

Manor Woods Valley LNR Recommendations Report
South Bristol Rivers
May 2023



Revision	Date	Description	Author(s)	Reviewer(s)	Approval
1.0	23/05/23	ISSUE	MB/NW	SH	SH

Introduction

Bristol Avon Rivers Trust (BART), funded by Bristol Avon Catchment Partnership and the Bristol Climate and Ecological Emergency Community Grant, carried out a suite of surveys on the Malago, Pigeonhouse Stream, and Colliters Brook in November and December 2022.

The purpose of these surveys was twofold. Firstly, to undertake basic habitat quality analysis of the catchments, identifying large and small-scale habitat restoration and creation opportunities within each. Secondly, they highlighted opportunities for active travel and simple interventions the local community could implement to make a clear positive difference in these rivers and their catchments. BART has written an overarching report summarising these points and detailing their findings, which this report accompanies.

This report focuses on the Manor Woods Valley LNR. It includes observations made during the river walkover surveys undertaken by Project Manager, Nick Wilson and Project Assistant Molly Boyce of BART, and a site meeting between Nick Wilson and members of the group Manor Woods Valley LNR. Several opportunities have been identified that, if implemented, will improve habitat diversity and connectivity, improve water quality, and enhance community engagement.

This report is focussed on quick win opportunities that are deliverable by the local community group. Other opportunities and interventions for the site are outlined in the overarching summary report.

Background and Site Location.

The Manor Woods Valley Group help maintain Manor Woods Local Nature Reserve (LNR) for the benefit of wildlife and people. Manor Woods extends from Bishopsworth Road at its southwestern end to Vale Lane at its northeast end. It is sandwiched between Brooklyn Road and St Peter's Rise. The area is hugely important for the local communities of Bedminster Down, Bishopsworth and Headley Park, and is well-used by residents from across south Bristol.

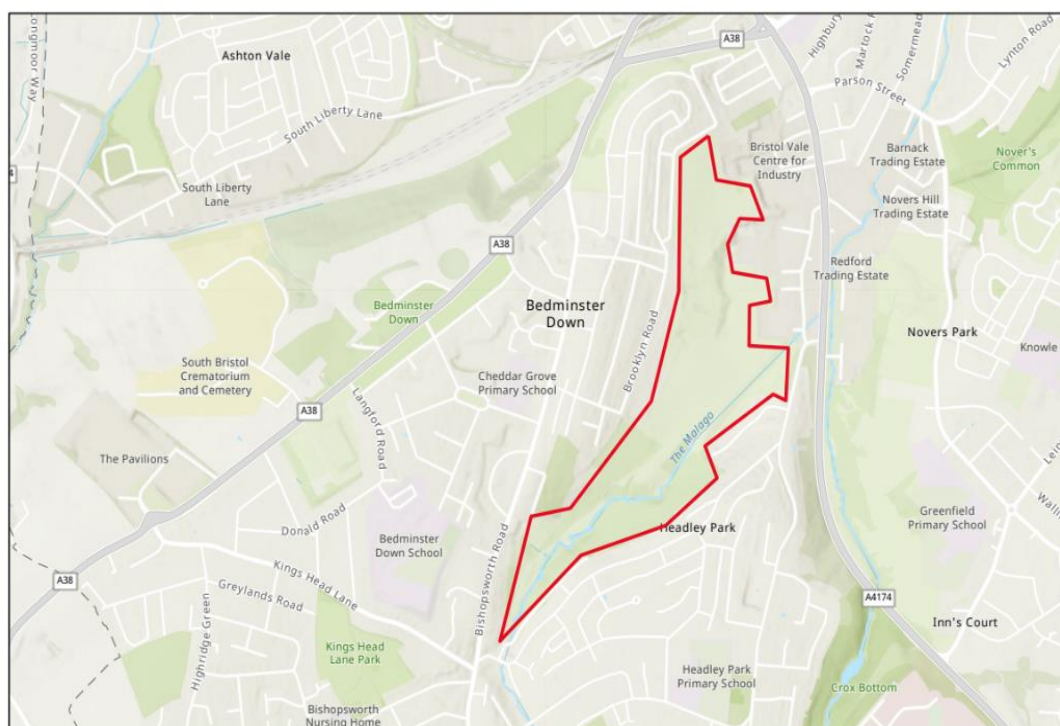


Figure 1. Map of Manor Woods Valley Group Boundary

Manor Woods LNR is home to woodland, wildflower meadows, open parkland, and a stretch of the Malago. Through the reserve the river is given the space it needs to support an array of wildlife, but the river has still been straightened and constrained stopping it from achieving its full potential. At the northern end of the site the Malago enters a large flood relief culvert.

One of the main aims of the Manor Woods Valley group is to encourage and facilitate the use of Manor Woods Valley as a learning and research resource. The group engages with primary school children, university students, and those with a vested interest in the natural environment to offer opportunities to learn through play or sophisticated projects. The group runs conservation activities such as clearing brambles, sowing and planting wildflowers, coppicing and tree planting. Volunteers also organise community and family nature events, such as guided walks and talks. Manor Woods LNR provides multifaceted benefits for both the environment and local community:

- Carbon sink.
- Flood storage.
- Riparian woodland.
- Wildflower meadow, home to several species of orchid.
- Recreational green and blue spaces.
- Important site for slow worms and otters.
- Wildlife corridor.

During the walkover surveys, it was great to see several excellent interventions and work carried out by the Manor Woods Valley group that has improved biodiversity and engagement on site.

Quick Win Opportunities

Several measures have been identified by BART to improve and enhance the site to give local and catchment scale benefits.

These measures include:

1. Installation of complex woody debris

This section of the Malago has been straightened and lacks in channel flow diversity and sinuosity. The river is also overshadowed in parts leading to an absence of in-channel macrophytes. It would benefit from the installation of complex woody debris features.

Benefits of complex woody debris:

- **Increase flow variability** - Using appropriately positioned woody material in the channel will allow processes such as bed scour to clean sediment from the gravels. The woody material will also act as a sediment trap, to help remove sediments from the system. It will also narrow the channel during summer low flows increasing the resilience of the river to climate change.
- **Increase marginal vegetation** - The use of woody debris features installed along the channel margins will create a more gradual change from in-stream to terrestrial habitat, providing a more suitable habitat for colonisation from marginal plants such as yellow flag iris (*Iris pseudacorus*) and water mint (*Mentha aquatica*).
- **Selectively reduce canopy cover** - to enable more light to get into the channel. This will in turn encourage the growth of in-channel macrophytes which are important for flow

variability, oxygenation, and the lifecycles of several key invertebrates which in turn represent important food sources for various bird, fish and mammal species.

To start a woody debris project, the group will need to acquire landowner permission and a Flood Risk Activities Permit (FRAP) from the Environment Agency. It is crucial to receive this permission, otherwise, you could be breaking the law if you start work without getting the permit you need. We strongly advise that the group work with BART to raise funds and deliver any work of this nature.



Figure 2. A woody debris berm (type of complex woody debris feature) being created by BART and volunteers in the Stoke Brook.

2. Tree and hedge planting

Hedges are incredibly valuable for wildlife, providing food and refuge to an array of species throughout the seasons. Alongside the footpath that flanks the base of the wildflower meadow there is scope to plant a hedge. This will increase the quality of habitat available on site and increase habitat connectivity.

Any new hedge should be planted double width (alternate) with each whip spaced ~40cm apart. It should be made up of a mix of native species. A typical mix that includes hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), field maple (*Acer campestre*), Hazel (*Corylus avellana*), dog rose (*Rosa canina*), guelder rose (*Viburnum opulus*), and wayfaring tree (*Viburnum lantana*) would be suitable. Standard trees such as oak (*Quercus robur*) and wild cherry (*Prunus avium*) could be included to introduce a canopy structure to the hedge.

Before hosting a tree-planting event, the following things need to be considered in the initial planning process:

- Landowner engagement and permission.
- Appropriate training and PPE.
- Insurance to cover injuries or accidents.
- Sourcing the right, native tree whips and adequate protection.
- Develop a long-term tree maintenance plan to ensure establishment and sensitive management of trees.



Figure 3. A hedgerow planted by BART and volunteers on the River Chew.

3. Coppicing

Coppicing sections of hazel on a rotation is recommended. Most of the hazel on site needs coppicing as it is fully mature and overshadows the understory vegetation.

Coppicing provides several benefits to the local environment:

- Allowing more light through the canopy will enable a greater variety of understory plants to flourish.
- Coppicing of trees keeps them healthy and prolongs their life.

- Coppiced material can be used to create log piles for reptiles and amphibians to support them over winter.
- Coppicing on rotation will add to the diversity of habitat present on site, increasing biodiversity.

When undertaking any coppicing activity please make sure that appropriate PPE (Personal Protective Equipment) is supplied, appropriate licences are acquired, and work is commencing outside of bird nesting season. Landowner permission must be sought, and suitable insurance held.

4. Removal of laurel (*Laurus*)

There's a patch of laurel at the Bishopsworth library end of the site. Laurel is not native to the UK and provides poor habitat for wildlife. The removal of the bush will stop its spread and open a new area to wildlife.

Once removed the area could be left unmanaged to allow rough, diverse vegetation to establish, or planted with trees or planted with wildflower seeds and bulbs. Each would provide far more valuable habitat to wildlife on site.



Figure 4. Laurel that should be removed.

5. Water Quality monitoring

The monitoring of water quality is a vital tool in assessing the ecological quality of a river. Monthly kick samples using the riverfly technique can provide a proxy for water quality. This is because riverflies are sensitive to pollution, and therefore can be used as an indicator of the health of our rivers. A decrease in the number or species of riverflies can highlight a severe problem with water

quality. More information can be found here: <https://www.riverflies.org/anglers-riverfly-monitoring-initiative-armi>.

Simple water quality testing kits for Phosphates and Nitrates can also be used to monitor water quality and provide a valuable tool in monitoring water quality.

If this interests your group, please get in touch with BART as we may be able to help source funding and run training for your group to be able to undertake this monitoring. Please contact Nick Wilson (Project Manager) at: nick@bristolavonriverstrust.org for any further details.

Closing Remarks

Manor Woods is already an incredible space for wildlife. The options for habitat creation, conservation and monitoring works outlined in this report would result in positive improvements for the ecology of the site. They are meant as a 'shopping list' to provide ideas and options that could be implemented on top of the great work that already takes place. Please don't hesitate to contact BART for help and advice in the future.

Disclaimer

Options and information provided in this report are based on Bristol Avon Rivers Trust using due skill, care and diligence in the preparation of the same and no explicit warranty is provided as to their accuracy. This document is based on one site visit and is not a final design. It acts as a high-level guidance document to outline simple opportunities that exist on the site.

It should be noted that no site investigation can ensure complete assessment or prediction of the natural environment. It should be noted that no work can take place without the expressed consent of the landowner.