



River Frome - Notton



Advisory Visit December 2018

Key Findings

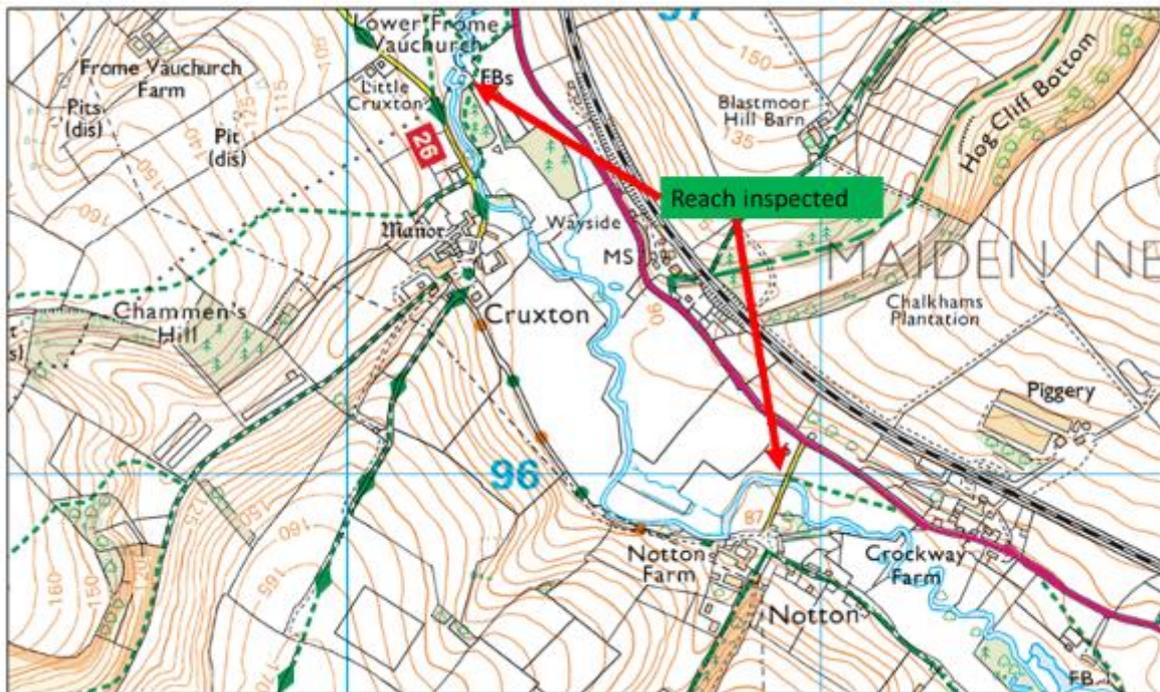
- **The middle reaches of this beat support good examples of high quality trout habitat. The Frome here is adversely impacted by heavy sediment loads derived from arable meadows located on the valley sides**
- **Poorly fenced and narrow buffer zones are leading to excessive bank erosion, particularly on the bottom section of river where intensive grazing pressures are exacerbating the problem**
- **There is scope for enhancement via tree planting and the installation of large woody flow deflectors to create diverse in-channel flow patterns and a more varied channel topography.**

1.0 Introduction

This report is the output of a site visit to a 1.5-km beat of the River Frome in Dorset, running from Little Cruxton, at National Grid Ref SY 60220 96823, down to Notton Bridge at NGR SY 60922 95978.

The request for the visit came from a WTT member Mr. Nicholas Fenton who is a friend of the fishery owner Ms. Dinah Swayne. The sporting rights to the river have been owned by the same family for many years and currently the river receives very little management or angling pressure.

Comments in this report are based on observations made during the site visit and discussions on the day. Normal convention is applied with respect to bank identification, i.e. left bank (LB) or right bank (RB) whilst looking downstream. Upstream and downstream references are often abbreviated to u/s and d/s, respectively, for convenience. The Ordnance Survey National Grid Reference system is used for identifying specific locations.



Map 1. River Frome Cruxton to Notton. © streetmap

River	River Frome
Waterbody Name	Dorset Frome (lower)
Waterbody ID	GB 108044009691
Management Catchment	Poole Harbour Rivers
River Basin District	South West
Current Ecological Quality	Poor Status
U/S Grid Ref inspected	SY 60220 96823
D/S Grid Ref inspected	SY 60922 95978.
Length of river inspected	1.5km

Table 1. Overview of the waterbody. Information sourced from

<https://environment.data.gov.uk/catchment-planning/WaterBody/GB108044009691>

2.0 Catchment Overview

The Frome is a chalk stream that lies entirely within the county of Dorset and is the county's second longest river. The river drains a catchment of 454 km² (181 square miles) dominated by a white chalk geology with measures of grey chalk in the upper catchment and sedimentary sand, clay and silt in the lower reaches.

The Frome is famous for its brown trout and salmon fishing. However, salmon stocks in the Frome have crashed in recent years and research is ongoing as to the exact causes and methods to help the population recover. The Frome also has a reputation as one of the finest grayling fisheries in England, often producing exceptionally large specimens.

Like most of the southern chalk streams, the Frome has undergone significant historical modifications for water meadows, milling and land drainage. The Frome is the most westerly example of a major chalk stream in Great Britain. It also has a slightly different ecology to the nearby Rivers Test and Itchen owing, in part, to the changes in underlying geology through its course. As a result, the Frome is a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC). Much of the river and some of its tributaries are failing their targets for fish and macrophytes (aquatic plants) under the Water Framework Directive (WFD). Agricultural diffuse pollution associated with poor land

management and channel modifications, such as barriers to fish migration and blockages to natural sediment transport are likely to be significant drivers in the failure in fish stocks. Chalk rivers are extremely biodiverse environments supporting rich and diverse aquatic plant and invertebrate communities. Juvenile brown trout and salmon born in chalk streams benefit from an abundant and diverse diet which helps to promote rapid growth rates. However, high levels of calcium carbonate precipitate (known as tufa) can bind river gravels together and reduce the quality of spawning habitat, leading to reduced survival of eggs and young fry (alevins).

Many sections of the Frome are regularly stocked with hatchery-derived trout but this reach of the upper Frome is reliant on natural production to sustain the trout fishery.

3.0 Habitat Assessment

Habitat quality in the middle and upper sections is reasonably good, with the river supporting a diverse morphology associated with the meandering planform and pool, riffle (broken water) and glide sequences. The middle sections in particular support the full range of habitat required to sustain all life stages of the brown trout. A truly accurate assessment of the river bed throughout the entire reach was difficult due to turbid conditions on the day of the visit. That said, there was enough visibility to be able to clearly identify high-quality spawning sites, where gravel size and distribution appeared to provide good opportunities for both trout and grayling spawning.

The very bottom 250m of river, lying between the remains of a derelict water level control structure (photo 1) and the bottom boundary at Notton Bridge, is the most impoverished of the entire fishery. The meadows bordering the river here are used as pony paddocks (photo 2) and intensive grazing pressures on both banks results in a lack of any significant vegetated buffer zones, leaving the banks vulnerable to erosion (photo 3). Stock fencing is present in some locations but is either of poor quality or located far too near to the top of the bank.

In this particular section, the river is comparatively wide, with mainly vertical eroding banks (photo 3). Although it was not possible to inspect the river bed here, it is likely that any bed gravels present will be heavily infiltrated with fine sediments, potentially reducing wild trout and grayling productivity.

The soft and friable nature of the local top soils is evident in numerous locations. As a result, the Frome in this reach appears to be heavily impacted by siltation. Although the valley floor appears to be mainly set aside for permanent pasture, the comparatively steep valley sides are also used for arable production. It would appear that large amounts of soil are frequently mobilised, washing off of the valley sides via ditch systems and over-land pathways, to eventually smother sections of river bed with nutrient-rich silts. Any natural areas of low-flow velocity (e.g. inside of meander bends) were smothered in heavy deposits of fine sediment (photo 4).



Photo 1. Site of an old water level control structure.



Photo 2. Top boundary above Notton Bridge where grazing pressures to both banks are exacerbating bank erosion, resulting in an over-wide channel and loss of in habitat diversity.



Photo 3. Heavily eroding LB margin. A lack of bank-top vegetation with associated complex root systems is leaving the banks on the outside of the bends vulnerable to failure.



Photo 4. Fine sandy sediment appears to be regularly deposited in any areas of low flow velocity.

The reach immediately upstream of the old water level control structure looks to have been re-aligned in the distant past. It is possible that this section was diverted and banked up in connection with the old structure. Fortunately, the invert of the structure does not impound the reach above and this section now supports a long shallow run (photo 5). The slightly squeezed cross section also helps to maintain vigorous flow velocities throughout this reach, which in turn provides some good quality juvenile (parr) trout habitat.



Photo 5. Shallow run above the old structure provides high quality parr habitat. Marginal vegetation should be allowed to develop to provide enhanced winter cover.

Further upstream, habitat quality is significantly better than that found on the bottom section, mainly as a direct result of reduced grazing pressures via stock fencing and a wider buffer zone. A variety of bank-top trees provide valuable channel shading, as well as complex root systems that are helping to provide enhanced bank stability. There are some good examples of low-level cover being provided by low scrubby tree branches (photo 6 and 7). These low, bushy trees may look untidy and occasionally gather debris but they provide cooling shade, excellent habitat for invertebrates and a refuge for fish.

There are a few examples of poorly executed coppicing work (photo 8). Coppicing can be a valuable technique for creating multi-stooped trunks which when allowed to re-grow can provide low, bushy cover at water level. When coppicing, it is important to cut the branches at an acute angle as close to the main trunk as possible.



Photo 6. Old hazel coppice now providing some valuable marginal cover for trout.



Photo 7. Sallows make excellent bank-top trees and in this example provide valuable in-channel cover.



Photo 8. Leaving the low branches to provide a fringe of cover at water level is to be encouraged but branches that are to be coppiced should be cut back close to the original stool.

In one particular location adjacent to the LB, the field narrows to a gate access very close to the river (photo 9). The stock fencing is in poor condition here and the river bank is eroding back. As this is such a vulnerable site and is located next to a narrow access point then it would be advisable to protect the river bank with a brushwood shelf, which if fenced off could allow a vegetated toe to develop.

In some locations the river channel is comparatively uniform in shape and lacks any flow pattern diversity (photo 10). Sections like this would benefit from the installation of large woody flow deflectors which when installed correctly can help to kick the flow patterns from one side to another. These diverse flow patterns are valuable because they help to sweep fine sediments from one location and safely lock them up in others, eventually creating a much more diverse shape to the river channel and ultimately promoting a more ecologically dynamic environment.

There are some good examples of naturally fallen woody material (photo 11), helping to support some high-quality habitat for invertebrates, aquatic plants and fish.



Photo 9. A narrow strip of land used as an access point immediately adjacent to an eroding bank. This is an area where some intervention is required.



Photo 10. A long, straight uniform glide. A section like this would benefit from the installation of large woody flow deflectors. The tree on the far bank is ripe for "hinging" into the channel.



Photo 11. A useful woody branch has fallen into the RB margin and is now helping to create diversity in flow patterns and potentially altering the physical shape of the river bed to create a high-quality lie for an adult trout.



Photo 12. Another example of poorly located fencing allowing bank top grazing to occur and ultimately leading to bank failure.

There are some good examples (photo 13) of where livestock is permanently excluded and the combination of well-established tree root systems on the outside of the bend and a sward of herbs and grasses on the inside is promoting an energetic channel that looks to be an ideal adult trout habitat. It was noted that the even where livestock is excluded, the amount of vegetation growing on the bank tops is thin, even where light penetration was good. This is thought to be due to extensive summer nettle and balsam growth which is leaving bank tops vulnerable to winter erosion and reducing plant species diversity.



Photo 13. High quality trout habitat.

4.0 Stocking

Whilst many land owners, clubs and commercial fisheries still stock rivers and streams with domesticated farm-reared trout, increasingly more fishery managers are realising the benefits of investing in better habitat management and a reduction or cessation of stocking, to see increasing numbers of wild trout repopulating the river. Fishing for wild fish in a wild environment is infinitely more rewarding than catching stocked fish. Some sections of the Frome are still regularly stocked with hatchery-derived fish but there is no doubt that the river here at Cuxton has the capacity to support a high-quality wild fishery and should not be augmented with any hatchery derived stock.

5.0 Conclusion

The River Frome here at Cuxton supports a diverse range of habitat conducive to supporting a high-quality wild trout fishery. There is no doubt that habitat quality would improve further with more sympathetic local land care. This reach, like many others on the Frome, is suffering from excessive siltation and agricultural diffuse pollution.

When only the sporting rights are owned, it can be very difficult to effect improvements without the support of the adjacent riparian land owner. Land owners and farmers have a duty to reduce the adverse effects of heavy grazing pressures and the insidious impacts of nutrient-rich sediments entering the river via poorly managed ditch systems and ad hoc sediment pathways. New Farming Rules for Water, introduced by Defra in 2018, place an onus on land managers to address issues leading to pollution of inland waters and it could be that inadequate fencing, such as is apparent here on the Frome, contravenes these Rules in that it exacerbates bank erosion. It is recommended to open a dialogue with farming neighbours to explore how there might be some improvements to local land management that will reduce erosion pressures, help to improve habitat quality *and* save land that is being lost to excessive bank erosion caused by the way that some of the land is currently being managed. Engaging with the local Frome and Piddle Association and the Environment Agency's Catchment Coordinator, to keep in touch with any local initiatives designed to improve land care and water quality, is recommended. The Dorset Wildlife Trust also has an interest in river conservation and they may be able to help advise your neighbours on techniques they could adopt.

Even without the support of the adjacent land owners, it is possible to enhance in-channel habitat for trout through the imaginative use of woody material. There are good examples of where trailing and fallen woody material are promoting enhanced habitat but there is scope for much more. The techniques involved are explained in more detail in various WTT publications and videos. For more information go to <https://www.wildtrout.org/content/habitat-improvement>

Due to the prevailing weather conditions, it was not possible to fully inspect the river bed gravels. Spawning success on many chalk streams can be impaired by silt laden, or naturally concreted gravels. Breaking up the crust of cemented gravels with a fencing spike and vigorously raking out the fine sediments in key spawning locations can help to boost trout recruitment. This work should be carried out in late October immediately prior to spawning season. The ideal locations and techniques are explained in more detail here:

<https://www.wildtrout.org/content/how-videos>

Concerns were expressed over the excessive bank-top nettle growth and also the presence of non-native Himalayan balsam. Nettle growth is often a problem on managed river banks where either previous dredging, or regular bank-top strimming has led to elevated soil nutrients. Unfortunately, even when permitted, bank-top spraying is no short cut to reducing excessive nettle growth. The best techniques involve cut and collect methods, where the cut vegetation is raked away and composted away from the river bank. Over time, the nutrient levels can be gradually reduced, allowing other native plants to successfully compete.

All of these techniques are labour intensive, but it might be possible to get help with tackling non-native balsam by mobilising volunteers for “balsam bashing” events. It is worth talking to the Dorset Wildlife Trust to see if they might be interested in helping you to combat the problem with targeted volunteer events. It is worth noting that if the currently-poorly fenced areas of river bank do become well-fenced, excluding livestock, some management of the areas inside the new fence lines will need management, to avoid a monoculture of balsam. This could be by mechanical cut-and-collect or by *controlled*, low density livestock grazing.

It is recognised that this section of river is not let as a commercial fishery and is kept mainly for family and friends to enjoy. With this in mind, there is nothing wrong with taking an even more relaxed approach to river management and maintenance. Wading is not for everybody, but easy entry and exit points can be easily made and occasional fishing from within the channel is extremely effective and does little harm to the ecology of the river bed. In our experience, wild trout stocks benefit hugely from a little neglect and it isn't necessary to trim, strim and cut weed to have a hugely valuable and productive wild trout fishery. One or two days work prior to bird nesting season to have a very light trim to facilitate the odd cast is all that's required to keep the fishery viable, always remembering how valuable trailing brashy material is when in contact with the river.

5.0 Recommendations

- Open up a dialogue with your riparian neighbours over measures designed to reduce sediment loads and bank erosion. Grants for new stock fencing might be available but wider buffer zones are needed.
- Make contact with other local NGOs who have an interest and responsibility for safe-guarding the River Frome. There may be initiatives designed to combat non-native plants and improve local land care and river habitat that could be pertinent to the Cuxton reach.
- Take a relaxed approach to fallen woody material. Only move it and re-secure it when it is essential to avoid excessive bank erosion. The WTT can help with a training day via a WTT Practical Visit (PV).
- Consider planting some low scrubby tree species such as willow and thorn species into the toe of eroded river banks to improve bank stability and create improved holding opportunities for adult trout. Concentrate on areas with access to direct sunlight.
- When undertaking any bank-top strimming to facilitate angling, all cut vegetation should be raked up and composted away from the river. Alternatively, cut back on path and bank-top strimming in favour of creating a few river entry and exit points and fish the river via wading.
- Spend a day in the autumn breaking up and cleaning gravels to help boost local egg to fry survival rates.

- Don't be tempted to introduce hatchery-derived stock fish. The river is perfectly capable of supporting an interesting and viable wild trout fishery.

6.0 Making it Happen

We have 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 www.wildtrout.org/product/rivers-working-wild-trout-dvd-0 or by calling the WTT office on 02392 570985.

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

7. Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for their continued support of the advisory visit service, in part funded by income from rod licence sales.

8. 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.