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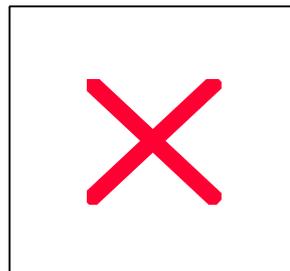
Consultants : Freshwater Fisheries, Conservation & Wetland Ecology

## Report on one day visit to Chenies Fishery R. Chess

### Summary

1. Fencing both banks under Countryside Stewardship Scheme will benefit river habitats both for fish and water voles substantially. A river bank zone of 3-5 metres inside the fence is ideal, the actual width is best discussed with the riparian owner.
2. Water-jetting silted gravels, if done correctly, will improve trout spawning success.
3. Modifying existing in-stream woven hazel structures will greatly improve trout pools.
4. Adding lots of extra physical cover will improve trout survival, especially from heron predation.
5. De-silting the stretch above the Mill could be done in winter via the sluice but care is needed.
6. The river looks ideal for grayling and stocking is recommended.

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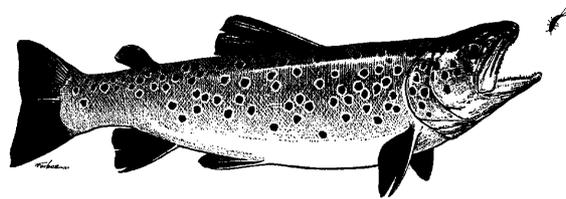


## Introduction

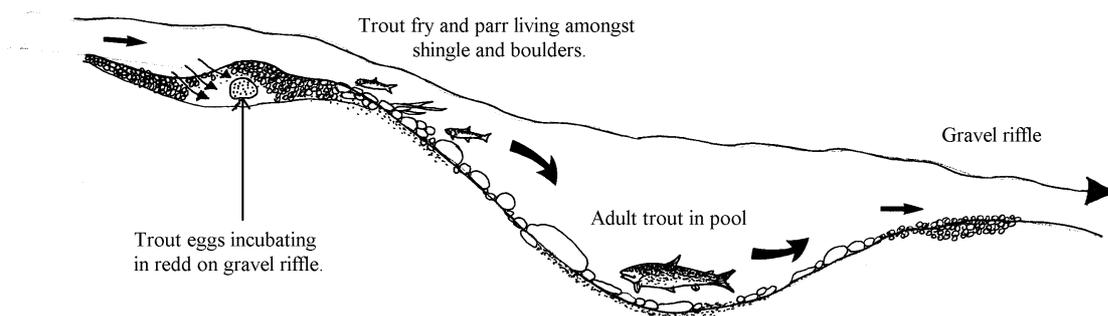
This one-day visit was made possible by The Wild Trout Trust advisory scheme, funded by English Nature. The River Chess at Chenies is a nice chalk stream with good potential for wild trout production. The fishery splits nicely into an upper spawning / juvenile habitat area, an intermediate set of glides suitable for maturing and adult trout and a slow, deep final section which will hold big old fish (both trout and grayling). A modest amount of habitat improvement, over and above what has been done already, will greatly boost this potential. The proposed stocking of grayling (which are present downstream) appears to be a sound idea. The de-silting of the impounded section above the Mill requires careful handling and may best be done gradually.

## Specific recommendations

### Overview



Brown trout need good, clean flows, relatively silt-free gravel for spawning, abundant cover from predators and a nice varied sequence of shallow riffles, weedy glides and deeper pools. The diagram below shows how a short section of good habitat can provide everything a wild trout needs throughout its life cycle:

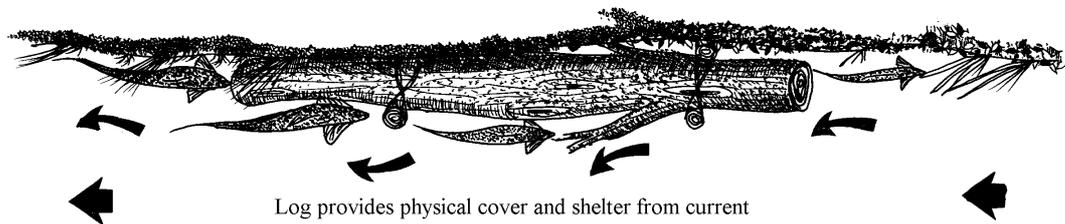


The loan of an Environment Agency water-jetter (water pump + lance) should be taken up. It is now late in the season to jet gravels (trout spawning may start before long) but next year, in late September, the areas indicated on the following maps should be thoroughly cleaned to a depth of around 30cm. Start the operation at the top end of the fishery and chase the silt downstream. Warn your downstream neighbours that some coloured water may come their way. Split up the work so as not to mobilise too much silt

at any one time. Brown trout, grayling, bullheads, water crowfoot (*Ranunculus*) and a wide range of invertebrates benefit from de-silted gravel shallows (riffles).

Trout parr (fish of up to a year's age) need relatively shallow water with cover from weed beds, boulders or deadwood (logs) staked securely along the margins. The cover serves to offer fish hiding places from predators such as herons and, also, to break up the habitat so that more territories can be fitted into the available space. Logs pinned close to the bank should have a 6inch gap left underneath them.

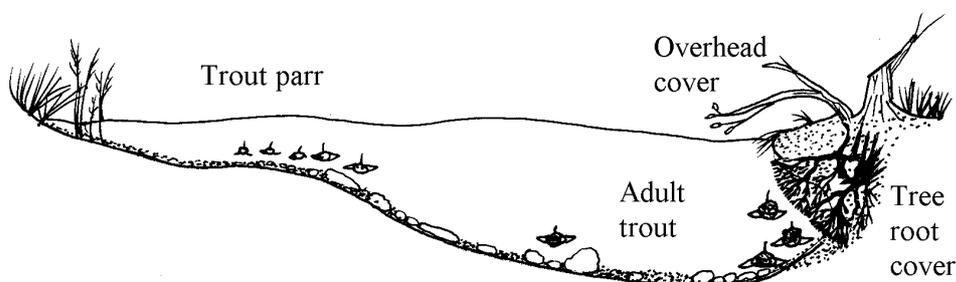
Trout using dead wood cover feature - staked close to well vegetated bank.



An electric-fishing survey at Chenies recently revealed that the pool on the bend with the overhanging willow tree was the favoured sanctuary for the majority of the adult trout. Why should this be? The answer lies in the key habitat requirements of the fish, namely:

1. Adequate depth (the pool is on the outside of the bend and probably has a deepened section and under-cut bank).
2. The current speed in the pool is not excessive (fish can lie there comfortably without burning up too much energy and drifting food is brought in on the current).
3. The willow provides excellent overhead protective cover - this is vital for wild brown trout to take up residence in numbers.

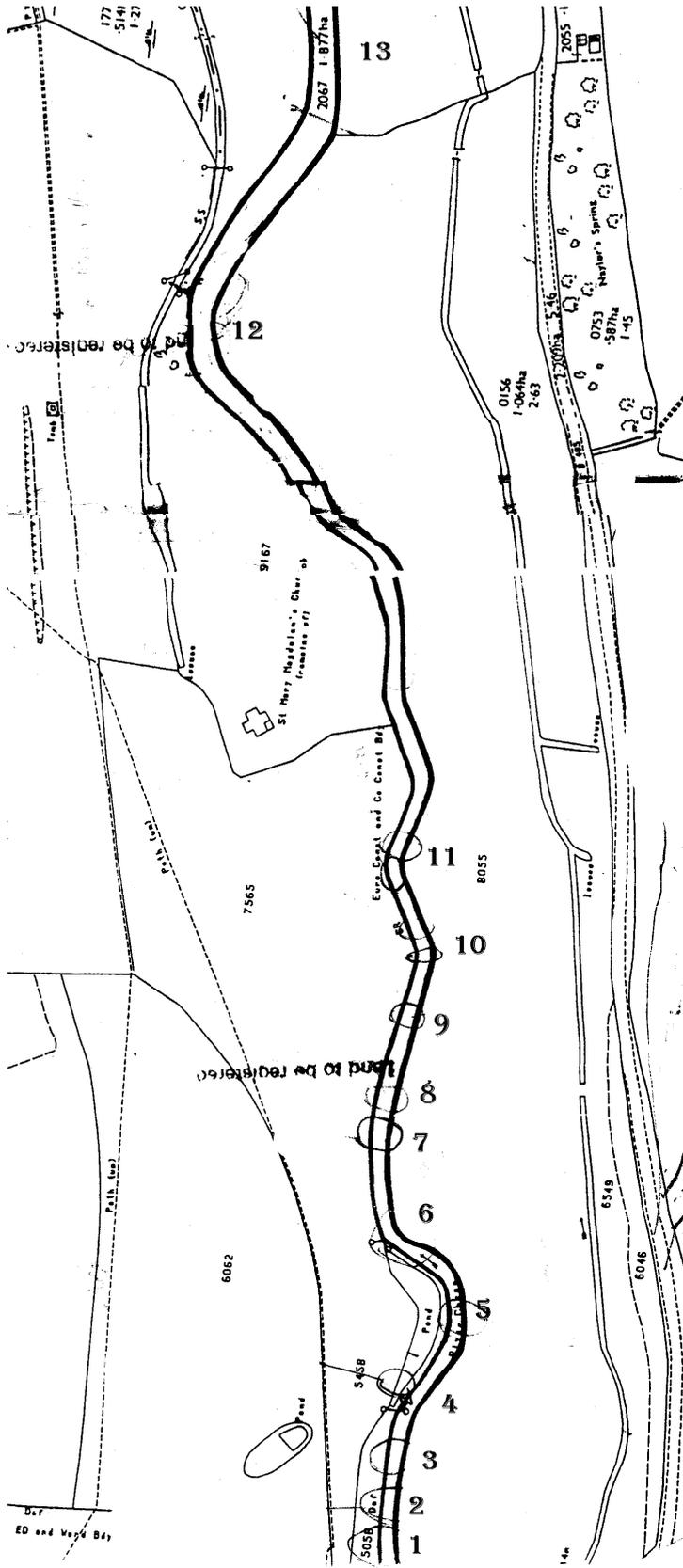
Trout use of a well covered pool



Good habitat management seeks to extend the amount of this sort of habitat available within the fishery. Care is needed to put pools in the right places, to make sure that they will provide suitable trout lies and to equip them with lots of cover.

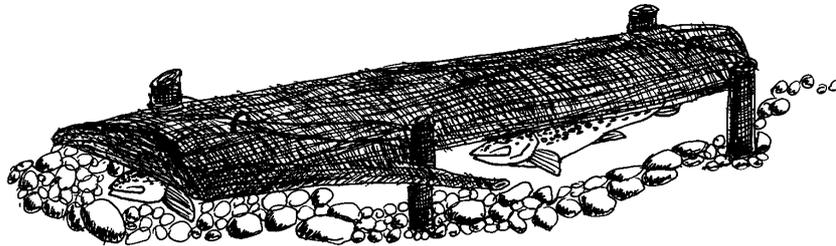
The following numbered recommendations relate to the numbers on the maps.

Upper stretch



1. This gravel shallow would benefit from gravel-jetting to de-silt a bar across the channel. The width of the bar depends upon how much time you have available - aim at a minimum of 3 metres from the upstream to downstream edges. Remember that silt can be viewed as a pollutant and so should only be moved downstream in moderate quantities - a little at a time is best.
2. This pool is too fast for trout to lie in with any degree of comfort. This will only get worse at higher flows. I recommend that the gap in the centre is increased by 1 metre and that cover boards (oak, elm, whatever is available) are added down both sides of the pool:

Half log cover board staked to river bed



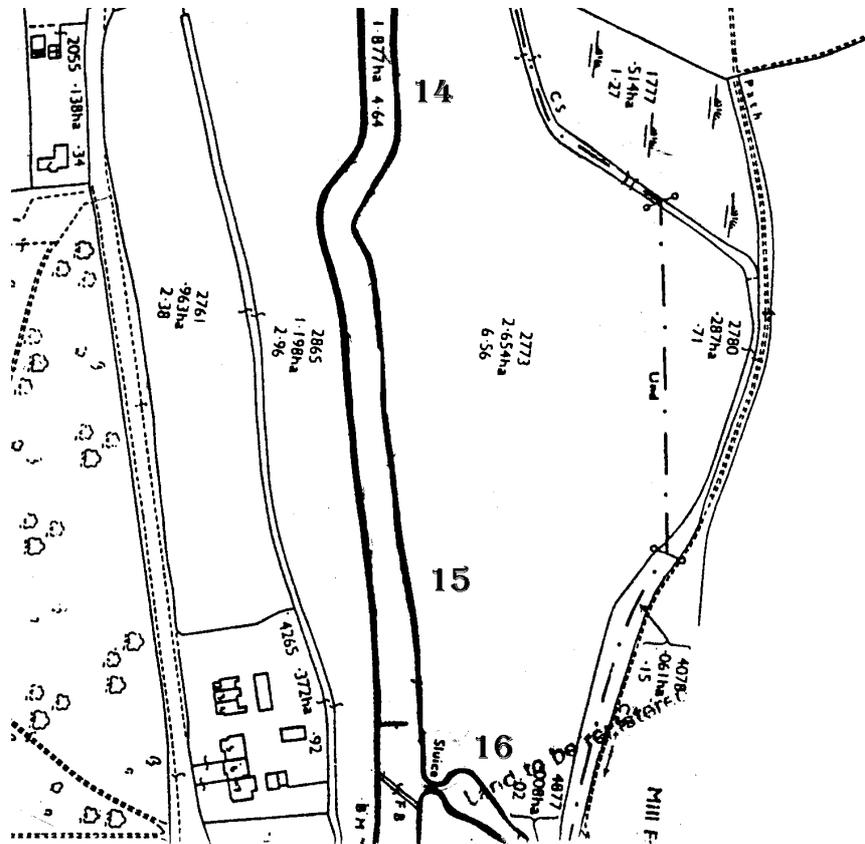
safe cover is provided for two adult trout

The board will not rot as long as it remains submerged.

3. This area is worth gravel jetting as in 1.
4. The breaking out of the channel into a secondary 'braid' provides good potential juvenile trout habitat and I would leave it as it is. It would be worth gravel-jetting the top end of the new side channel to provide more spawning habitat. To stop too much water going down this channel at the expense of the main channel it would be worth staking the point of the bank where the breach has taken place to stop it widening too much.
5. This pool is also a bit fast and too open for many trout to take up permanent residence. I would elongate the pool to 5 metres length, around 1 metre wide and up to 50cm deep. The digging should take place along and under the roots of the alder trees. This will make the pool an excellent well-covered lie for both wild and stocked trout.
6. This broad shallow is good potential juvenile trout habitat but it is very open. I recommend staking securely some logs and small cover boards in the shallows to provide year-round cover from heron predation.
7. This pool is too fast for trout. I would double the gap at the head of the pool and add plenty of lateral cover from securely staked logs and cover boards.

8. The gravel riffle deposited via the river scouring the pool is worth water-jetting each year to de-silt it prior to the spawning season.
9. Here, I would remove the left hand groyne (looking downstream) to allow the river to cut the pool under the hawthorn bush. Then add cover boards/logs along the edge of the pool to create good adult trout habitat.
10. This very deep pool needs some cover along the edges. The gravel shallow downstream is worth water-jetting if you have time.
11. This natural corner pool could be improved by some extra depth/length and better cover. The riffle downstream is worth water-jetting.
12. This is the natural corner pool which has all the key elements of adult trout habitat....and holds lots of adult trout!
13. This lower stretch is over-wide, probably owing to bank damage by cattle and over-deep owing to the impoundment created by the Mill. Consequently the section is prone to silting up at regular intervals. The channel narrowing with woven hazel panels is working well - concentrating the flow and sweeping away fine silt to expose a deeper channel where fish will hold station. Large trout (and grayling) will like this stretch. The reed sweet grass beds are good water vole habitat.

## Lower stretch



14. The dilemma in this section is how to shift the large quantities of silt at reasonable cost with minimal environmental impact. Secondly, the river is breaching its right hand bank at several points and running across to join the lower carrier. The whole state of this section of river can be addressed through careful management of the sluice gate upstream of the Mill. This sluice is there to regulate flows and is an obvious way a reducing river levels to below the level where the bank will be breached.
  
15. It is strongly recommended that an Environment Agency flood defence engineer is asked to visit this sluice to advise on its current state of repair and operational use. It would appear (on superficial inspection) that the sluice structure is sound and can be used to raise the gate by small degrees to finely control upstream river levels. Once the sluice gate is raised by (say) just a few centimetres, silt will be sucked through and carried downstream. Careful management of this sluice, coupled with the deliberate moving-on of silt from the river using a long-handled 'mudding' board would allow the progressive de-silting of the channel. A mudding board is simply a light weight wooden (or plastic) sheet of around 3 feet square firmly attached to a pole and used to waft silt from the bed, into the current, to be swept away downstream. The operator of the long-handled board could stand in a boat and be manoeuvred around by colleagues controlling the position of the boat via ropes. Care will be needed over:
  - Safety issues whilst working from the boat
  - Notifying your downstream neighbour(s) that you will be mobilising silt
  - Judging the degree to which the sluice should be opened and the quantities of silt which it is reasonable to move over any given period. The Environment Agency may be willing to offer advice on this matter as silt (suspended solids) can be viewed as a pollutant. If the 'mudding' is done when flows have picked up in early winter so that there is plenty of water to carry silt away and as long as not too much silt is moved during any single phase of the work, there is the potential to make a big difference to the fishery at minimal cost. A surprising amount of silt can be moved with a sustained effort spread out over several occasions.
  
16. An alternative approach is to mechanically excavate or sludge-pump the silt onto the adjacent meadow, having first ascertained from the Environment Agency that the silt is not contaminated and having obtained permission from the farmer. This latter approach may be feasible and (if pumping will work) may not be hugely expensive. The best approach would, however, appear to be to use the river to de-silt itself, via the sluice, on a 'little at a time' basis. After all, the silt arrived in the fishery via the river and would naturally have carried on downstream were it not for the closed sluice and Mill gates.