



**River Meon at Titchfield
Park Gate Royal British Legion Flyfishing Club**



An advisory visit carried out by the Wild Trout Trust – July 2009

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on the River Meon at Titchfield in Hampshire. The advisory visit was undertaken at the request of the Park Gate Royal British Legion Flyfishing Club. Comments in this report are based on observations on the day of the site visit and discussions primarily with Paul Gibbon and Peter Wood representing the fishing club.

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.

2. Catchment overview

The River Meon rises from the Hampshire chalk aquifer near the village of East Meon and flows south for approximately 37km before entering the sea at Meon Shore near Hill Head. The river enjoys a 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 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 water crowfoot (*Ranunculus 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 (EA) have concluded that the river Meon is "a productive brown trout river". The Meon is also noted for a strong run of sea trout although they are rarely targeted by anglers on this system. Sea trout are known to run upstream of Droxford during wet years and the EA have plans to improve access for migratory fish on this system.

3. Fishery overview

The River Meon controlled by the PGRBLFC runs for approximately 2km from the M27 road bridge crossing down to the village of Titchfield. On this stretch, the River Meon is flowing over tertiary sands and gravels rather than chalk and this influences both flow patterns and channel form.

On the downstream section below Anjou Bridge the river separates into two channels. A small natural channel meanders down the eastern edge of the flood plain and a larger milling channel, which is impounded by the Titchfield Mill, flows to the west, continuing downstream via the old Meon Navigation. The two channels eventually meet in Titchfield Haven which is a large freshwater lagoon

and nature reserve maintained by tidal flap gates. From here the Meon spills across the beach into the Solent.

The fishery is currently used and predominantly managed as a stocked brown trout (*Salmo trutta*) fishery. Significant numbers of sea trout, some small wild browns, grayling and numbers of mixed coarse fish are also to be found in this reach.

The fishing club is particularly keen to focus on ways of further improving the wild salmonid stock through targeted habitat enhancement works and sensitive maintenance regimes. The club also wishes to ensure that their stocking programme provides optimum sport for the club's 40 strong membership without compromising the wild component of the Meon trout stock.

Sea trout are known to hold and run through the fishery but few anglers from the club target them and they currently do not significantly contribute towards the annual rod catch.

4. Habitat assessment.

The fishery can be broadly divided into four distinct beats:

1. The top beat above Anjou Bridge
2. Anjou Bridge down to Titchfield Mill (mill channel)
3. The natural eastern river channel from Anjou bridge down to the A27 road crossing
4. The section below Titchfield village which was not inspected as part of this report.

4.1 Top beat – M27 to Anjou Bridge

The fishing club enjoys access to the Meon initially from both banks up to the railway bridge and then from the LB up to a short distance above the M27 road crossing. Most fishing activity tends to take place on the double bank reach between the railway bridge and Anjou Bridge.

The section immediately upstream of Anjou Bridge is predominately deep and slow flowing and appears to be under the impounding influence of the milling structure down at Titchfield. The very limited capacity through the two small arches under Anjou Bridge may also act as a significant impoundment. The bridge is believed to be extremely old and is in all probability a listed structure so there is limited scope for pulling the water through.



The small arches of the Anjou Bridge probably impound the river in the meadow above.

Despite the apparently poor habitat for trout, this section is very popular with club members and does hold stocked trout and is also a known holding area for migratory sea trout.

The section is characterised by glide habitat with occasional deeper pools and on some sections significant marginal shading provided mainly by alder trees (*Alnus glutinosa*) on the LB. In-channel weed growth appears to be dominated by submerged and emergent beds of ribbon or strap weeds (*Sparganium sp*). Some startwort (*Callitriche stagnalis*) was seen on shallow glide sections where there is sufficient light penetration.

Very little spawning or juvenile trout habitat was identified on this reach, however there are shallower sections with potential for spawning on the section immediately downstream of the railway bridge.

On the section between the railway bridge and the M27 bridge, there are numerous pools and shallow glides. Despite the heavy marginal shading from trees located mainly on the western bank, there is some excellent holding water for adult trout.

It is understood that, because of poor access and heavy poaching pressures, this reach is not as heavily used by the fishing club members. The comparative lack of channel and tree maintenance was obvious but this in turn had promoted some good quality in-channel habitat, particularly where trees had fallen, creating dappled light and vertical bed scour, freeing up good quality gravels for spawning and providing excellent lies for adult trout.



Decent habitat for trout above the railway bridge although spawning sites were mainly restricted to the very top of the beat



Typical habitat on an unshaded section of the reach above Anjou Bridge. Note the ribbon weed which although not synonymous with brown trout is known to be a favoured habitat for holding sea trout.

Considerable scope exists for improving the spawning and nursery habitat that exists at the very top of the beat. Some earth works have been undertaken on the RB immediately adjacent to what is probably the best spawning site on the top stretch. The planting of an arable crop on a steep slope so close to this

section is also undesirable. Comments and recommendations regarding this section appear later in the report.



The Meon near the M27 road embankment. Good spawning habitat potentially threatened by inappropriate land use on the RB

A close eye should also be kept on the discharge emanating from the coarse fishery on the RB. Nutrient rich turbid water flowing into the Meon is not conducive to high quality salmonid habitats. A dialogue should be opened up with the Environment Agency to ensure that water quality and the control of escapee coarse fish is monitored at this site.



Outlet from an adjacent coarse fishery discharging directly into the RB of the river. The high density of benthic feeding cyprinids does nothing to improve the quality of the water running into the river



Some excellent quality spawning and nursery habitat can be found on the top of the beat. Gravels may however be compacted and in need of work to promote enhanced levels of wild trout production

Some additional tree work to encourage more light into the channel and the use of large woody debris materials to peg into the channels would improve this section. This is discussed in more detail in the conclusions and recommendations section.

Significant stands of the invasive, non native plant, Himalayan Balsam (*Impatiens glandulifera*) were noted on this top beat. Although attractive to nectar loving insects when in flower, it out-competes native plants and does not provide good habitat for invertebrates. Most importantly, it is an annual plant that dies back in the winter, leaving banks bare that can be vulnerable to erosion. Control of this plant is included in the recommendations below.

4.2 Bottom Beat. Anjou Bridge to Titchfield Mill

The section from Anjou Bridge down to Titchfield Mill is a classic perched channel. This reach was diverted and embanked to provide increased head for the mill downstream. The net result is a deep, slow flowing channel with very little recognisable habitat for flow loving fish species such as trout.

This section is popular with members and stocked trout are taken from marginal sections where some low scrubby cover provides a refuge from predators.

Properties with gardens backing down to the RB of the river would benefit from receiving advice on erosion control. Grubbing out marginal shelves of sedge and

reed canary grass and replacing with lawn is leading to erosion and could ultimately cause bank failure.



[This land owner would benefit from some help and advice on how to arrest marginal bank erosion.](#)

Maintaining low scrubby cover to the margins is essential on this reach. Currently, the maintenance regime by the club appears to be very light and sympathetic. A move to opening up the channel margins to facilitate easier fishing may well result in many fish vacating the reach due to the lack of in-channel habitat diversity.

The fish pass located at the bottom of the section at Tichfield Mill is known to be very poor and inefficient at easing any migratory fish through the structure. A recent study commissioned by the EA has looked at the possibility of improving fish passage through the Meon system and this structure was identified as being in need of attention. It is believed that one option being considered is the recommissioning of the old natural channel as the main flow carrier. This option has a number of benefits which could enhance the overall quality of the PGRBL fishery. Any change in flow regime will require further consultation with the club and local land owners but this option represents a real opportunity to restore a more natural and productive fishery.

4.3 Back Channel

The back channel is fed by several take off points which provides flow via pool and traverse fish passes on the downstream side of Anjou Bridge. It is understood that flow might also be augmented by a breach feeding water into an old culvert running under the road. The back channel forms what was probably the original course of the Meon and because it is not impounded, it enjoys some excellent habitat for trout. It is understood that this channel is not stocked and

does provide some sport for members wishing to use small stream tactics for wild fish.

Habitats on the back channel are varied with good examples of pool, glide and riffle, providing fine habitat for all life stages of both resident and migratory trout.



Fast flowing shallow water over a clean gravel bed – good trout habitat in the back channel

Overall the channel width is very narrow and in places marginal emergent plants have choked the channel making access for angling virtually impossible. Where light reaches the channel bed good stands of water crowfoot (*Ranunculus aquatilis*) were evident. The provision of some further marginal shading by way of planting with a few goat willow (*Salix caprea*) or sallow whips may help to control the encroachment of marginal plants.

At some stage attempts have been made to either arrest bank erosion or to promote scour using corrugated iron sheeting supported by driven angle iron. Whatever the objective, this work has failed and is probably unnecessary as the margins appear to be stable and in-channel habitats are healthy and varied.



Wobbly tin and angle irons should be removed

The option of returning the majority of the Meon flow to the back channel just below Anjou Bridge should be given serious consideration. The potential benefits of this scenario are discussed in the recommendations section.



Main flow into the back channel enters half way down the meadow. If this flow entered the channel at the top end it would enhance several hundred metres of channel

4.4 Meon below the A27 Road bridge

It is understood that the fishing club also leases a further stretch of river downstream of Titchfield Village. This section of water was not closely inspected during the visit and it is understood that it is particularly overgrown and does not form part of the main fly fishery. It will undoubtedly be an important area for temporarily holding migratory trout and maintaining thick cover will probably be in the best interest of the population as a whole.

5.0 Trout stocking

Some discussion took place relating to the fishing club's trout stocking programme and in particular the potential impact on wild brown and sea trout stocks. It is understood that the club stocks with modest numbers of diploid fish on a monthly basis from April through to August. Stocking frequently with a low density of fish is preferable to one-off introductions so the current arrangements are sensible given the requirements for members to catch trout on sections largely unsuitable for wild stocks. Some thought should be given to delaying the first introduction in April until most of the migrating sea trout smolts have left the system, usually in early May. A large proportion of Meon sea trout smolts will have to negotiate PGRBL waters before finding their way to the sea and they will need as much help as possible if growth in the density of sea trout stocks is to be achieved.

There is mounting evidence that interbreeding between domesticated farmed trout and wild fish, including sea trout, can lead to lower fitness and survival amongst the offspring, reducing the numbers of river-bred fish in the population. Recent changes to the Environment Agency's National Trout & Grayling Strategy reflect this concern, and by 2015 all farmed trout stocked to rivers will be required to be sterile all-female triploids, or derived from local broodstock. More information on this subject can be found at:

<http://www.environment-agency.gov.uk/subjects/fish/165773/1791055/1800027/>

Consideration should be given to introducing stocked fish only to those areas where there is little or no natural production. The top section of river just below the M27 and the back channel have much potential for wild fish and reducing competition on the top reach from stocked fish will help to boost the numbers of wild spawners utilising the upstream habitat. This will have the knock-on benefit of supplying increased numbers of wild fish to the downstream sections.

5. Conclusions

The impoundment at Titchfield Mill and the limited capacity of the Anjou Bridge have a significant impact on available trout habitat. Habitat for wild fish from the railway bridge down to Titchfield Mill is poor, but the club have done an

admirable job in maintaining a viable fishery on these sections for club members.

Currently the EA are considering options for improving fish passage and habitat under the Water Framework Directive. Restoring the lower Meon to a more natural, functioning river would cost an enormous amount of money and would clearly be outside the scope of the PGRBL fishing club. If options are put forward by the EA for improvement the WTT would recommend that the club gives serious consideration to the prospect of diverting flows into the old channel and maintain a limited flow to the milling channel. This will still enable the club to have a viable stocked fishery on the impounded reach but will improve the back channel to such an extent that the club could enjoy a vastly improved fishery in this channel with the prospect of improved migratory and resident wild trout stocks.

The section of river immediately below the M27 has the potential for improved spawning and nursery habitat. The gravels here appear to be flat and compacted. A programme of gravel cleaning or sorting of river bed gravels through the introduction of large woody debris flow deflectors would give wild production a significant boost. As this section lies near the top boundary of the fishery any increase in production would provide improved wild trout fish for long sections of the fishery.

The sections of river between the M27 and the railway bridge provide some reasonable holding water for adult trout. This could be further improved with some modest tree work promoting dappled light and shade. Research would suggest that a 60% to 40% ratio of light to shade is ideal in a trout stream and keeping the channel cool during hot summers and low flow conditions is essential. Large trunks and branches (large woody debris) arising from any tree works could be usefully used to improve inchannel habitat.

The presence of LWD has been shown to be extremely important in several respects:

- An increase in the variety of flow patterns, depths and localised velocities.
- Development of high in-channel physical habitat diversity
- Significant benefits to the control of run-off at the catchment scale, as Woody Debris helps regulate the energy of running water by decreasing the velocity. Thus the 'travel time' of water across the catchment is increased resulting in a less 'flashy' regime.

LWD is a general term referring to all wood naturally occurring in streams including branches, stumps and logs. Almost all LWD in streams is derived from trees located within the riparian corridor. Streams with adequate LWD tend to have greater habitat diversity, a natural meandering shape and greater resistance to high water events. Therefore LWD is an essential component of a healthy stream's ecology and is beneficial by maintaining the diversity of biological communities and physical habitat.

Traditionally many land managers and riparian owners have treated LWD in streams as a nuisance and have removed it, often with uncertain consequences. This is often unnecessary and harmful: stream clearance can reduce the amount of organic material necessary to support the aquatic food web, remove vital in-stream habitats that fish will utilise for shelter and spawning and reduce the level of erosion resistance provided against high flows. In addition LWD improves the stream structure by enhancing the substrate and diverting the stream current in such a way that pools and spawning riffles are likely to develop. A stream with a heterogeneous substrate and pools and riffles is ideal for benthic (bottom dwelling) organisms as well as for fish species like wild trout.

If a tree trunk or branch is causing a severe problem then by all means move it but try and retain as much within the channel as possible. This will ultimately mean that some sections of river will be unfishable. The chances are however that trout stocks will improve. Getting the balance right requires skill and understanding and there will be some that will find the concept difficult to grasp. It is without doubt the simplest and easiest way to promote improved habitat on a stream like the river Meon. Further advice on this issue is available from the Wild Trout Trust.

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. Any modifications to hard defences will require a land drainage consent on any river designated as "main river". Advice can be obtained from the EA's Development Control Officer.



Gravel cleaning using a back pack leaf blower. Cleaning gravels on the top beat is recommended

6. Recommendations

- Improve the spawning potential of the top reach by strategically pegging down LWD onto selected shallow gravelly sections.
- Undertake a programme of early autumn gravel cleaning. Guidelines for gravel cleaning are attached as an appendix to this report.
- Open up a dialogue with the neighbouring farmer on the top beat and discuss the possibilities of a decent buffer zone adjacent to the river to protect it from excess siltation and enrichment.
- Remove the stands of Himalayan balsam by pulling before seeding.
- Maintain a close eye on water quality entering the river from the adjacent coarse fishery. One excellent method of self monitoring water quality is to link up with the Riverfly Partnership. The Partnership provides simple training and a robust method of assessing fly life through periodic sampling of macro invertebrates. This is a simple and effective way of keeping a close eye on water quality performance. More information can be found at www.riverflies.org
- Undertake a programme of tree planting with sallow or goat willow on long open sections of the back channel.
- Remove old tin sheet and steel posts from the back channel
- Consider any proposals to redistribute flow into the old natural channel as a fantastic opportunity to enhance the whole fishery.
- Review your trout stocking programme to ensure that wild stocks are given as much protection as possible.

6. Making it happen

There is the possibility that the WTT could help to start an enhancement programme. 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 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.

Alternatively the Trust may be able to help in the development of possible project plans in partnership with the Meon Partnership in order to enhance and improve both in-channel and marginal habitats on the top beat.

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 clubs, syndicates and landowners through guidance and linking them up with others that have had experience in improving trout fisheries.

Acknowledgement

The WTT would like to thank the Environment Agency for supporting the advisory and practical visit programmes.

Disclaimer

This report is produced for guidance only and should not be used as a substitute for full professional advice. 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.