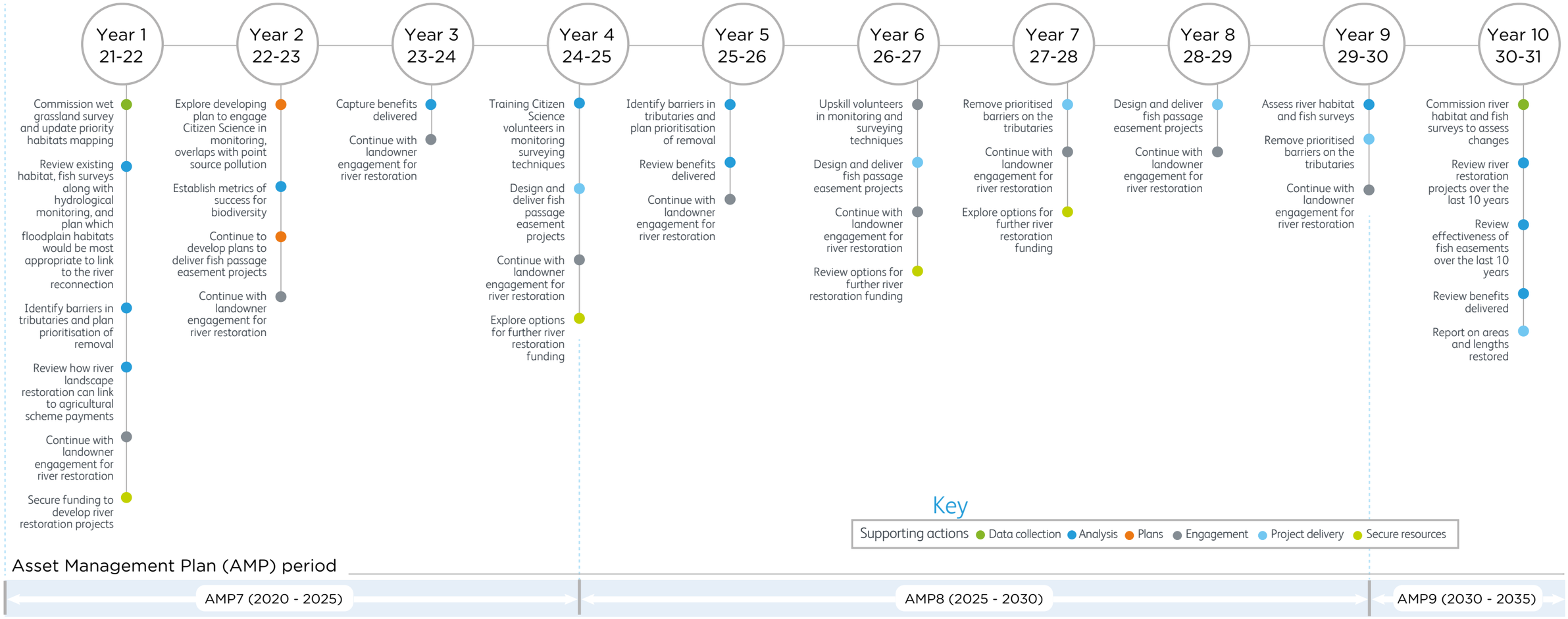


Sub-theme: Diffuse pollution

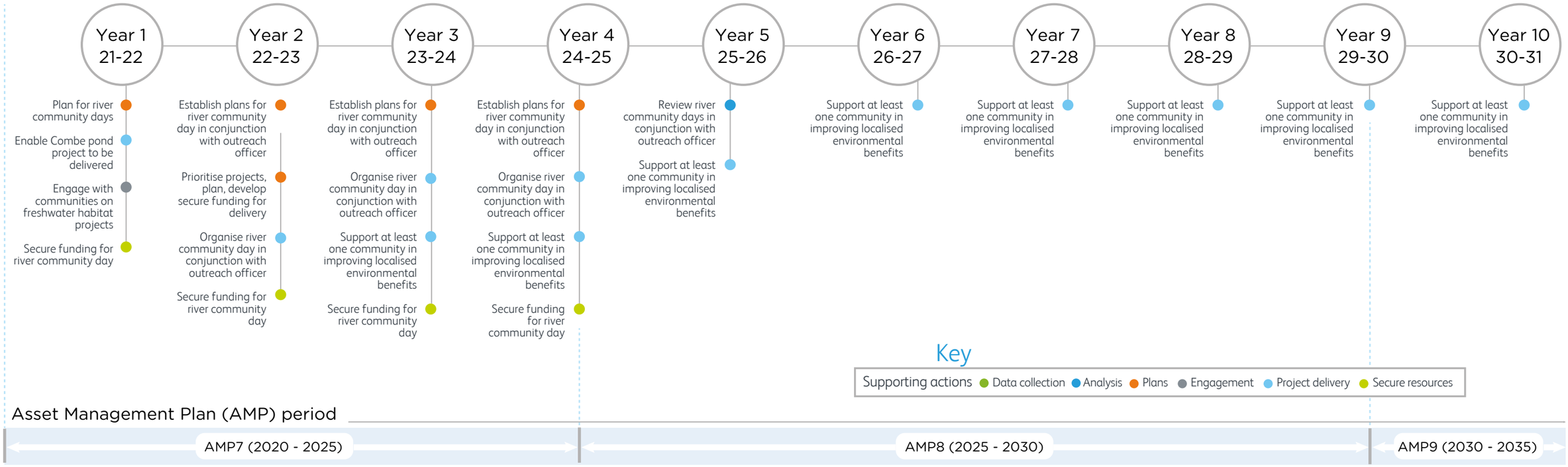


Biodiversity, habitat and landscape action plan

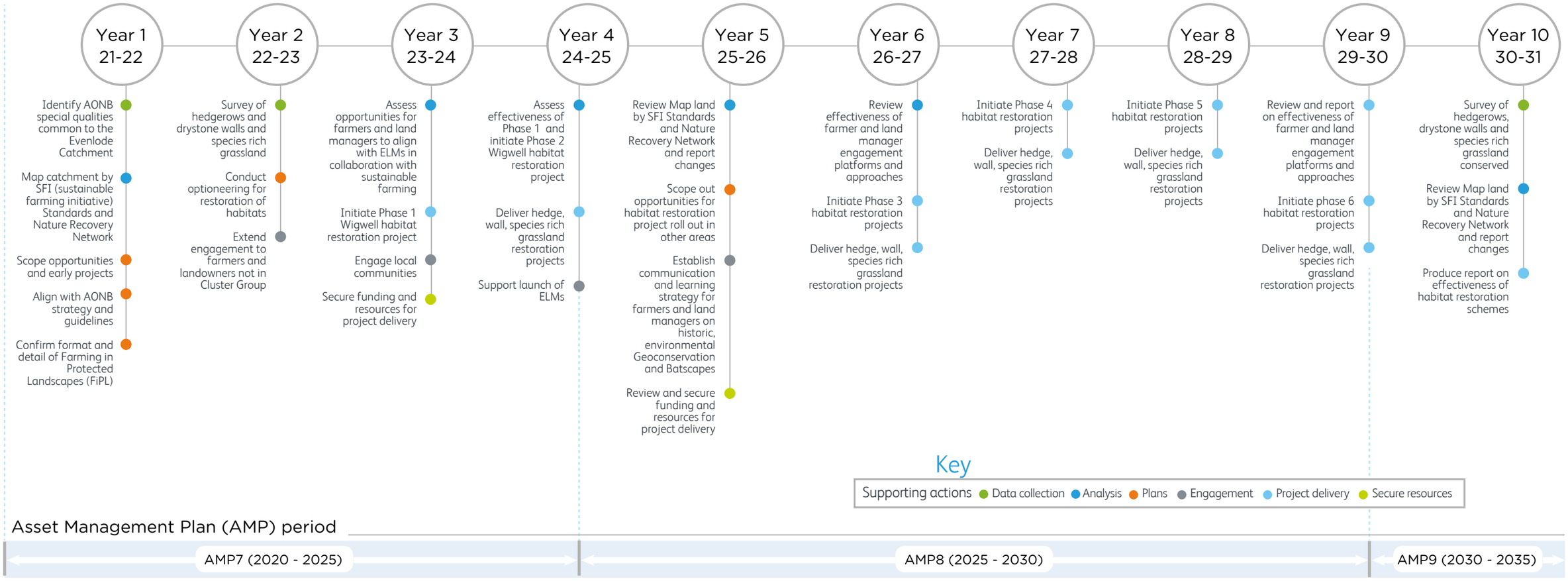
Sub-theme: River and floodplain restoration



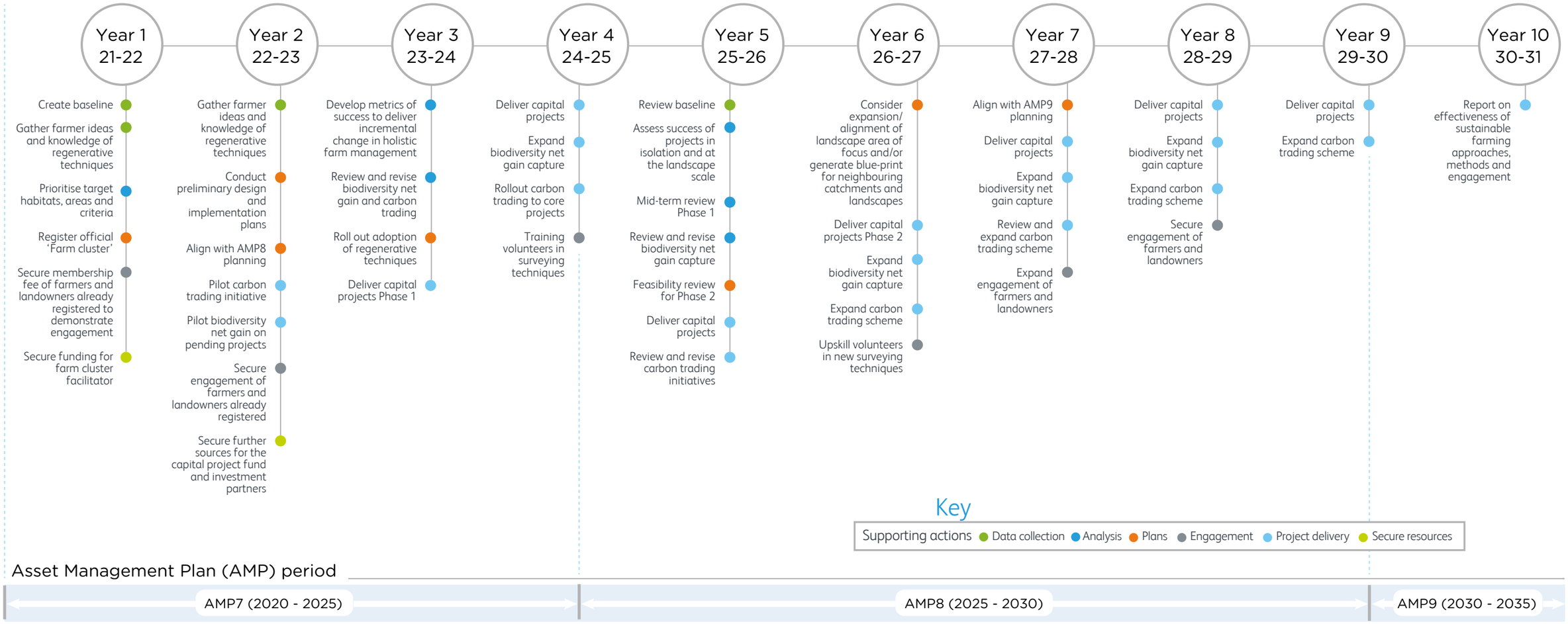
Sub-theme: Community



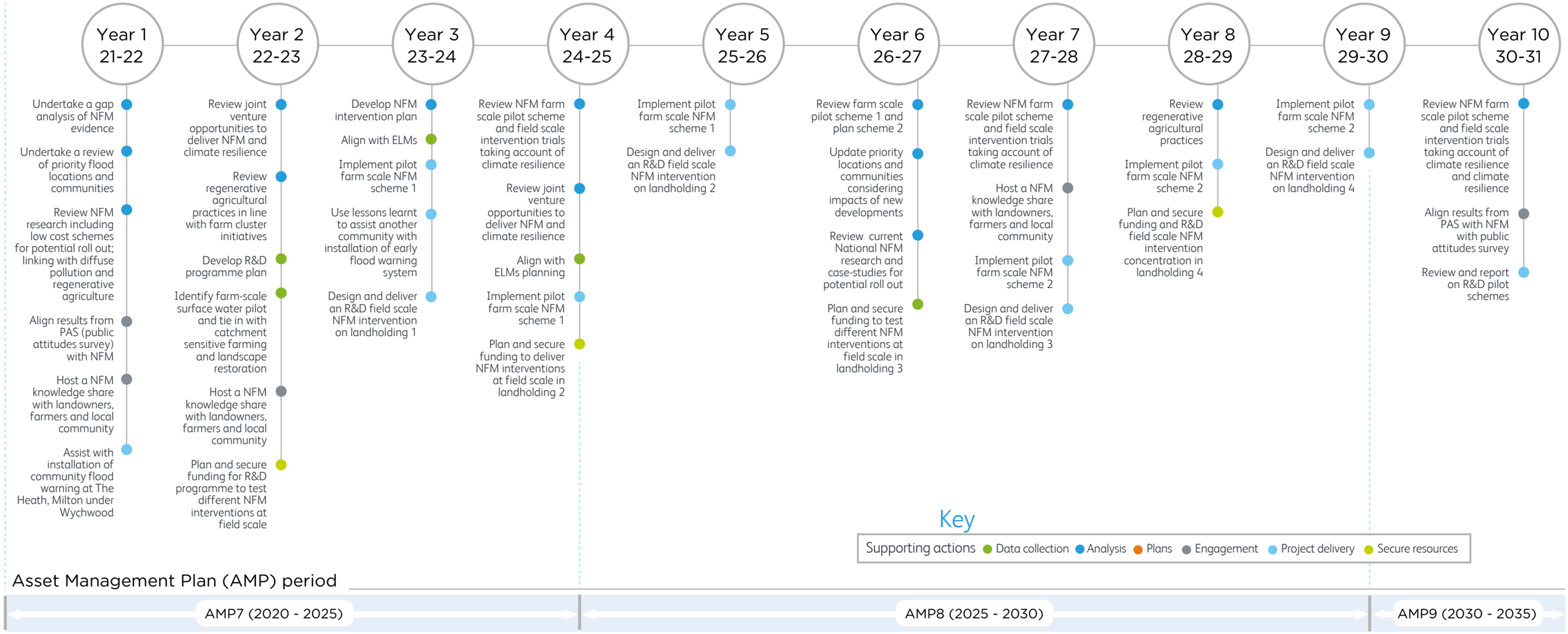
Sub-theme: Landscape restoration



Sub-theme: Sustainable farming

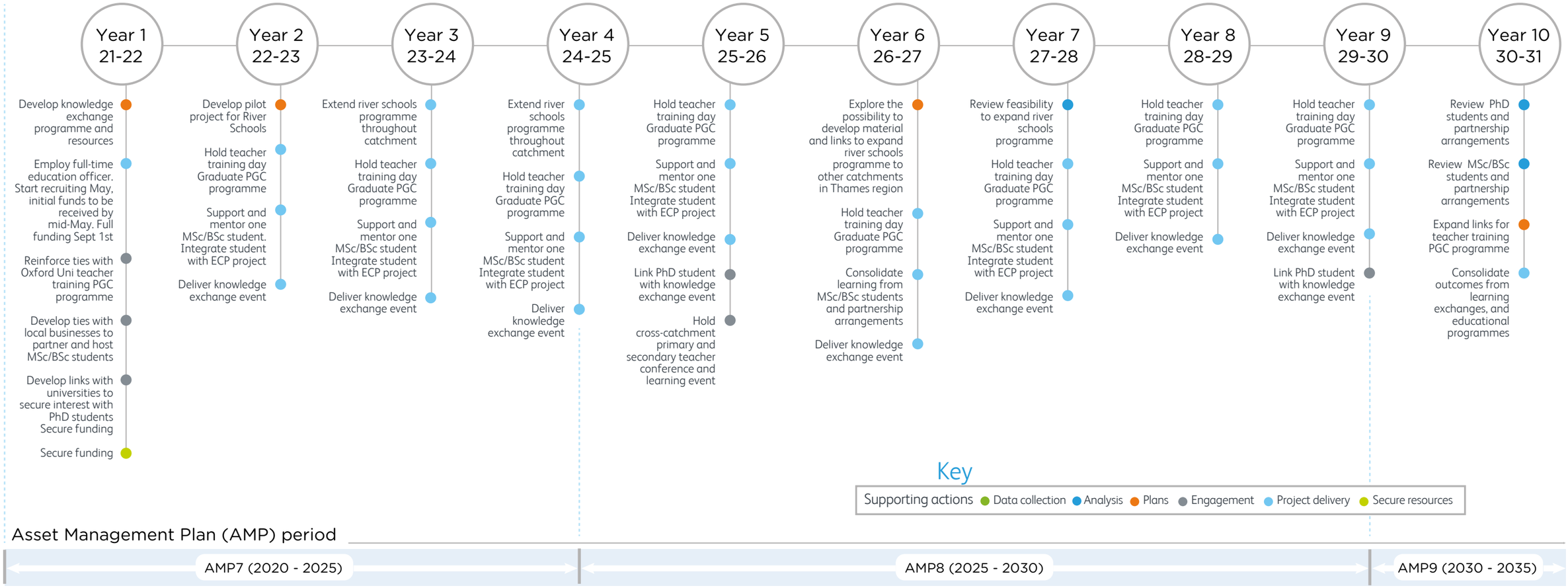


Natural Flood Management and resilience action plan

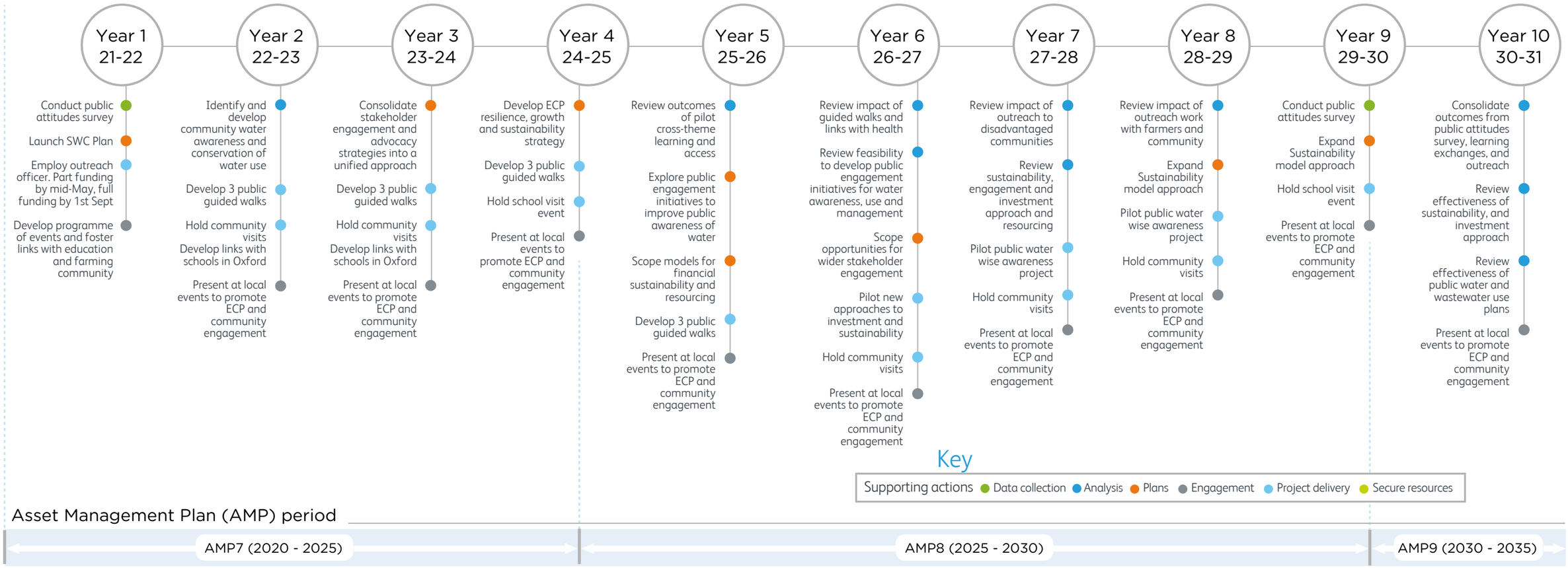


Education, access and recreation action plan

Sub-theme: Education



Sub-theme: Community, access and recreation



Achieving multiple benefits

We can't assess nature-based solutions using the same methods and cost-benefit calculations as we would to justify investing in hard-engineered infrastructure. This is because they provide many more benefits to local communities and user groups across the catchment and beyond.

Across the industry, there's been a huge drive to create new assessments and use the right tools to demonstrate the value these solutions can add. So far, evidence is limited, and one single approach is yet to be adopted for the mainstream price review process.

We believe a collaborative and cross-sector approach will deliver multiple environmental, social and financial benefits. So, while we deliver our catchment plans, we'll collect as much evidence of this as we can using an agreed set of criteria across the whole programme. We'll shape these criteria using input from several sources, and wherever possible, seek to quantify our success.

Collecting this evidence will help us to demonstrate the value of our approach as well as:

- Identify which measures are most effective to achieve benefits
- Help our partners assess their progress in achieving their own objectives
- Provide the water sector with an increased understanding of the potential that partnerships can offer when making investment decisions

We'll finalise the criteria at the start of the programme and provide annual updates on our progress.

Next steps

From April 2021, we'll begin to deliver the Year 1 actions of our 'smarter water catchment' plans.

For each catchment partnership, we've established a new project steering group made up of representatives from different organisations and sectors, and chaired by the catchment host organisation. They will oversee the delivery of our goals and drive forward our overall approach.

We'll set up relevant sub-groups to draw in subject matter experts and enhance the progress that can be made. Wherever possible, we'll exchange knowledge and best practice across the whole programme to identify the most efficient and effective ways of working.

Our initial investment of £3 million in each catchment will make a huge difference, but our partnership members will also seek additional funding and resources and capitalise on external opportunities wherever possible to deliver our joint aims.

While we're keen to get going with our plans, understanding the most effective governance structures and financial models will also be a key priority over the next year to enable our new way of working.

If you'd like to help us make a step change and care for water across this catchment, we'd love for you to join in.

ECP meeting at Combe Mill

Acknowledgements

Thames Water would like to thank all of the organisations and individuals representing the partnership who have contributed their valuable technical inputs, insights and time during the process, through various forums and engagement platforms, to enable the joint development of this plan. We greatly appreciate the commitment and enthusiasm expressed to achieve this vision and look forward to working together to deliver the plan.

The information provided to develop this plan is correct as of 31st March 2021, and has the formal support of key stakeholders.

Partners

Atkins
Berks Bucks and Oxon Wildlife Trust (BBOWT)
Blenheim Palace and Estate
Catchment Champions'
Centre for Ecology & Hydrology (CEH)
Cotswolds AONB
Cotswolds Conservation Board
Cotswolds Rivers Trust
Daylesford
Earthwatch
Environment Agency
Evenlode Catchment Partnership members
Farm-Ed
Farming and Wildlife Advisory Group - South West
Forestry Commission
Natural England
Oxfordshire County Council
RSK
Sylva Foundation
Thames Valley Environmental Records Centre
University of Oxford
Upper Thames Fisheries Consultative
West Oxfordshire District Council
Wild Oxfordshire
Windrush AEC
Wychwood Project

Special thanks to

Ann Berkeley
Daryl Buck
Neil Clennell
Mark Connelly
Tim Field
David Gasca-Tucker
Jen Hurst
June Jones
Jo Leigh
Vaughan Lewis
Leticia Miguel-Chinchilla
Anne Miller
Jola Miziniak
Nick Mottram
Rosie Nelson
Jo Old
John Pratt
Mark Purvis
Kesella Scott-Somme
Simon Smith
Helena Soteriou
James Webb

Photography

- Front cover photo taken by Jo Old, Environment Agency
- Pages 2 and 6 photos taken by Thames Water
- Page 4 photo taken by Earthwatch
- Page 13 photo taken by Ann Berkeley, Wild Oxfordshire
- Pages 15 and 39 photos taken by David Gasca-Tucker, Atkins

Working in partnership

We welcome your views on this ‘smarter water catchment’ plan. Please share them with our dedicated team via partnerships@thameswater.co.uk.