



River Meon – Mayles Lane Syndicate



An advisory visit carried out by the Wild Trout trust – 16/05/2008

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on the Mayles Lane reach of the River Meon on 16th May 2008.

The Mayles lane fishery is located on the lower reaches of the river Meon, approximately 2 km downstream of Wickham. The beat comprises 1365 m of double bank fishing and a further 250 m of single bank.

The comments and recommendations made in this report are based on the observations of the Trust's Conservation Officer and discussions with syndicate members Denise Ashton and Robin Tarrant. 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.

The River Meon rises from the Hampshire chalk aquifer near the village of East Meon and flows south for approximately 37km in length before entering the sea at Hill Head. The river enjoys a relatively steep gradient for a chalk river, falling approximately 120m from source to sea. The river flows over deposits of Lower Chalk which is less permeable than the Upper Chalk geology predominantly found in the rest of the East Hampshire. As a result the Meon tends to have a greater flow range compared to other southern chalk streams.

For much of its length the river displays the classic chalk stream characteristics of clear water, low soft margins and an abundance of in-channel macrophytes dominated by watercrowfoot (*rannuculus aquatilis*), starwort (*callitriche stagnalis*) and water moss (*fontinalis antipyretica*). As with most chalk rivers the channel is heavily modified and in-channel habitats are heavily influenced by the numerous structures and milling impoundments found throughout its length.

Fishery surveys of the Meon conducted by the Environment Agency have concluded that the river Meon is "a productive brown trout river". Survey sites fished upstream of Anjou Bridge have also recorded significant numbers of sea trout during August, this site being only approximately 3km downstream of the Mayles Lane reach.

2. Habitat assessment

2.1 Channel form

The Mayles lane reach supports some of the best wild brown trout and sea trout habitat to be found on the Meon, particularly on any of the reaches found downstream of Wickham. This may be particularly significant for sea trout stocks that are known to migrate through this reach during the late summer and early autumn period.

The in-channel morphology is shaped by the comparatively steep gradient and assisted by a relaxed approach to river management, which has resulted in the formation of suitable habitats for all life stages of brown and sea trout (*salmo*

trutta). Classic “pool, riffle, glide” habitat can be found throughout the entire reach with the full range of habitat types required to promote successful spawning, safe nursery zones and a numerous high quality holding pools.

Much of the River Meon tends to be heavily impacted by anthropogenic influences such as numerous weirs, mills and structures that severely impact on local habitats and disrupt the natural connectivity of the river as a whole. Although one small redundant structure was observed near the bottom boundary of the beat, overall the shape and form of the channel was considered to be very natural, with little evidence of previous dredging or re-alignment.



A typical example of the Mayles Lane reach

The comparatively steep gradient and dynamic form of the channel has not discouraged the formation of several large meanders, which are often more synonymous with lower sections of river where the velocities are generally slower. On one such bend there was evidence of the river potentially trying to cut a new course which will eventually create the classic oxbow feature.

Such unbridled movement is rarely allowed to go unchallenged on Hampshire chalkstreams. Where such movement is deemed acceptable to the landowners it should certainly be encouraged. New habitats are created through the provision of eroded aggregates, ideal for enhanced spawning and the slack shallow

margins of redundant loops often provide exceptional juvenile habitats for a range of fish species.



Evidence of overtopping on the apex of a large bend

Of particular note throughout the reach was the significant quantity of what appears to be excellent spawning habitat. The comparatively unusual combination of good salmonid spawning habitat adjacent to ideal lying up spots for broodstock is relatively uncommon on much of the river but was evident throughout this particular beat.

It was surprising therefore, to hear reports that the rod catch for the fishery was a little disappointing with only modest catches reported. These reports correspond with the author's observations on the day when very few fish were seen, especially given the fact that reasonable numbers of mayfly were hatching at the time.

Given the apparent quality of the habitat observed and the relatively light angling pressure exerted on the fishery, it is somewhat disappointing that the fishery is not teeming with trout. The general productivity of the Meon as a whole is quite high, despite much of it being far inferior in terms of channel morphology to the Mayles lane beat. While the decades of relative neglect have benefited the in-channel habitats through the provision of significant quantities of large woody debris (LWD), which has helped to shape and sort habitat for all life stages of trout, the same neglect has led to considerable over shading of the channel. This may well be having an adverse effect on the productivity of the fishery as a whole.



A great example of a deep covered run adjacent to excellent spawning gravels



Another example of good channel form but this time heavily shaded



**LWD scouring a holding pool and depositing gravels further downstream.
Perfect trout habitat**



Excellent spawning and juvenile habitat near the bottom of the beat which has benefited from significant tree work to the left hand bank promoting in-channel weed growth.

2.2 Riparian habitat

There is no doubt that tree shading of a river channel has a big impact on the overall condition of a chalkstream. Too much and the instream and marginal vegetation can be suppressed, reducing valuable cover and sometimes leading to excessive erosion. Too little with the result that summer water temperatures can climb to levels uncomfortable or occasionally lethal to trout.

In an ideal habitat the river channel should be exposed to a mosaic of dappled light and shade with a ratio of approximately 60: 40 in favour of availability to incident light. My very rough assessment of the Mayles lane beat suggests that perhaps the overall ratio is more like 70: 30 in favour of shade.

Low marginal overhanging branches can play a vital role in providing a supply of terrestrial food items as well as cover from predators. Leaving this rich habitat but opening up the higher canopy to allow incident light to hit the centre of the channel is the ideal balance to aim for.



A section of channel near the bottom of the beat where significant tree work has allowed in more light – Large mature alders still dominate the sky line.

Tree work already carried out by the fishery owner and syndicate members has been executed very sympathetically, with good use made of some of the LWD. Much more is required however, with some very large crack willow *Salix fragilis* and big stands of alder *Alnus glutinosa* in need of pollard and coppice. The pollarding and coppicing of these species as well as a range of others including ash, chesnut and hazel is a sound way of preserving the tree and its valuable root systems but allowing the all important light to the channel.

Rotational coppicing of the riparian trees on the LB in particular will reduce shading of the channel, increasing the growth of fringing marginal cover. Care should be taken to coppice no more than 30% of the trees in single season. A second cut can be made after 5-10 years, depending on the speed of re-growth. This will ensure retention of a mixed aged stand of trees, with benefits to both aquatic and terrestrial ecology.

Tree work must be carried out in the dormant winter period when nesting birds are not likely to be disturbed. Care must also be taken to avoid damage to roosting bat colonies which are protected by law. A felling licence is sometimes required and it is advisable to liaise with your local authority and the forestry commission if you intend to embark on any significant tree work. Any LWD used to enhance in-channel habitats should be effectively anchored to the bed or bank with stakes or heavy gauge wire to avoid any potential flood risk, should the material be washed downstream and potentially cause a blockage at a vulnerable location.

The river Meon does suffer from intensive agricultural practises, particularly in some of the headwater areas. The land adjacent to this particular reach was managed quite sympathetically with no evidence of the intensive arable farming commonly found further up the catchment.

2.3 Spawning habitats

The quantity of spawning habitat available, as already stated in section 2.1 is not thought to be a limiting factor in overall trout production. The quality of those habitats in terms of overall productivity may however be an issue. A number of studies have been carried out on chalkstreams looking at intra-gravel survival of salmonid embryos. Work carried out by Scott and Beaumont in 1993 estimated that egg to swim-up fry survival of juvenile salmon on some chalkstreams was as little as 4%. Similar poor survival of trout eggs could also be expected. Once hatched, a good percentage of chalk stream trout fry will survive and grow very fast, particularly compared to those born in upland or free stone rivers. Improving trout egg survival is thought to be of fundamental importance in this particular reach where the size and quality of the nursery habitat should support a strong wild trout population.

In order to improve spawning success and subsequent hatch rate of egg to swim-up fry, cleaning of the gravel during the early autumn would be of great benefit. This can be done in a variety of ways. A tractor mounted cultivator, high-pressure water jet and hand digging are all acceptable ways of cleaning sediment from the gravel prior to the trout spawning season (November -

January). All areas of gravel should not be cleaned in one season, as this could prove disruptive to macroinvertebrate populations. Work should progress in a downstream direction so that disturbed silt does not settle on previously cleaned sections. Disturbed silt should not be allowed to adversely affect downstream neighbour's interests. It would be prudent to contact the Environment Agency to alert them to the fact that gravel cleaning is taking place.



Gravel washing using a high pressure pump and steel lance

Conclusions

The physical channel characteristics and associated habitats created should sustain an excellent wild trout and sea trout fishery.

The significant shading of the reach as a whole may be limiting productivity.

Production of juvenile trout may be impaired by siltation of spawning gravels.

The comparatively modest trout catches reported suggest the fishery is not currently reaching its full potential.

Monitoring of juvenile trout populations and macroinvertebrate surveys may help to confirm this apparent lack of productivity.

Physical enhancement works could be kick-started with the assistance of a WTT 'Practical Visit' (PV). PV's typically comprise a 1-3 day visit where an approved WTT 'Wet-Work' experts will complete a demonstration plot on the site to be restored. This will enable project leaders and teams 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.

The WTT can fund the cost of labour (two/ three man team) and materials (max £1800). Recipients will be expected to cover travel and accommodation expenses of the contractor.

Wet-work experts will demonstrate one or more of the following techniques that are appropriate to the site.

It is a legal requirement that some works to the river may require written Environment Agency consent prior to undertaking any works, either in-channel or within 8 metres of the bank. Advice can be obtained from the local Development Control Officer.

Recommendations

- **Continue with the work already started to increase the amount of incident sun light reaching the channel**
- **Make good use of any LWD, particularly on shallow spawning riffles**
- **Carry out a programme of autumn gravel cleaning on selected riffles**

References

Scott, A. & Beaumont, W. R. C. (1993). Improving the survival rates of Atlantic salmon (*Salmo salar* L.) embryos in a chalkstream. Institute of Fisheries Management, Annual Study Course. Cardiff 1993.

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