



Evenlode Catchment Partnership
Second Annual Report on the Smarter
Water Catchment initiative 2022- 2023



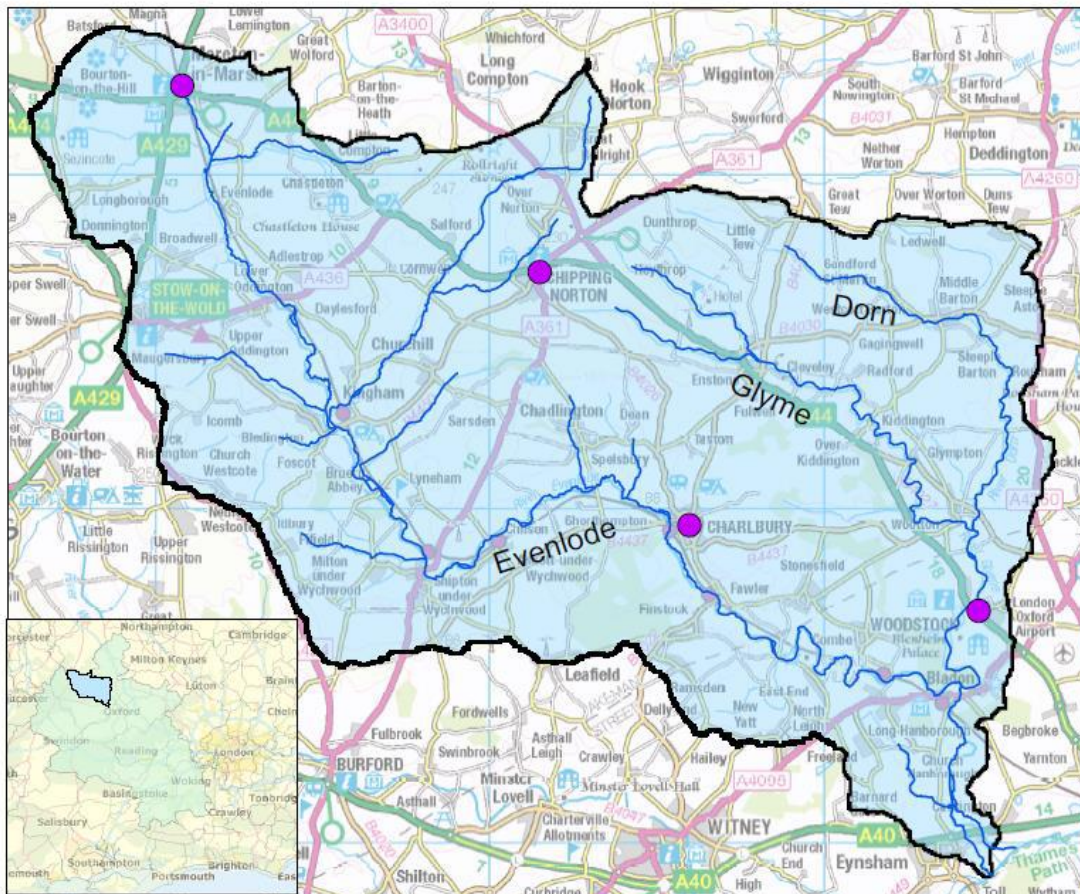
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This document has been created for the purposes of the Evenlode Catchment Partnership. This document will be made available to all partners associated with the project, in line with the true partnership ethos. The work detailed in this report is based on the information available at the time. Any findings and/or recommendations will inform future phases of the project.

Evenlode Catchment

- Major Urban Areas
- WFD Rivers
- Evenlode Catchment



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Chairman's Report

Welcome to the second annual report on the Evenlode Catchment Partnership's (ECP) work in our Smarter Water Catchment (SWC) partnership programme. The SWC programme operates across four main themes: water quality, biodiversity habitat and landscape, flooding and, education and outreach and the ECP partners were active in all these areas.

Water Quality remains a key issue for the Partnership. The work of our citizen scientists, led by Earthwatch, supported by automated water quality monitoring technology continues to highlight the significance of phosphate discharges from the catchment's Sewage Treatment Works in limiting river water quality. Resolving this is a long-term challenge for Thames Water and beyond the scope of the SWC programme alone.

The Partnership were pleased to be able to help develop and support a number of water-related biodiversity improvement projects ranging from river restoration to wetland creation, fish spawning and the provision of sustainable farming advice to local farms and landowners. Other projects have been targeted specifically at flooding and the programme has supported the design and installation of Natural Flood Management features to help protect local communities from increasingly intense rainfall events.

The Education and Outreach theme of the SWC programme has been very active with 'Everyone's Evenlode', run in partnership with the Cotswolds National Landscape providing a wide range of informative and engaging activities for people of all ages, as well as helping to make links across the partnership and raise awareness of water quality issues in national and local media.

Whilst the SWC programme remains the major focus for ECP activity many partners are independently developing and implementing projects drawing on partnership expertise where appropriate. Blenheim Estate began the long-planned dredging of Queen Pool, at the heart of the historic World Heritage landscape and undertook a landscape-scale tree planting programme on arable land along the slopes of the Dorn valley susceptible to erosion in heavy rain. More widely the North East Cotswold Farmer Cluster was successful in attracting funding to develop a Landscape Recovery Programme bid and continued to attract new farmer members interested in environmentally sustainable farming as well as deliver related projects.

The links that have been fostered by the ECP and the SWC programme will be key in supporting long-term improvements in the water-related aspects of our catchment and involving those communities who live within it. The SWC funding and support provided by Thames Water, has allowed progress in many areas, which is much appreciated. The ECP itself continues to be most ably hosted by local charity Wild Oxfordshire which also manages the SWC programme. All partners are indebted to the hard work and commitment of the charity's staff, which underpins so much of what we do.

Nick Mottram

Chair, Evenlode Catchment Partnership

1 Evenlode Catchment Partnership

Catchment Partnerships were set up in 2014 by the Environment Agency throughout England in a programme to involve communities in tackling the failure of our rivers to meet 'Good Ecological Status' under the Water Framework Directive. The Evenlode Catchment Partnership (ECP) drew together a wide range of interested people to help tackle the water quality failure throughout all 18 water bodies. These include government agencies, Thames Water (TW), NGOs, consultants, members of fishing clubs, parish councils and catchment residents. Funding from the EA has been very limited in the past so although an active partnership we have been limited on how much we have been able to achieve.

The Evenlode Catchment was chosen with The Chess and The Crane Catchments to pilot Thames Water's Smarter Water Catchment Initiative to enable catchments to achieve more. The £3 million funding over 5 years (2020-2025) from TW has enabled us to expand our staff and increase our ambitions and resources and concentrate on what the partnership wants to achieve in the future.

Our vision is to achieve *Good Ecological Status* across the catchment.

We have developed a ten year plan which identifies the four main themes under which we want to deliver our projects each year. <https://www.wildoxfordshire.org.uk/evenlode/evenlode-catchment-partnership>

Each theme is led by a Theme Lead Organisation and the work is planned by working groups who are made up of experts and practitioners, collectively shaping the direction and course of the different projects and milestones. Overall governance is directed by the Steering Group consisting of representatives from all themes and key operators.

2 Hosting and the wider partnership

The charity, Wild Oxfordshire, is the host for the ECP and has responsibility for bringing the partnership together, disseminating information and for the co-ordination of the partnership. In May we welcomed Eoghan Concannon in joining the WOx ECP team.

This year we continued to hold our quarterly Evenlode Catchment Partnership meetings involving the wider partnership, although we did not manage a face-to-face meeting.

In July the Smarter Water Catchment Team and partners presented a summary of the work completed in the first fully funded year to the wider partnership and guests in a Webinar.

Below are a taste of the range of projects going on in the catchment outside of the smarter water catchment funded core.

Blenheim Estate started their dredging of the Queens Pool, an SSSI that has silted up over the years. Blenheim opted for a wet dredge, excavators sat on floating barges and removed the silt to floating hoppers. The silt was then taken away by dumper trucks on haul roads to be spread on 16ha. farmland on the estate out of sight of the World Heritage Site and historic landscape.



Blenheim Estate planted 30,000 trees, in partnership with Morgan Sindall. These have been planted on the steep slopes of the Dorn valley and will eventually reduce surface water runoff and sediment movement, thus protecting the restored lake. It is projected that this will capture over 22,000 tonnes of CO2 over the next 25 years.

The North East Cotswold Farmer Cluster (NECFC) had exciting news with their successful bid for a pilot Landscape Recovery project on River restoration and flood plain re-connection along the Glyme and Dorn corridors and part of the Evenlode. After much hard work on outline plans the project started in earnest in January 2023, with a two year planning phase and £500k funding. The ECP looks forward to working in partnership with NECFC. The project if successful will continue for a further 20 years of delivery which will entail securing blended finance and creating contiguous habitats.

The Environment agency announced a planned £65k for more floodplain re-connection projects and £34k for natural flood management projects at Bledington and Moreton-in-Marsh.

Catchment Sensitive Farming advisors hosted an event for landowners to think about where they can create wildlife corridors, connections and wet woodland.

A group of ECP partners responded to the new Botley Solar application made by Blenheim. In brief, we are in favour of renewable energy but some of the fields are quite steep, under solar panels there tend to be bare patches, which will result in runoff issues, so a lot of thought needs to go into how it fits into the landscape. The Evenlode forms the centre of the middle section. We said that we would like to see full river and floodplain restoration, wetland creation, species rich meadows all linking to Landscape Recover Project. With an emphasis on the 'Blue Green Corridor', and better access and recreation. We said we would welcome the opportunity to work with the developers on this aspect, if appropriate.

Many partners attended the Water Day run by West Oxfordshire District Council (WODC) in November, there was a very full programme with several ECP members presenting.

Nick Mottram announced that he was leaving Oxfordshire County Council (OCC) and questioned the Steering Group if he should continue to be chair, the meeting asked him to remain as chair of the ECP.

The New Scientist interviewed various members and organisations in January, focusing on sewage pollution at Milton under Wychwood, our new Sonde monitors and the nature based solutions at Bruern Natural Flood Management (NFM) project.

Following this brief review of another busy year for the wider catchment, we will now look in more detail at some of the SWC projects and initiatives completed over the year within the catchment plan.

3 Water Quality

None of the 18 water bodies in the catchment currently achieve good ecological status under the water framework directive (WFD). Phosphorus is the main pollutant; about 65-70% of which comes from sewage effluent and about 28-30% from agricultural runoff. Currently only sewage treatment works on the Dorn and Glyme tributaries are equipped with phosphorus stripping capabilities.

The high phosphorus concentration enriches the water and causes algal blooms in the late spring and summer during low flows. This severely affects the water quality and the diversity of macrophytes invertebrates and fish.

The wider water quality working group started work on looking into the WINEP programme and the status of all point source sewage treatment works, with workshops led by Helena Soteriou of Thames Water, working through PR24 plans and what improvements can be included using the new Environment Act as a driver. Using this legislation we were able to show that 13 of the sewage treatment works (STWs) should have P stripping installed in AMP8 (2025-2030) and we put forward this proposal to go into the PR24 plan.

The working group also started looking into where an Integrated Constructed Wetland (ICW) could be potentially constructed. However, these meetings were discontinued due to TW lack of resources to plan the project.

Citizen Scientists

The ECP, led by Earthwatch, set up a group of volunteers to take monthly readings of nitrogen, phosphorous and turbidity upstream and downstream of some of the sewage treatment works in the catchment using Fresh Water Watch kits. These volunteers, who we call *Catchment Champions*, have continued to monitor this year. The C/S monitoring data has doubled this year and have provided nearly 5 times the amount of nitrate and phosphorus measurements as the EA have been able to undertake.

Water quality is significantly different downstream of STWs compared to upstream, with higher nutrient concentrations and altered daily cycles of chemical conditions below the STWs. The number of STWs in a sub-catchment was the most significant catchment characteristic explaining increased phosphate concentrations. In summer/late-summer, the impact of final treated effluent was more pronounced, which was associated to the lower river flows.

This was evidenced by the higher nutrient values recorded in the September WaterBlitz further confirmed by phosphate models in two streams (Littlestock Brook and Blue Brook) that predicted the breaching of a phosphate limit of 0.1 mg/l for over 85% of the time downstream of STWs in July and August.

The Water Blitz event open to everyone in the Evenlode Catchment was held in September 2022.

Earthwatch were invited to talk to the BBC about water quality. Heather Moorhouse from Earthwatch and John Pratt, catchment champion, were interviewed in November for a film.



Heather talking to the BBC about water quality, Sept 2022 (c) Earthwatch

Heather and John were interviewed again by the BBC for a Radio 4 programme 'Troubled Water' raising the question 'Are we running out of Water' and 'How clean is the water we drink'.

The FreshWater Watch Team held a webinar featuring a presentation on the work of the ECP in September, A decade of people-powered freshwater science.

In February the Earthwatch Team held a workshop for citizen scientists in Charlbury with guest speakers Claire Roberston from Thames21, Hannah Parry-Wilson from the Chess Smarter

Water Catchment, Azra Glover from the Crane Smarter Water Catchment. They were joined by Thames Water and the Environment Agency to answer any questions.

In March 2023 the ECP citizen scientists were featured in 'Cotswold Life'. We are really pleased to get this coverage which reflects increasing public interest in water quality issues.



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Sondes

In February 2022 multiparameter sondes were installed in 4 locations. Upstream and downstream of Milton under Wychwood STW and Chipping Norton STW. The sondes measure specific conductance, turbidity, temperature, dissolved oxygen, pH, oxidation-reduction potential, ammonium and two optical sensors that record tryptophan and chromophoric dissolved organic matter.

Every 15 minutes the readings are sent to an online data base which is linked to the ECP section of the Wild Oxfordshire website.

Having analysed all the data, Earthwatch have concluded that priority should be given to P stripping at STW that discharge continuously to small brooks where summertime flows are dominated by STW effluent. Priority should also be given to upgrade STWs on main river sites (receiving STW discharge) that have elevated anomalies and STWs with elevated spill event frequency and duration.

The full Earthwatch Annual Water Quality and Monitoring Strategy Report 2022 can be found on the ECP section of the Wild Oxfordshire website.



ECP Report 2022 -
May 2022 FINAL.pdf

Earthwatch infographic.



Riverfly Training

In October another riverfly training session was held, this time in Charlbury with 18 volunteers attending.

Riverfly react to the long term pollution in the river and the types found will depend on the water quality. A healthy water environment will be teeming with aquatic invertebrates. This monitoring scheme is run through Riverfly Partnership. Along with the EA they set levels of riverfly each

volunteer should be expecting to see, if the numbers drop to an agreed low trigger level the EA are obliged to come and take further samples.



Campaigns

The ECP continues to campaign for P stripping and greater capacity in storm overflow tanks, and the amount STW can treat. We work closely with Windrush Against Sewage Pollution (WASP) who run a very effective campaign for better water quality.

4 Biodiversity, Habitat and Landscape

As well as water quality issues, changes in land management and river engineering all impact our biodiversity. Much of the catchment lies within the Cotswold Area of Outstanding Natural Beauty and includes the remains of Wychwood Forest and the World Heritage Site of Blenheim Palace. It is a beautiful landscape that has become degraded.

Past dredging activities for drainage purposes have caused the river channels to be disconnected from the natural flood plain. As a result, natural flood meadow habitats are rare and much of the valley floor has been converted to arable land where nutrient and sediment losses are greatest during flooding.

Weirs and other barriers block the passage of fish and reduce their access to spawning grounds.

Extensive farming practises are highly dependent on high fertiliser and pesticide applications and impact heavily on water quality and biodiversity. Sustainable farming is being actively encouraged in the catchment in order to protect soil health, water quality and wildlife.

River Restoration Project

Wild Oxfordshire undertook a wetland creation and river restoration project at Middle Brookend Farm using EA WEIF (water environment investment fund) funding. An incised brook was blocked and released into the field to run naturally with the land into two wetland scrapes and to re-join the brook further down.



Middle Brookend Farm River Restoration

Wetland Creation, Milton Eco Field

A project started under a Thames Water nutrient reduction project had failed to get funding in time for construction, so the ECP decided to take this on under the wetland creation grant scheme.

The plan was to access a culverted spring in the field and create two ponds for wildlife. On exploration the culvert was found to run in a completely different direction so the pond locations were altered. It also became apparent in digging that although one pond was in clay, the other was in sand and had to be lined with clay to hold water. This clay was excavated from the field and then the pond spoil was used to fill the hole.

This part of the field has now been handed over from the developer to the parish council who will continue to maintain it.



Weir Removal

Weirs in tributaries have not been recorded by the EA and the ECP is trying to plot as many of these as possible using the River Obstacles App <https://river-obstacles-theriverstrust.hub.arcgis.com/>.

The ECP began working with Charlbury Town Council on their weir which is beginning to fail and requires attention. After much deliberation it was agreed that the town would not wish for the weir to be removed due to an active canoe club using the mill leat.

The ECP funded a feasibility study by Fishtek on rock ramp construction. Charlbury town council began to monitor the level of water in the mill leat.

Wet Meadow surveying in the floodplain

The ECP mapped the flood plain throughout the catchment and employed ecological surveyors to find out which fields would qualify as species rich with the idea that these fields could be put on the Priority Habitats map.

Sustainable Farming

Natural England with their Catchment Sensitive Farming Officers, offer guidance and together with the North East Cotswold Farmer Cluster the catchment continues to work towards more sustainable farming with reduced nutrient and soil runoff.

The ECP has supported the NECFC financially in their work.

Please see the NECFC website for further information <https://www.cotswoldfarmers.org/>

5 Natural Flood Management

Natural Flood Management (NFM) is a method of 'soft' or 'nature based' engineering. It aims to restore natural features of river catchments to slow water flows to protect communities from peak floods. Such features include riparian areas, instream woody material, the use of floodplains, and wetlands. This helps local communities to prepare and protect them from flood risk, while also improving the health of the river ecosystem.

NFM measures aim to reduce the maximum peak flood flow by reducing and delaying the arrival of the high water levels downstream in towns and villages. During high rainfall events, rain falling on the steep slopes in the upper catchments, quickly rushes downstream along deepened and straightened ditches. NFM interrupts this flow, storing water to be released slowly when the peak flow downstream has passed. Storing more water upstream in wetlands also protects against drought, making the catchment more resilient to climate change and extreme weather events.

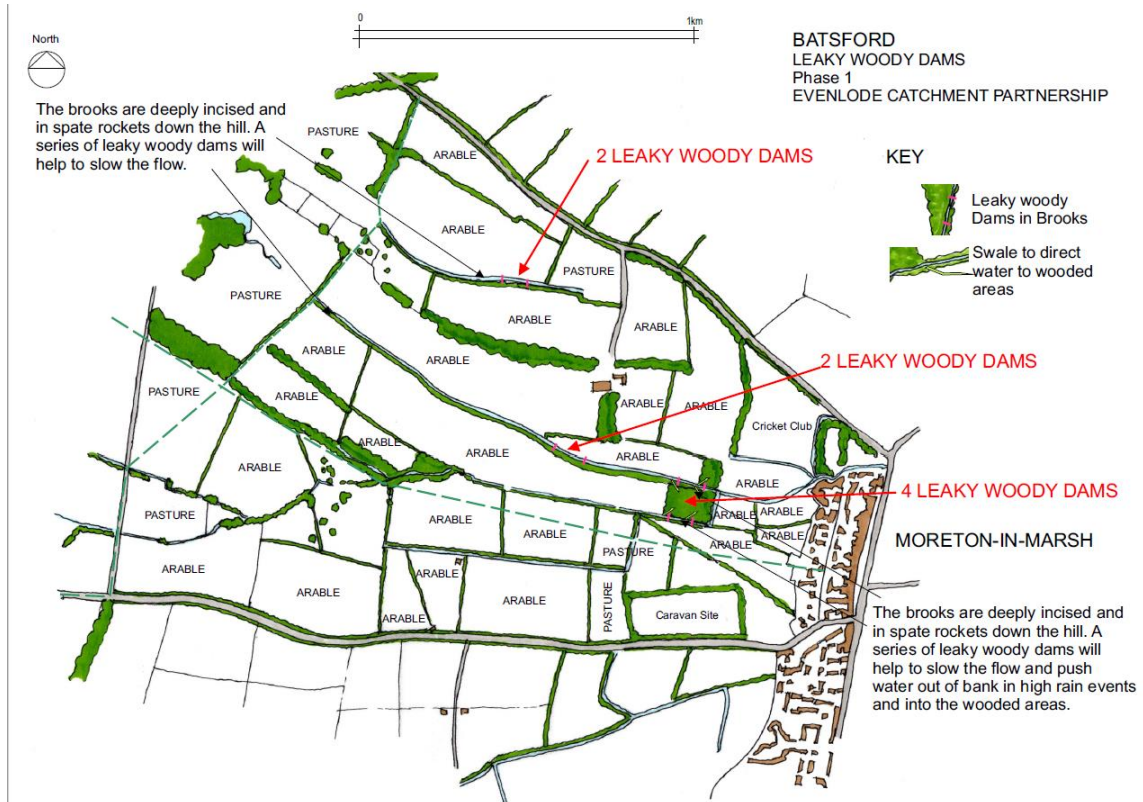
Bledington NFM

After a flood event in December 2020, local residents who were flooded, formed the Bledington Flood Group, they approached the ECP to try and find out what we could do to help the village. 24 properties had been flooded.

This summer, Wild Oxfordshire were invited to join the Steering Group and then to design and manage an NFM project funded by the EA and the ECP. 4 field corner bunds and 10 leaky woody dams were installed.

Batsford NFM

Moreton in Marsh also suffers from flooding, the surrounding hills shed water quickly from the slopes and the Evenlode river is very constrained in the town preventing the water from quickly flowing away.



After long negotiations with the Batsford Estate we were allowed to construct 8 leaky woody dams in the straight and over dug brooks. These are designed to slow the flow but not to spill out into the fields for storage.



6 Education, Access and Recreation

Based at Cotswold National Landscape (CNL) the three education and outreach officers have had a busy first full-year of planning and delivery.

Over 934 pupils from 17 Junior and Senior schools around the catchment were engaged with their local river environment. Events have included class visits for pond dipping and classroom-based learning and some take home activities.

At 'Earth Day' Wigwell Reserve, Charlbury April 250-300 attended. Throughout the day a variety of interactive, nature-based activities were on offer, including arts and crafts, beaver dam building and stream-dipping, as well as talks and presentations on ECP projects. Delicious refreshments were provided by Charlbury Scouts, and Charlbury Primary School performed some emotive river-themed songs.



The ECP attended Charlbury Riverside Festival in July for the first time. We were assisted by Charlbury 'Nature' group and housed in a large tent labelled 'The River Tent' alongside WASP and Thames Water.

Local artist Kath created a river Goddess and children added ribbons for her hair. She was processed through the festival accompanied by singing. Over 300 people were engaged over the two day event.



The ECP also attended the Wychwood Forest Fair and Moreton in Marsh Show reaching over 900 people.



Photo: River surveying with Oxford University Geography PGCE students at Combe Mill in October. 'Training the teachers'.

The education team were joined by Dave Gasca from Atkins and delivered a comprehensive exploration of river analysis, health and safety, measurements, how rivers work, flooding and natural flood management. This will give skills to future teachers to work safely in rivers and engage children with their local water environment.

Led by various youth and young children's groups an Eco Youth Conference was held in November at FarmEd. A local sustainable farming demonstration enterprise founded by Ian and Celene Wilkinson of Cotswold Seeds Ltd.

Programme schedule

Timings	Presenter	Activity
1-1.05pm	Ros Marsden, CNL/ECP	Welcome and introduction to the Evenlode Catchment Project
1.05-1.25pm	Alex Heffernan, WASP	Windrush Against Sewage Pollution (W.A.S.P.) Youth Group The state of our rivers and what we can do about it
1.25-1.40pm	Freddie, Will, Sam, Izzy and Archie, DofE volunteers	Conservation Volunteering for the Duke of Edinburgh's Award Project work at Combe Mill – a slide show and talk by youth volunteers in Years 9-11 from Marlborough School and the Cotswold School
1.40-1.55pm	Danielle Semple	Emergent Generation – discussing the work of a new ecosystem of young champions building sustainable farming & food systems that nourish people and regenerate the planet
1.55pm-2.10pm	Creative Writing Competition	Winning entries for our Cotswolds National Landscape Creative Writing Competition with prize presentations and readings
2.10pm-3pm	Making bat boxes and willow weaving	We will be making bat boxes and willow weaving bird feeders to help our winged friends through hibernation and the winter hunger gap. Feel free to feed and water yourselves across this time (catering available for all).
2.10pm-3pm	Free catered tea with cakes and biscuits	Time for all our young participants to eat, drink and chat with each other. Expect lots of catered goodies! Free to everyone attending. Craft-making will continue across this period.
3-3.55pm	Dave Endacott, Chair of the Oxfordshire Bat Group	Slide show about bat conservation and rescue, complete with a demonstration of live bats and their echolocating abilities.
3.55-4pm	Rowan Wynne-Jones	Thanks, and conference actions for the future

95 young people attended.



Seven guided walks were led by the CNL Cotswold Wardens, proving very popular with 80 members of the public engaged. These focused on the water environment and linked with projects that the ECP have delivered to demonstrate the breath of projects that the ECP delivers.

Wild Wednesday sessions at Combe Mill were run by the 'Everyone's Evenlode' Team – 16 hours over 4 days spent at Combe Mill, engaging with the public on the banks of the River Evenlode. We led river dipping sessions, and helped the public make willow bird feeders, on alternate Wednesdays. We engaged with approximately 180 people over the four days, and had 6 volunteers assisting us over the month.



Pond dipping, Combe Mill

7 Conclusion

This second year of delivery has been packed with activities, environmental improvements and of hope that with engagement with the WINEP programme it will be possible to achieve actual improvements in water quality.

Many thanks to everyone in the partnership who have worked tirelessly and enthusiastically on this project to very tight deadlines, and for completing a very successful second year of the Smarter Water Catchment.

8 List of Partners

- Atkins
- BBOWT
- Blenheim Estate
- Bruern Farms
- Centre of Ecology and Hydrology
- Coldstone Angling Club
- Cotswold National Landscape (CNL)

- Cotswold Rivers Trusts
- Cotswold Seeds Ltd.
- Charlbury Parish Council
- Daylesford/Bamford Organic Farm
- EarthWatch Europe
- Environment Agency
- Forestry Commission

- Milton under Wychwood Parish Council
- Natural England
- North East Cotswold Farmer Cluster

- Oxfordshire County Council
- Sylva Foundation
- Smiths Bletchingdon
- Thames Water
- West Oxfordshire District Council
- Windrush AEC
- Windrush Against Sewage Pollution (WASP)
- Wychwood Flora group
- Wychwood Forest Trust



Evenlode Catchment Partnership