



## **River Allen, Deans Court, Wimborne Minster, Dorset**



**An Advisory Visit by the Wild Trout Trust December 2014**

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## Introduction

This report is the output of a Wild Trout Trust visit undertaken on the River Allen at Deans Court, Wimborne Minster (national grid reference (NGR) SZ 01128 99709 to SZ 01484 99366). A walk-over of the site was requested by Amanda Broom of Dorset Wildlife Trust. The visit was primarily focussed on assessing habitat for wild trout (*Salmo trutta*) and biodiversity in general.

Comments in this report are based on observations on the day of the site visit. Throughout the report, normal convention is followed with respect to bank identification i.e. banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream.

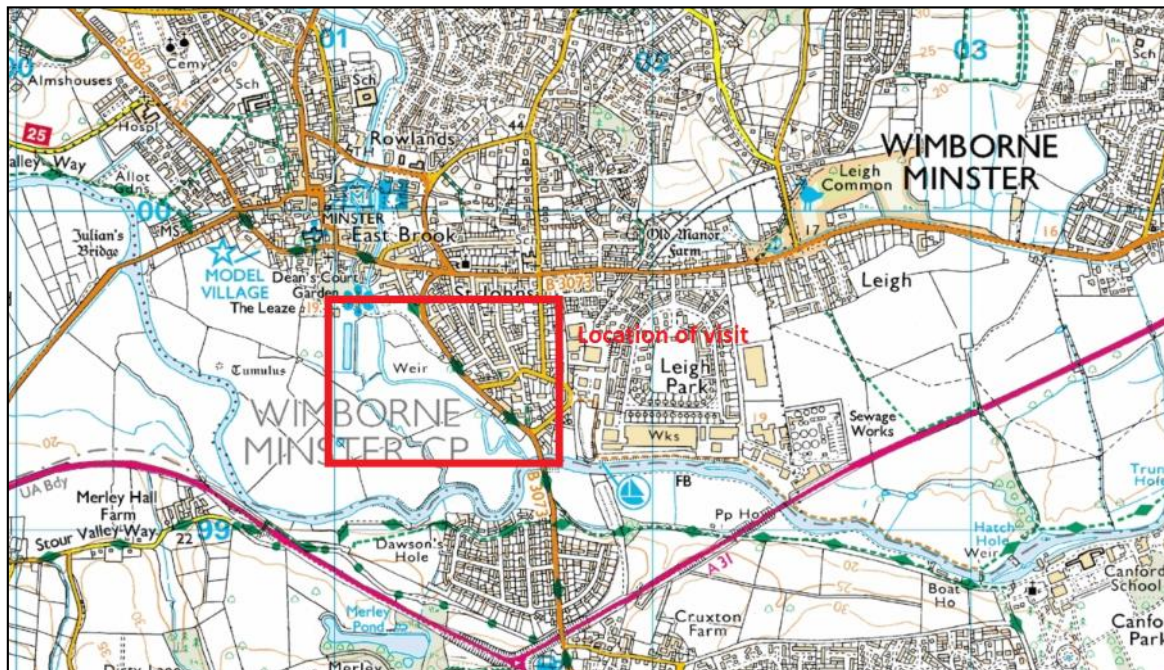


Figure 1: Map showing the location of the water visited

## **Catchment and Fishery Overview**

The River Allen is a relatively short chalk stream with a total length of approximately 13 miles. Almost the entire length of the Allen flows over chalk and through largely undeveloped land. Some intensive agriculture is practised within the catchment but much of the riparian land consists of lightly-grazed water meadow. As a result the Allen is particularly clear-flowing, one of the reasons the river is such an important refuge for the endangered white-clawed crayfish *Austropotamobius pallipes*. The Allen supports healthy populations of brown trout *Salmo trutta*, grayling *Thymallus thymallus*, bullhead *Cottus gobio* and a diverse range of plants and invertebrates.

The majority of the riparian land surrounding the Allen is owned by either one or two large country estates and there are very few public footpaths near the river. However, some small sections of the river are relatively accessible to the general public and there is even some free fishing available in Wimborne Minster.

As with most English rivers, the Allen has suffered from the impacts of unsympathetic land drainage and river management practices. The river has been straightened, widened and deepened in many places, inhibiting natural geomorphological processes and reducing habitat diversity. Water meadow creation, milling, land drainage for agriculture and flood defences have all taken their toll.

The Allen rises from springs at Monkton Up Wimborne and flows through Wimborne St Giles, Witchampton, Stanbridge, and Walford to its confluence with the River Stour at Wimborne Minster. The Stour meets the Hampshire Avon just as both rivers discharge into the English Channel at Christchurch Harbour.

The Allen has a classification of 'Good Status' under the Water Framework Directive (WFD). However, this is an overall classification and does not necessarily represent the river at a local reach level.

**Table 1: WFD information for the Lower River Allen**

<b>ALLEN (Lower)</b>	
<b>Waterbody ID</b>	GB108043011090
<b>Waterbody Name</b>	ALLEN (Lower)
<b>Management Catchment</b>	Dorset
<b>River Basin District</b>	South West
<b>Typology Description</b>	Low, Medium, Calcareous
<b>Hydromorphological Status</b>	Not Designated A/HMWB
<b>Current Ecological Quality</b>	Good Status
<b>Current Chemical Quality</b>	Does Not Require Assessment
<b>2015 Predicted Ecological Quality</b>	Good Status
<b>2015 Predicted Chemical Quality</b>	Does Not Require Assessment
<b>Overall Risk</b>	At Risk
<b>Protected Area</b>	Yes

**Note:** Anything classified as less than 'good' is failing quality targets



## Habitat Assessment

For the purposes of this report the water visited will be described from the upstream to the downstream extent visited.

At the top of the reach, upstream of a triple-arched bridge visited the river is over-wide and straightened with densely wooded banks. The straightness of the channel here is a limiting diversity of flow conditions and the abundance and range of habitat features. The density of bankside trees is also over-shading the channel, inhibiting the establishment and growth of marginal and in-stream river plants (Figure 2).



Figure 2: The straightened and over-shaded channel limits habitat diversity

Recent works including tree works and the installation of brushwood mattresses (visible right of image) and mid-stream deflectors have been undertaken by Dorset Wildlife Trust. These have improved habitat diversity through this reach but the installation of some additional structures at some point in the near future to further improve light and flow diversity would be beneficial.

Downstream of the bridge, habitat diversity improves as a more natural morphology resumes and marginal vegetation becomes more abundant in the open sunlight. Beds of common reed (*Phragmites australis*) help to naturally pinch the channel, speeding up flow and increasing bed scour, leading to a greater diversity of depth conditions (Figure 3). At NGR SZ 01145 99520 a wide bay has



formed under the shade of bankside trees on the RB (Figure 4). Occasional wide and shallow bays are important habitat for juvenile fish and can be potential spawning sites. The introduction of some secured woody debris features at this location could help to keep gravel scoured clean of fine sediment, making the site more attractive to spawning trout and helping to improve the survival of eggs and alevins.



Figure 3: Marginal vegetation helps to narrow the channel and speed up flow



Figure 4: A wide bay could benefit from some secured woody debris positioned to create occasional pockets of scour to locally clean the gravel bed and improve spawning habitat



A short distance downstream some natural woody debris was spotted providing the type of flow deflection that would be beneficial in the shallow bay (Figure 5). Large woody debris (LWD) in the form of fallen trees or limbs provide a range of useful functions within the watercourse. Flow deflection creates scour on the bed which helps to form pools and naturally 'sort' gravel, grading bed material by size as finer sediment is transported further than larger, heavier, cobbles. LWD also provides cover for fish and pockets of slack water where fish can lie up out of the flow, conserving energy whilst predating on invertebrates drifting past in faster flows.



Figure 5: A naturally occurring piece of LWD helps to diversify habitat

A few metres downstream at SZ 01155 99494 some small willows (*Salix* sp.) have sprouted from the centre of the channel (Figure 6). This may have occurred by some loose willow branches becoming lodged and eventually rooted in the bed. Whilst the willows do not presently pose an increase to flood risk, they could become a maintenance problem if not addressed. Hinging over the willows into the channel could create some valuable juvenile refuge habitat and locally slow flows, helping to trap fine sediment within the feature and accelerate flow around the outside. This would also allow spate flows to over-top the feature and reduce, although not eliminate, the amount of maintenance required.

As the river flows out into open pasture, tree cover lessens and a wide and diverse margin of emergent plants is established on both banks (Figure 7). In addition to



the increased sunlight, the abundant margins are in part due to the banks being fenced from grazing livestock.



Figure 6: Willows sprouting from the centre of the channel provide an opportunity to create some juvenile refuge habitat



Figure 7: A wide and diverse marginal community has established where the banks are fenced from grazing livestock and there is adequate sunlight.

Livestock exclusion is also protecting a number of small saplings which, as they grow, will diversify light conditions over the margins, helping to increase biodiversity and bank sinuosity. In the meantime, sinuosity through this section of the river could be enhanced by securing some branches cut from the alders



upstream into the margins at regular spacing to deflect flow from bank to bank (Figure 8).



Figure 8: An illustration showing where some LWS could be secured to introduce greater flow diversity

At SZ 01370 99456, as the river approaches the B3073 (Poole Rd), a small willow with low trailing branches provides some excellent cover habitat (Figure 9). This type of low cover is favoured by trout and other fish as a refuge from predators such as piscivorous birds. Whilst some fishery managers may feel pressured to remove or cut back such features in an attempt to reduce 'snags' for anglers, retaining low trailing cover will be of great benefit to the fishery and will ultimately benefit anglers by providing a good trout lie to target.



Figure 9: Low trailing branches provide great cover and protection from predators

The majority of the River Allen visited at Deans Court was in very good condition with a good diversity of depth and flow conditions and abundant 'shaggy' margins. However, much of the margin on the LB is dominated by a monoculture of common reed, limiting overall marginal biodiversity (Figure 10). A good range of marginal plant species correlates with a good diversity of associated wetland and aquatic invertebrates. This is important to ensure that fish have an abundance of prey throughout the year and can often result in a prolonged period of good dry fly fishing. Planting a few additional willows by driving live willow stakes into the bank will help to diversify light conditions on the RB and could boost biodiversity over time.

The RB is more diverse and the already established saplings will help retain biodiversity. It should however be noted that fenced banks can sometimes develop into monocultures if left unmanaged. Allowing grazing livestock onto the margin once or twice a year, or undertaking annual light strimming works can help prevent this from happening. Initially, the bank should be annually inspected to check that any one particular marginal plant is not becoming too dominant.





Figure 10: A monoculture of common reed, although not necessarily bad for the river, does limit marginal biodiversity

### **Recommendations:**

In order for the River Allen at Deans Court to achieve its full potential as a good quality and biodiverse habitat, capable of supporting healthy, self-sustaining populations of wild brown trout, the following actions are recommended:

1. If possible, undertake some additional tree works upstream of the bridge at the top of the reach. These should be undertaken in a 5-10 year rotation, ensuring that a good diversity of canopy heights and densities is maintained and resulting in a sustained diversity of light conditions. A guide to coppicing works is included in the appendix.
2. Utilise some of the woody material arising from the tree works to introduce a few more woody debris habitat features to deflect flows and further improve channel sinuosity (Figure 11). Any additional brushwood mattresses should be introduced in areas with sufficient direct sunlight for marginal plants to establish and thrive. (Figure 12)





Figure 11: An illustration showing where LWD and brushwood mattresses could be introduced to improve habitat



Figure 12: An example of a brushwood mattress installed on the River Allen at Witchampton Mill last summer

3. Introduce some LWD to deflect flows and promote scour and bed 'sorting' at other key areas within the reach such as the locations shown in figures 4 and 8.
4. Hinge over and secure the willows growing mid-channel shown in Figure 6. This will create a valuable refuge for juvenile fish and will help focus scour around the outside of the feature

5. Consider planting some additional willows by driving live willow stakes cut from bankside trees into the banks presently dominated by common reed.
6. Monitor marginal biodiversity within the fenced margins and, if necessary, undertake annual light strimming or allow occasional grazing to maintain a diverse range of species

### **Making It Happen**

The creation of any structures within most rivers or within 8m of the channel boundary (which may be the top of the flood-plain in some cases) normally require formal Flood Defence Consent (FDC) from the Environment Agency. This enables the EA to assess possible flood risk, and also any possible ecological impacts. The headwaters of many rivers are not designated as 'Main River', in which case the body responsible for issuing consent will be the Local Authority. In any case, contacting the EA early and informally discussing any proposed works is recommended as a means of efficiently processing an application.

The WTT website library has a wide range of free materials in video and PDF format on habitat management and improvement:

<http://www.wildtrout.org/content/index>

The Wild Trout Trust has also produced a 70 minute DVD called 'Rivers: Working for Wild Trout' which graphically illustrates the challenges of managing river habitat for wild trout, with examples of good and poor habitat and practical demonstrations of habitat improvement. Additional sections of film cover key topics in greater depth, such as woody debris, enhancing fish stocks and managing invasive species.

The DVD is available to buy for £10.00 from our website shop <http://www.wildtrout.org/product/rivers-working-wild-trout-dvd-0> or by calling the WTT office on 02392 570985.



There is also the possibility that the WTT could help via a Practical Visit (PV). PV's typically comprise a 1-3 day visit where WTT Conservation Officers will complete a demonstration plot on the site to be restored.

This enables recipients to obtain on the ground training regarding the appropriate use of conservation techniques and materials, including Health & Safety, equipment and requirements. This will then give projects the strongest possible start leading to successful completion of aims and objectives.

Recipients will be expected to cover travel and accommodation (if required) expenses of the WTT attendees.

There is currently a big demand for practical assistance and the WTT has to prioritise exactly where it can deploy its limited resources. The Trust is always available to provide free advice and help to organisations and landowners through guidance and linking them up with others that have had experience in improving river habitat.

## **Disclaimer**

This report is produced for guidance; no liability or responsibility for any loss or damage can be accepted by the Wild Trout Trust as a result of any other person, company or organisation acting, or refraining from acting, upon guidance made in this report.

## **Appendix 1 – Good Practice Code for Coppicing**

Coppicing of riparian trees during the winter is a traditional method of management. This can benefit the river, the farm and the whole catchment area. One of the aims is to increase the amount of light falling on the banks and bed of the river to promote the growth of bankside grasses and aquatic macrophytes and algae. Coppicing should be planned on a minimum of a five to nine year cycle.

1. Before carrying out any coppicing a plan should be drawn up. For this the presence of protected species (including bats and otters) should be determined (see below), and their habitat requirements taken into account.
2. In heavily shaded sections, coppicing should be concentrated in fast flowing shallow 'riffle' areas with lighter work around the glides and pools.
3. Try to leave most of the remaining shading on the south bank along glides.
4. Coppice trees only from October to March and, in any case, well before they come into leaf in the spring.
5. Avoid cutting right back to old growth. Aim to cut to knee height, retaining at least 200mm of new growth. This helps promote good re-growth of the coppice stool.
6. Preferentially leave ivy covered trunks.
7. Leave old and dead trees unless dangerous. Very old or "veteran" trees provide valuable habitat for a variety of wildlife and can contain a rich lichen flora. Some bat species are known to roost under loose bark and in tree holes.
8. Do not take mature timber. It does not coppice well. Any trees with good holes, cavities, splits, or loose bark should be retained.
9. Do not use machinery in the river. There are risks of pollution from fuel, oils and silt associated with use of machinery, which could result in prosecution.

10. Do not damage riverbanks or tree roots with machinery as this may lead to additional erosion. Avoid the use of machinery within 3m of the bank edge or tree stems.
11. Do not work **in** the river between 1 October and 31 March to prevent disturbance to spawning trout, trout eggs and newly hatched fry.
12. Coppiced timber and brash can form valuable habitat for a wide variety of wildlife. Where possible, it should be used to create LWD in the channel, or stacked and secured in such a way as to avoid it washing away and either endangering fences downstream or accumulating on obstructions (bridges etc) and causing a flood risk. If material cannot be securely stacked then it should be removed from the flood plain completely. Should any material be burnt then this should be done no nearer than 50m to any other tree. In no circumstance should burning take place in the river channel. Ash must not be allowed to enter the watercourse.
13. Leave the stumps in the bank as they help to protect the bank from erosion and provide valuable habitat for fish. Tree roots also provide lying up sites for otters and nest sites for riverine birds such as grey wagtail and dippers.
14. Coppicing should be fenced to prevent damage to new growth from browsing stock.
15. Before working in areas with wildlife designations - Natura 2000 sites, Sites of Special Scientific Interest, National and Local Nature Reserves – you must first consult the relevant authorities, to avoid breaching wildlife legislation.

## **PROTECTED SPECIES**

Many of the animals associated with river corridors (including bats, otters and dormice) are protected under Schedule 5 of the Wildlife and Countryside Act (1981), as amended by the Countryside and Rights of Way Act (2000) (CROW 2000) and The Conservation (Natural Habitats, &c.) Regulations 1994. This now extends the offence in section 9(4) of the 1981 Act to 'subject to the provisions



of this Part, if any person intentionally or recklessly kills, injures or takes any wild animal included in Schedule 5, he shall be guilty of an offence.

## **BATS**

All work that may affect bats should be discussed in advance with Natural England as a bat licence is required to survey (licensed consultant/bat worker) or carry out work on roost sites (DEFRA license). Under the Bonn Convention (Agreement on the Conservation of Bats in Europe) the UK is also required to protect their habitats, requiring the identification and protection from damage or disturbance of important feeding areas.

Bank side trees form important habitats for bats, as certain species are dependent on trees. Check trees for signs of bat roosts:

- obvious holes, cavities and splits in trunks and limbs
- dark staining on the tree below a hole
- staining around a hole caused by the natural oils in bats' fur
- tiny scratch marks around the hole from bats' claws
- droppings below a hole - they look similar to those of rodents but crumble to a powder of insect fragments
- noise (squeaking or chittering) coming from a hole
- check holes by inserting a mirror and watching the hole at dawn or dusk
- bats will also roost behind loose bark, which should be checked similarly.

If a roost is identified or suspected a more detailed inspection must be undertaken by someone with the relevant experience and correct license to assess, obtain and implement a DEFRA license where tree roosts will be damaged or lost. Whether bats are found or not, any trees with good holes, cavities, splits, or loose bark should be retained. An assessment should be made of the impact the work will have on bat roosts, feeding habitats and

commuting routes before determining the final coppice plan, which may require alteration to accommodate the requirements of the bats.

## **OTTERS**

Otter holts are found in cavities in large tree root systems, so any work on trees should be preceded by a root inspection. If a holt or lying-up place is *identified or suspected* a more detailed inspection must be undertaken by someone with relevant experience to ascertain whether otters are present. Coppicing should be carried out so that the coppice cut is taken some height above the stool, to allow for the protection of the cavity. Otter holts are protected by law and a licence may be required if disturbance is likely. All such works should be discussed and agreed with Natural England before proceeding.