

## Marden Valley Blue Corridor

### Revised Proposal to Calne Without Parish Council

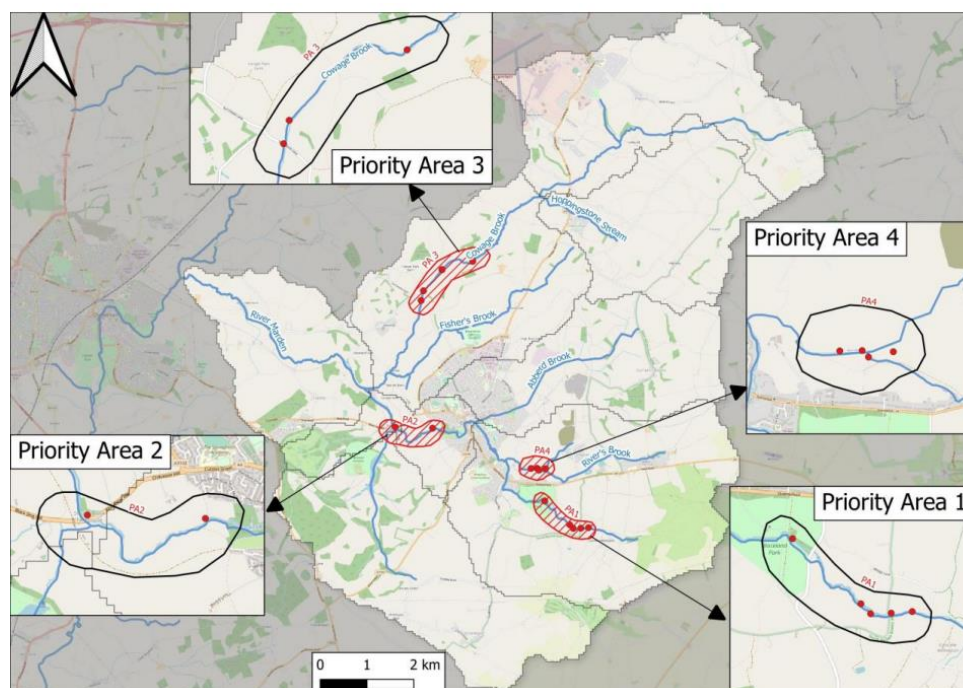
28<sup>th</sup> March 2024

Following a meeting with parish councillors at Spray’s Farm on Thursday 14<sup>th</sup> March where we discussed the original proposal of the Marden Blue Corridor proposal. Bristol Avon Rivers Trust have gone away and re-prioritised the activities within the proposal and the details of which can be found within this document.

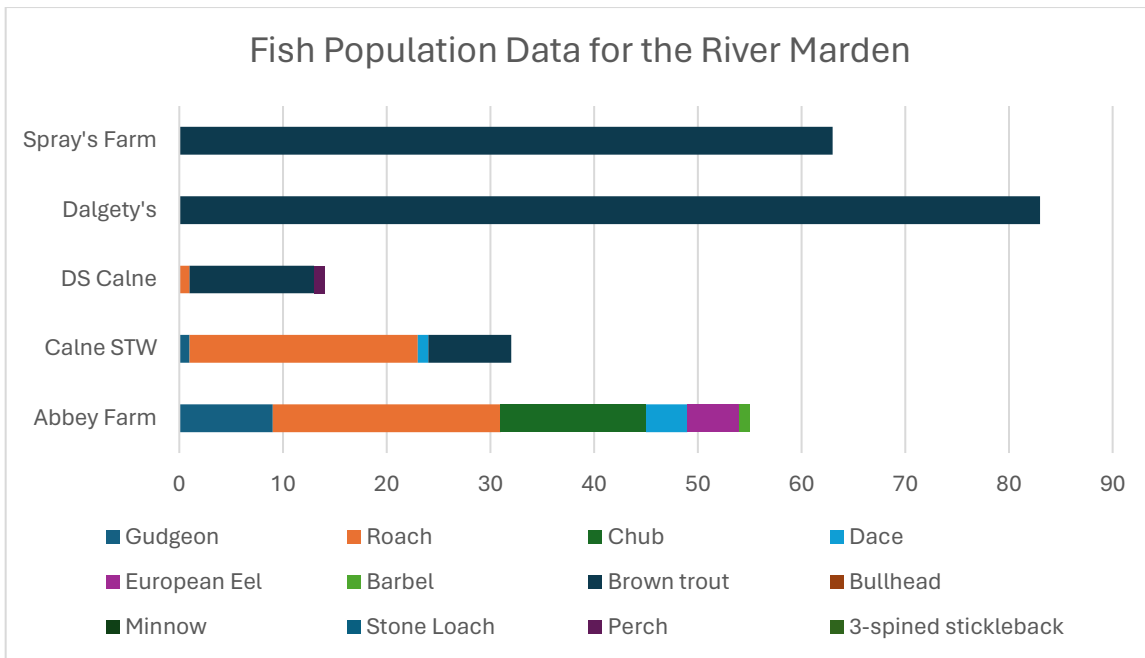
BART have re-visited the *River Marden and Tributaries Walkovers and Sediment Pathways – Opportunities Report (2021)*, Environment Agency fisheries data, and our GIS system with the survey points and photos taken during the Marden tributaries walkovers, and a recent walkover down to Blacklands Mill. We feel in-stream restoration work, combined with weir removal/notching would be extremely beneficial for the river ecology between Blacklands Mill and Spray’s Farm- Priority Area 1 (Figure 1). This to be combined with watercourse fencing at Spray’s Farm where required and upstream of the farm too. There is potential for match funding this through Natural England’s Catchment Sensitive Farming Capital Grant Scheme as discussed.

After a careful look through the fish population data from the Environment Agency it shows a real lack of fish species diversity upstream of Blackland Mill (Figure 2). This is very likely due to the barriers present on the river. Despite good populations of brown trout present, there are very few other fish species present and this is highly likely as a result to the barriers on the river limiting fish movement and re-colonisation.

The second focus area would be at Quemerford, the tributary stream coming into the Marden has shown to be really low for Riverfly data (Site 3 in Table 1) and virtually no fish, just 5 Brown trout (*Salmo trutta*) recorded in 1997 which is alarming. This would then be the second area for restoration work and engagement.



**Figure 1.** River restoration measures will be targeted within Priority Area 1.



**Figure 2.** Fish population data for the River Marden.

Macro-invertebrate Site 3 on a tributary of the Marden – the Rivers brook, had the most restricted assemblages of macro-invertebrates of all the sites surveyed and had a poor diversity of macro-invertebrates overall. Black fly larvae *Simuliidae* were the most abundant taxon recorded at this site with 1000 individuals found and only 12 different scoring taxa were recorded.

The indices calculated for Site 3 (BMWP, ASPT and No. of scoring taxa, as shown in table 5) were the lowest of all the sites surveyed with only 12 scoring taxa found and a BMWP score of 49. No taxa with the highest BMWP score of 10 (intolerant of organic pollution) were present at Site 3 and no taxa with a BMWP score of 8 (also intolerant of organic pollution) were present. Only one taxon with a BMWP of 7 was recorded – the cased caddis fly *Limnephilus lunatus*. The majority of taxa, therefore, had low BMWP scores and are tolerant of poor water quality conditions such as non biting midge larvae *Chironomidae*, worms *Oligochaeta* and leeches *Glossiphonia complanata*.

There was, therefore, a very low diversity of macro-invertebrate taxa recorded at Site 3. These results suggest the macro-invertebrate assemblages are being **restricted by the conditions at the site.**

**Table 1.** Riverfly BMWP Scores taken at 7 sampling sites in 2020. Table in descending order of BMWP score.


Site number	Site name	BMWP	No. Scoring Taxa	ASPT
7	Marden DS Calne near Berhills Farm	146	25	5.8
6	Marden @ Castlefields Park	114	21	5.4
1 & 2	Marden (Mill Leat) @ Blacklands Mill	100	17	5.9
4	Marden @ Wessington Park	99	19	5.2
5	Abberd Brook @ Colemans Farm Community Centre	63	16	3.9
3	Rivers Brook DS Quemerford	49	12	4.1

## Proposed Measures

The following is a list of proposed measures that would be delivered as habitat restoration work on the River Marden and tributaries. This work would be delivered alongside the development of a Marden Strategy and Eels in the Classroom schools engagement work.

1. Identify opportunities fish passage at Blackland’s Mill. Working with landowners to look at and deliver where feasible fish passage/ barrier removal.
2. Identify opportunities fish passage at Quemerford Mill. Working with landowners to look at and deliver where feasible fish passage/ barrier removal.
3. In-stream delivery of brushwood berms and flow deflectors to increase sinuosity to help the river re-wiggle and provide instream habitat.
4. Watercourse fencing where appropriate if poaching or livestock access to the watercourse at Spray’s Farm and upstream Spray’s Farm.
5. Riparian tree planting, in-stream brushwood berms to re-wiggle the river at Quemerford and provide much needed large woody debris as habitat.
6. Landowner engagement around Quemerford farms to offer opportunities to ensure no diffuse pollution is entering the watercourse which is leading to the low numbers of Riverfly and fish.

**All landowner consents will be gained ahead of any construction works and will be gained once the project starts. Staff time has been included for landowner engagement, co-design with landowners and consenting for the Environment Agency.**

Priority Area 1	Measure / s	Description
<p><b>Upper Marden – above Blacklands mill and down to Quemerford Mill</b></p>  <p>Flow Diversity SU 01430 69336</p>	<p>This section of the Marden sits just below the headwaters, clear waters flowing on white gravel beds. Along this stretch the water quality visibly deteriorates as the flow slows and grazed pasture reaches close down to the watercourse. Fencing is missing or in poor condition and should be fixed to keep livestock out of the stream with a decent buffer zone to prevent field run off from reaching the watercourse. There is also evidence the farmyard runoff is entering the watercourse along this reach.</p> <p>Below Blackland Mill the watercourse is channelled through a series of weirs down to Quemerford Mill, in places has steep banks and has been over straightened and re-sectioned. There poor flow diversity. Installation of a series of brushwood berms would improve flow diversity. This measure would encourage scouring of the bed, exposing gravels and removing silt and create a variety of different habitats to improve the ecology of the watercourse. Consultation with the Environment Agency is recommended as a first step for this measure.</p> <p>The watercourse reaches another set of barriers at Quemerford Mill. Here around</p>	<ol style="list-style-type: none"> <li>1. Consider options for barrier removal / alteration to improve fish passage</li> <li>2. Above mill: A programme of in stream river restoration: Installation of flow deflectors / brushwood berms</li> <li>3. Below mill: Coppicing</li> <li>4. Above mill: Landowner engagement - Riparian fencing and improved buffer creation.</li> <li>5: Landowner engagement to understand how run off from farm premises along side watercourse might be reaching watercourse.</li> <li>6: Community engagement to look improve after the small (non-designated) nature reserve at Quemerford mill.</li> </ol>



Barrier Removal & Coppicing  
SU 02203 68753

Fencing & Buffer Zones



SU 02042 68748

the millpond a small conservation area has been created as part of the housing development 20 years ago. The area is full of wildlife as recorded by local residents, and is managed by a local trust (The River Harden wildlife and Conservation trust) who (it is reported) is not proactive in looking after this valuable habitat although funds were provided – trustees have passed away. Opportunity to regenerate interest in this area and the local population are keen to help and care for the area. There is potential to create a small LNR to benefit the community who could engage in the river and its wildlife.



Fencing  
SU 02368 68765



SU 01966 68826





Fencing & Buffers



Wildlife area at Quemerford Mill



River Barriers / Flow Diversity

Priority Area 4	Measure / s	Description	Estimated Cost
<p data-bbox="196 237 448 297"><b>Rivers Brook: downstream stretch - Quemerford, above confluence with Abberds brook</b></p>  <p data-bbox="196 533 448 573">Confluence with Abberds brook to SU 01138 70030</p> 	<p data-bbox="483 237 783 454">Extensive cattle poaching is present in numerous locations on the most downstream stretch of the watercourse above the confluence with the Abberds brook. The poaching has been assessed to collectively contribute a major source of sediment to the Rivers brook. This whole section is in need of fencing and potentially alternative drinking sources such as drinking troughs if the river is the only source of water for these livestock.</p> <p data-bbox="483 472 783 629">Just upstream of this poached stretch the section of the brook around Quemerford Common Farm has extensive in channel vegetation and has very little shading. Recommend tree planting to increase shading to 60:40 shade / light ratio. There are also potential areas for tree planting and buffer zone creation downstream of here.</p> <p data-bbox="483 647 783 768">Just upstream of Quemerford Farm, slow establishment of arable crop has meant large areas of bare soils remain in fields adjacent to the Rivers brook. Overland flow pathways may develop during wet weather and bare soil from this field could contribute</p>	<ol data-bbox="796 255 1098 394" style="list-style-type: none"> <li>1. Landowner engagement - Riparian fencing</li> <li>2. Potential for buffer zone creation and tree planting</li> <li>3. Wet weather return visit and landowner engagement</li> </ol>	<p data-bbox="1118 237 1295 277">Landowner engagement - £350 per day,</p> <p data-bbox="1118 295 1295 336">Fencing costs approx. £7-£9/m.</p> <p data-bbox="1118 353 1295 551">Livestock water trough 405mm deep approx. £130 plus installation costs. If no access to mains water, then pasture pumps could provide a feasible solution: 1* Pasture pump kit approx. £400 per kit, plus installation costs.</p> <p data-bbox="1118 609 1295 784">Tree planting: Landowner engagement to explore plans with landowner = £300 BART £10 per tree for tree saplings, protective guards, planting &amp; tree guard removal when trees are established.</p>

## Cost Breakdown

We have secured funding of £25,000 from the Wiltshire Heritage & Nature Grant towards the following project costs. The values provided below are total project costs.

No.	Activity	Fee (£) No VAT
1	Project Management & Coordination	1,625
2	Marden Valley Blue Corridor Strategy	2,660
3	In-stream River Restoration Woks	22,300 (£14,900 Capital; £7,400 staff time includes landowner liaison, design, permitting and works oversight)
4	Floodplain Restoration Works	13,550 (£10,250 Capital; £3,300 staff time includes landowner liaison, design, permitting and works oversight)
5	Eels in the Classroom	2,935
6	Landowner Engagement	1,670
<b>Total</b>		<b>44,740</b>

## Spend Profile

	2024				Sub-Total	2025	
	Apr-June	Jul-Sep	Oct-Dec	Jan-Mar		Apr-June	Total
	Q1	Q2	Q3	Q4		Q1	
PM & coordination	£304.00	£304.00	£304.00	£304.00	£1,216.00	£304.00	£1,520.00
Eels in the classroom				£1,005.00	£1,005.00	£1,765.00	£2,770.00
River Restoration Works		£11,002.50	£11,002.50		£22,005.00		£22,005.00
Floodplain Restoration Works - wetland creation & ponds			£1,060.00		£1,060.00	£12,710.00	£13,770.00
River Marden Strategy	£1,560.00	£1,560.00			£3,120.00		£3,120.00
Landowner Engagement	£777.50		£777.50		£1,555.00		£1,555.00
					<b>£29,961.00</b>	<b>£14,779.00</b>	<b>£44,740.00</b>



# Programme

	2024						2025								
	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June
<b>PM &amp; coordination</b>															
<b>Eels in the classroom</b>															
Tank preparation & cleaning															
Eel ordering & permit applications															
Schools' sessions															
Eel releases															
<b>River Restoration Works</b>															
Landowner onboarding															
Site visits & designs															
Consenting															
Delivery															
<b>Floodplain Restoration Works - wetland creation &amp; ponds</b>															
Landowner onboarding															
Site visits & designs															
Consenting															
Delivery															
<b>River Marden Strategy</b>															
Stakeholder Consultation Workshop															
Site Visits															
Strategy Reporting															