



Advisory Visit

River Dove

May 2018



1.0 Introduction

This report is the output of a site visit undertaken by Tim Jacklin of the Wild Trout Trust to the Derbyshire County Angling Club (DCAC) section of the River Dove, Crowdecote, Derbyshire on 1st May, 2018. Comments in this report are based on observations on the day of the site visit and discussions with members of the DCAC committee.

Normal convention is applied throughout the report with respect to bank identification, i.e. the banks are designated left bank (LB) or right bank (RB) whilst looking downstream.

2.0 Catchment / Fishery Overview

This section of the River Dove is located in the upper catchment, upstream of the village of Crowdecote. The river forms the boundary between Staffordshire and Derbyshire and is located on the edge of the White Peak area of the Peak District National Park. The river here also forms an approximate boundary between two distinct areas of geology, the left (Derbyshire) bank being primarily Carboniferous limestone and the right (Staffordshire bank) being gritstone and shales.

The fishery here is controlled by DCAC on the left bank and is fished on the right bank by Prince Albert Angling Society. The DCAC bank is also available to fish on the Peak Passport Angling Scheme. Wild brown trout are present here, along with a small population of grayling. Other fish species present include bullhead and brook lamprey. No stocking of trout or grayling has taken place here in recent years.

Land use has a great influence on rivers. The land use surrounding this part of the Dove is largely grazing and grass production for livestock. Whilst water quality and invertebrate (riverfly) populations are generally good, there is a chronic issue of enrichment, most likely from slurry/fertiliser runoff; this manifests itself in the excessive growth of algae on the bed of the river forming an olive/brown film. A recent review of data on invertebrates and fishery performance for the river below Hartington (a short distance downstream of this fishery) and Uttoxeter was carried out on behalf of the Dove Catchment Partnership. This found a mixture of good, moderate and poor biological signatures for nutrient-P (phosphate) enrichment or eutrophication, which

were, in all probability, dependent upon localised nutrient incursions. Visual photographic records of the state of the bed in the River Dove mirrored the biological signatures for sediment and nutrient down the river. It is important therefore that DCAC continue their riverfly monitoring and keep an eye on the condition of the riverbed; more information on the photographic recording technique can be obtained from Dr. Nick Overall of Aquascience.

Table 1 summarises the assessment by the Environment Agency of the section of river (waterbody) which includes the fishery. The assessment uses a wide range of criteria to produce an overall status, which can be *high, good, moderate, poor* or *bad*; anything worse than *good* is deemed to be a failure and requires improvement by 2027. If any one of the assessment criteria is worse than *good*, then the overall status is rated the same. In this case, the overall status has declined from *good* to *moderate* between the 2009 and 2016 assessment cycles; this is because of a similar drop in status for the assessment of fish. All other criteria remain at *high* in both assessment cycles. More detail can be found at

<http://environment.data.gov.uk/catchment-planning/WaterBody/GB104028057780>.

River	River Dove
Waterbody Name	Dove from Source to River Manifold
Waterbody ID	GB104028057780
Management Catchment	Dove > Dove Upper Rivers and Lakes
River Basin District	Humber
Current Ecological Quality	Overall status of Moderate ecological status in 2016 assessment cycle, declined from Good in 2009 assessment cycle.
U/S Grid Ref inspected	SK0937265727

D/S inspected	Grid	Ref	SK0998765159
Length inspected	of	river	c. 1100m

Table 1 Summary of information for the Water Framework Assessment of the waterbody which includes this fishery. From: <http://environment.data.gov.uk/catchment-planning/WaterBody/GB104028057780>

3.0 Habitat Assessment

3.1 General comments

The river here is around 4 – 5 metres wide and is largely riffle and shallow glide habitat. There are occasional deeper pools where scouring of the river bed is occurring, such as on the outside of meander bends or where a bedrock outcrop or woody debris pinches the flow.

Because of the generally shallow nature of the river, the importance of **cover** for fish cannot be over-emphasised. Overhanging vegetation, trailing branches and woody material in the channel provide a sanctuary for fish and make the difference between a pool or glide which will hold fish and one which will be empty. Specific examples are given below.

Improving access for angling needs to be considered very carefully in light of the importance of cover. Removing structure from the river to make a pool or glide easier to fish will often “throw the baby out with the bathwater” and remove the reason the fish is there in the first place. Very often, the snaggy, inaccessible (to anglers) areas are resting lies occupied by fish when they are not feeding or alarmed. The fish will venture out of these areas into feeding lies, often in surprisingly shallow water, where an angler who has made a stealthy approach can make a cast. The key to maximising good fishing potential is therefore to retain (or create) good resting lies close to good feeding areas (e.g. riffles at the head of pools/glides).

The DCAC bank (LB) is fenced off from livestock with a wide buffer strip between the river and agricultural land (Photo 1). The fencing was erected about ten years ago by Trent Rivers Trust (in combination with the development of the Peak Angling Passport scheme) and has allowed excellent riparian habitat to develop. The fence is probably the most important asset in

maintaining good habitat on the fishery and priority should be given to its maintenance and keeping it stockproof. The ongoing replacement of rotten posts and sections of wire is far less of a financial burden than replacement of the entire fence. The opposite bank (RB) is mostly fenced off, with one or two exceptions (see section 3.2); liaison with the landowner and fishing interests of that bank is recommended to limit stock access to the river as far as possible.



Photo 1 Stockproof fencing is one of the most important assets of the fishery and should be maintained as a priority. The pasture pump drinkers appear to be redundant and maybe could be re-deployed elsewhere.

3.2 Specific areas

At the downstream end of the fishery, a spring source enters the river from the right bank (Photo 2); these features are common on the upper Dove, emanating from the limestone geology on the Derbyshire bank (LB). The flows vary depending upon recent past rainfall, but the springs provide a valuable supplement to the base flow of the river. Just downstream of the spring confluence, the small sewage treatment works serving Crowdecote discharges to the river (Photo 3). This works is relatively modern and there are no

reported problems with the discharge; regular visual inspection is recommended to ensure this continues to be the case.



Photo 2 Spring source from the limestone geology of the Derbyshire bank; flowing strongly following a wet winter/early spring.



Photo 3 Sewage treatment works.

Just upstream from the sewage works are the remains of structures associated with a former corn mill. From the 1879 map (Figure 1), there appears to have been a substantial impoundment of the river (and possibly the spring) forming a mill pond. All that now remains is a stone-lined channel carrying the spring water, some rubble where the weir stood (Photo 5) and a low-lying, scrubby area where the mill pond was.

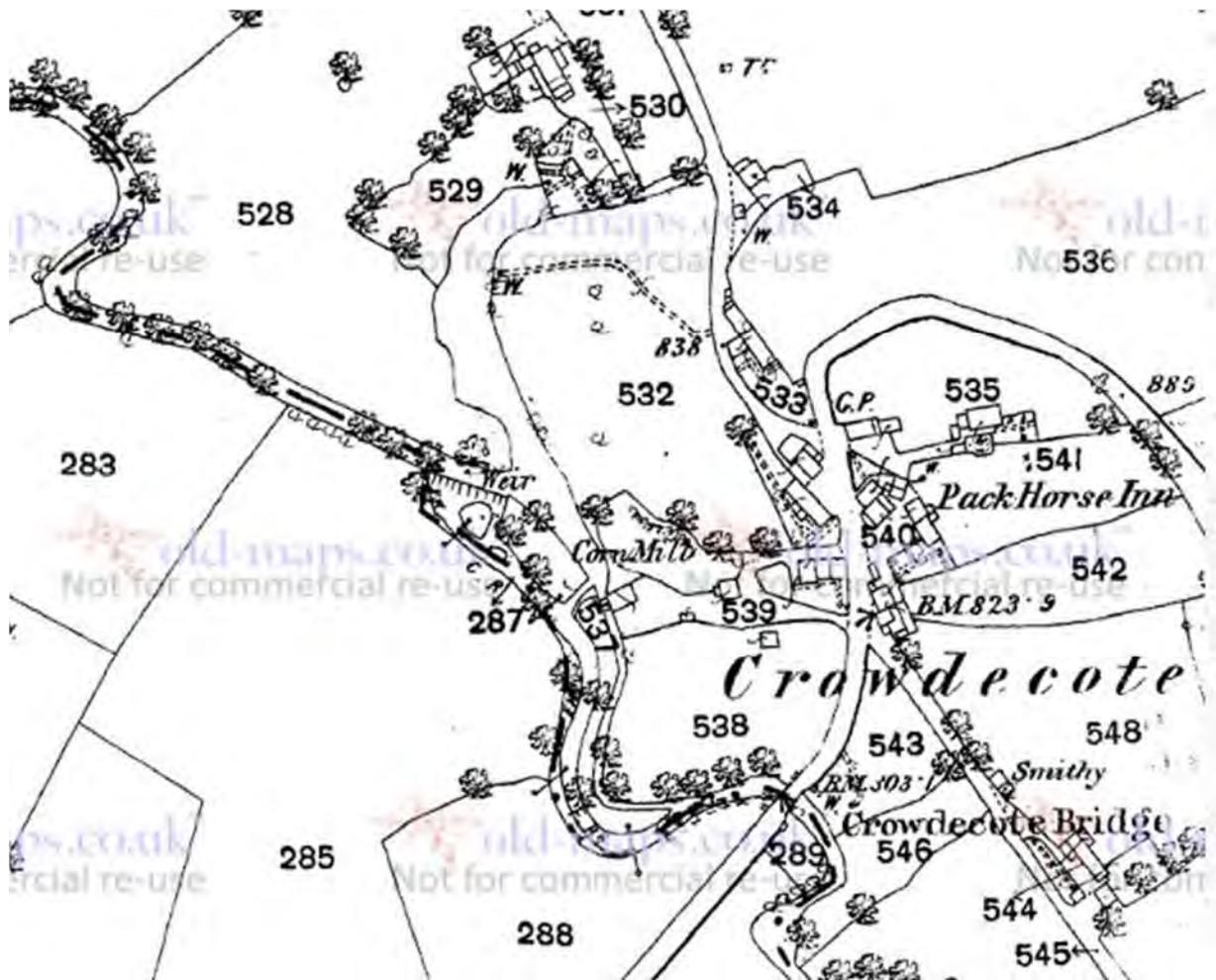


Figure 1 1879-1880 OS County Series Staffordshire. www.old-maps.co.uk

Despite the absence of the mill and weir, the straight reach immediately upstream (for circa 100m) shows evidence of regularly fluctuating water levels caused by water backing up; a "tide line" of about 18 inches of bare bank is visible above the water line (Photo 5). This is being caused by a substantial debris dam downstream of the old weir location (Photo 4).

The impounding effect the debris dam is having is preventing the reach upstream from reaching its full habitat potential, by reducing scour/erosion and promoting the deposition of fine sediment. There is also a substantial head difference across the debris dam (c. 0.7m) which could be a barrier to fish migration. For these reasons, it is recommended that the debris dam is carefully removed. As described during the site visit, this should be done in stages, with key supporting elements within the dam cut and/or removed with the aim of the river naturally shifting the structure during high flows.



Photo 4 Substantial debris dam near the downstream end of the fishery.



Photo 5 Reach upstream of the debris dam with remains of corn mill weir in the foreground.

Complete removal in one go is **not** recommended as this will release substantial amounts of accumulated fine sediment from upstream. Please note that this recommendation is an exception to the general rule of retaining woody material in the river to provide fish cover and refuge, as described in 3.1 above.

The straight section upstream of the old weir is wide and shallow with accumulations of fine sediment and shale gravel caused by the impounding effect of the debris dam. There are several fallen trees almost spanning the channel which should be left in place as they will create areas of scour and depth once the effects of the debris dam removal downstream start to be seen (Photo 6). There is scope for increasing the amount of cover in this section by introducing woody material to pinch the wider sections of channel; if stakes can be driven into the bed here, some of the material removed from the debris dam could be used to create a brushwood mattress. Tree kicker structures anchored to bankside trees could also be used (see recommendations for techniques).



Photo 6 Wide shallow reach upstream of old corn mill weir, with accumulations of finer sediment (arrow). Leave woody material in situ and observe the effects of the removal of the downstream debris dam. Then consider introducing more structure (brushwood mattress / tree kickers).

With progress upstream, there are many examples of good habitat provided by overhanging bushes, tree roots and fallen woody material. There are also several areas which could be improved. (Photos 7-14.)



Photo 7 Good overhead cover provided by the hawthorn bush overhanging the far bank (solid arrow). This type of feature should be preserved and encouraged. There is scope for better cover on the near bank (dashed arrow) and planting of willow whips/stakes could be tried here, with a view to hinging them over into the water in the future.



Photo 8 Good habitat likely to hold fish. The depth provided by the scour against the steep far bank is complemented by the in-stream structure and overhanging branches.



Photo 9 Submerged tree roots provide excellent cover for holding trout. In shallower areas, they can make the difference between a trout being present or absent.



Photo 10 Large woody material in the river channel. A trout was observed in the shallower water in the foreground here, which sought refuge in the structure/deeper scour upstream when disturbed. This illustrates the point in section 3.1 regarding the importance of retaining resting/refuge lies from which fish will venture into “catchable” positions when feeding.



Photo 11 A pool/glide area which has sufficient depth to hold a fish, but needs better cover. Attaching a tree kicker (far bank) and planting willow (near bank) are options here.



Photo 12 Large woody material in a narrower section of channel. Again, this is a feature which provides a sanctuary for fish from which they will venture out to feed, and should be retained.



Photo 13 Coppice re-growth (left of picture) is ideal for partially cutting and laying into the channel (like hedge laying), to provide instant cover.



Photo 14 Another area with scope for increasing the amount of cover to improve fish holding potential: tree kicker on the far bank and bush/tree planting on the near bank.

In the middle section of the fishery, there is a field on the LB which is not fenced. The end of the downstream fencing is bounded by a low, step-over section (Photo 15) – this should be monitored to ensure it does not provide an access point for livestock into the fenced area.



Photo 15 Make sure the low point at the end of the riparian fencing here does not provide livestock access into the fenced area.

In the unfenced section, the effect of grazing on the bankside vegetation is evident. Whilst the grazing is relatively light, it limits the development of taller herbage and prevents tree succession, so there are far fewer younger trees coming through compared to the fenced section. This limits the amount of cover available in the channel from overhanging vegetation, bushes and fallen trees, hence reducing the potential for holding fish. (Photos 16 - 17).



Photo 16 The unfenced LB section of the fishery (right of shot) has fewer trees and hence less cover and poorer bank stability.



Photo 17 As above, a wider view shows the lack of trees (and tree succession) immediately adjacent to the river. The lesser bank stability leads to a wider, shallower channel with less cover and less potential for holding fish.

With progress upstream, there is a large pool associated with a meander which provides good adult trout habitat. Hinging some of the overhanging branches here to trail into the margins would provide additional fish holding features (Photo 18). Immediately upstream of this pool, there is a fallen tree across a riffle; this is providing good cover and refuge habitat for juvenile trout and is not obstructing an area that would be fished, so should be left in place (Photo 19). Goosanders are common on the upper Dove, so any dense cover that can be utilised by smaller fish is valuable in reducing predation pressure.



Photo 18 Large pool on a meander. Hinging some of the overhanging branches into the water here will enhance the fish-holding features.



Photo 19 Fallen tree across a riffle – leave in situ as a refuge for juvenile trout.

Further upstream, the LB fencing resumes and bankside habitat improves. There is some fencing on the opposite bank, although ideally it should be located further away from the river's edge to allow tree succession and/or planting (Photos 20 - 21). There is a gap in the opposite bank (RB) fencing for the length of one field where there is evidently stock access for watering. The livestock are also crossing the river here and grazing the LB; a second fence on the LB (in addition to the Passport Scheme fence) prevents livestock access within the wider buffer strip, but is not protecting the immediate bankside habitat (Photo 22). Ideally, an alternative water source should be provided and the RB fenced off, or a drinking area created along with fencing which prevents livestock from crossing the river. Liaison with the RB landowner and fishing interests is recommended.



Photo 20 Right bank habitat would benefit from the fence being set back. Willow could be planted here to provide better cover on that bank. Hinge the tree (arrow) into the margins.



Photo 21 Better bankside vegetation resumes in the fenced area (LB, right of shot).



Photo 22 The unfenced section of the RB (far bank). Livestock are crossing the river and impacting upon bankside habitat quality on both banks. The fence visible in the picture prevents access into the buffer strip which is fenced off further back from the river (out of shot, right of picture). RB fencing and a proper cattle drink would greatly benefit this area.

At the upstream extent of the section in Photo 22, there is an accumulation of woody material where several alder trees have collapsed into the river from the steep LB (Photo 23). This is providing some valuable in-stream structure, but could be enhanced and made more accessible for angling by removing some of the higher level branches and wedging them at the back (bank) side of the structure.

On the RB opposite the woody material, the bank is low with a gravel point bar (Photo 24). This could provide an area for controlled livestock watering from the RB by installing waist-high, cross-channel barriers (such as telegraph poles) to delineate an area between bankside fencing (see recommendations). The use of the redundant pasture pumps noted above could also be explored.

Further upstream towards the upstream boundary, there are opportunities to improve cover and fish-holding potential along areas of glide habitat (Photos 25 & 26).



Photo 23 Retain the woody material in channel, but cut some of the higher branches and wedge behind the structure.



Photo 24 The low RB could be an area where a livestock drinking point is created in conjunction with fencing. Drinking points still have an impact on the river (concentrated bank damage, faecal inputs) and require regular maintenance, so complete livestock exclusion and an alternative means of watering is the ideal solution.



Photo 25 Fix tree kicker structure and/or hinge trees on far bank to improve cover.



Photo 26 Hinge tree into the river.

4.0 Recommendations

- Maintain the existing fencing along the river and keep it stockproof. This is the single most important factor in maintaining good habitat on this fishery.
- Liaise with the landowner and fishing interests on the opposite bank (RB) to improve and extend the fencing there, in particular, the area highlighted in Photo 22. The ideal solution would be complete exclusion of livestock and provision of an alternative watering source. It may be possible to utilise pasture pumps, depending upon the requirements of the livestock. If complete exclusion is not possible, a livestock watering point similar to Photo 27 could be created here if the RB was fenced.



Photo 27 Example of livestock drinking area tied into bankside fencing. If only cattle are present, just the telegraph poles (without the hanging panels) will suffice and have been used successfully on the Dove downstream of Crowdecote.

- Remove the large debris dam at the downstream end of the fishery, doing so in stages over a period of 1 -2 years. Weaken the dam by removing key supporting pieces and allow the river to gradually break through and move accumulated fine sediment during high water events.

Introduce more structure to the straight channel section upstream (Photos 5 & 6) in the form of brushwood mattress (Photo 28) and tree kickers (Photo 30).



Photo 28 Brushwood mattress. NB stakes must be driven into the riverbed for this technique, so check this is possible first.

- Adopt a policy of retaining woody material in the river channel to provide cover and refuge habitat / resting lies for trout. Good cover is absolutely critical in increasing the fish holding capacity of a generally small, shallow river like this.
- Introduce more cover to the areas identified in section 3.2 (and similar). This can be achieved by hinging suitably located trees (similar to hedge laying) or making a tree kicker by fixing a tree/bush to a suitable anchor point on the bank with cable.



Photo 29 Smaller trees partially cut and laid to create good cover.



Photo 30 A larger tree, felled and attached to its stump with cabled wire.

- Plant trees in areas where they can be used in future years to hinge and provide cover. Willow species such as goat and grey willow would be

suitable and could be sourced locally from cuttings. Some suitable trees were identified on the visit just upstream of Beggar's Bridge.

- Continue to keep a watching brief on water quality using the Anglers' Riverfly Monitoring Initiative (Riverfly Partnership). Keep an eye on the sewage works discharge for visual signs of pollution (e.g. sewage fungus).
- Promote the fishery within the club as a wild brown trout fishery, providing challenging but highly rewarding fishing and requiring skill and stealth to achieve success. A fishery of this kind cannot be expected to fulfil the expectations of all anglers and trying to change it to do so (e.g. by clearing out cover or stocking fish) would be unsuccessful and spoil the existing potential. Stocking was discussed during the site visit and this is strongly advised against. Introduced fish would not hold in this environment and would be very likely to disrupt and displace the wild fish present, leading to an overall decline in fish numbers. The fishery could probably support a maximum of two anglers at any one time and a policy of catch-and-release fishing is recommended (see www.wildtrout.org/content/wild-trout-fishing#Catch%20and%20release).

Please note, it is a legal requirement that all the works to the river require written consent from the lead flood authority (usually either Environment Agency or County Council) prior to undertaking any works.

5.0 Making it Happen

Further assistance from the Wild Trout Trust is available in the form of:

- Helping obtain the necessary consents for carrying out in-stream works, from either the local authority or Environment Agency (depending upon whether the river is a designated Main River or not).
- A practical visit, which involves a visit from a WTT Conservation Officer to demonstrate the techniques described. This enables recipients to obtain on-the-ground training regarding the appropriate use of conservation techniques and materials, including Health & Safety, equipment. This will then give projects the strongest possible start

leading to successful completion of aims and objectives. Recipients will be expected to cover travel expenses of the WTT attendees.

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/library>

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.

6.0 Acknowledgement

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7.0 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. Accordingly, 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 comments made in this report.