River Meon at Ripling, near Drayton.

An advisory visit carried out by the Wild Trout Trust – September 2014

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on 0.5km section of the upper Meon at Ripling near Drayton in Hampshire. The reach inspected ran from NGR SU 662236 down to SU 663235.

The request for the visit was made by Mr. Alistair Lacy who has recently purchased the property and is keen to gain advice on the best way to manage the river corridor for wildlife. Mr. Lacy is particularly keen to ensure that wild brown trout thrive in this section of the upper Meon.

Comments in this report are based on observations on the day of the site visit and discussions with Mr. Lacy.

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.

Map 1.

2. Catchment overview

The Meon at Ripling, along with the Whitewool Stream is one of the two headwater branches of the River Meon. Both branches rise from the Hampshire chalk aquifer near the village of East Meon and join in West Meon before flowing south for approximately 35km, then enter the sea at Hill Head. The river enjoys a steep gradient for a chalk river, falling approximately 120m from source to sea. The middle and upper reaches of the river flow 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. There is significant change in geology at Soberton. Above Soberton , the Meon runs over chalk; below Soberton there is a change to deposited material, principally London Clay and Reading Sand. These deposits dominate the Meon catchment south of Soberton until the river enters the sea at Titchfield Haven.

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* spp.), starwort (*Callitriche* spp.*)* 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 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 improved access for migratory fish by improving existing fish passes on the lower river. The river also supports a range of coarse fish, eel and strong populations of brook lamprey and bullhead, both of which are designated as species of conservation importance under the EU Habitats Directive.

The Meon (Waterbody ID 107042016640) has been assessed as being in 'Good Ecological Condition' under the Water Framework Directive although the river is known to be both over abstracted and over licensed for abstraction under the EA's own Catchment Abstraction Management Plan.

R. Meon		
Waterbody ID	GB107042016640	
Waterbody Name	R. Meon	
Management Catchment	East Hampshire	
River Basin District	South East	

Typology Description	Low, Medium, Calcareous	
Hydromorphological Status	Not Designated A/HMWB	
Current Ecological Quality	Good Status	
Current Chemical Quality	Good	
2015 Predicted Ecological Quality	Good Status	
2015 Predicted Chemical Quality	Good	
Overall Risk	At Risk	
Protected Area	Yes	
Number of Measures Listed (waterbody level only)	1	

Summary of WFD information for the River Meon

3. Fishery overview

The Meon upstream of Warnford is not widely used as an angling resource. The upper reaches of the Meon do support a wild brown trout (*Salmo trutta*) population and this upper reach is principally regarded as a headwater spawning and nursery stream, rather than an actively used fishery. Fish stocks produced in the headwaters are crucially important in augmenting trout stocks found throughout the whole system.

A low number of resident adult trout will reside in favourable holding pools in the Ripling reach and the population will be augmented during the late autumn and winter period by fish migrating up the system to seek out suitable spawning locations. Juvenile trout born in this reach will occupy shallow, well covered niches and will move downstream to find unoccupied lies, especially as flows reduce in the late summer/early autumn. In high flow years, occasional sea trout are known to push upstream to the Warnford area for spawning. It is possible that the occasional sea trout will make it as far upstream as Ripling in high flow winters.

Flow is a critical factor for the overall health of the Upper Meon. Unfortunately in a very dry season the river will, in places, completely dry up, with upstream

sections apparently still flowing but with some sites losing all traces of flowing water to subterranean porous geology.

Many of the plants and invertebrates found in the chalkstream environment are well adapted to periodic drying of the channel and it is remarkable how quickly chalkstream headwaters can recover once the aquifers have recharged. Trout are no exception to this group of well adapted species, possessing a propensity to quickly re-colonise any vacant habitat niche once river flows return.

Unfortunately the plethora of weirs, mills, dams, on-line lakes and water meadow structures all make this natural re-cycling of stock very difficult.

4. Habitat assessment

At the time of inspecting this particular section of the Meon in late September, the flows were extremely low and encroaching marginal vegetation was lush (photo 1). Sections of 'open' flowing channel could scarcely be seen, other than immediately below an existing water meadow hatch (photo 2) and beneath a handful of overhanging trees.

The section of channel running though the plot has been heavily modified and is currently perched in a man-made channel above the valley floor. In all probability this was to facilitate agricultural irrigation and used to temporarily flood the meadows in the very early spring to promote rapid grass growth and a 'first bite' for grazing livestock.

Photo 1. Wide, shallow channel choked with Water parsnip (*Berula erecta*) and Fools cress (*Apium nodiflorum*)

Photo 2. An old water meadow hatch structure straddling and impounding the channel.

Substantial lengths of the existing channel are much too wide for the average flow discharge, with banks that appear to have been badly degraded through previous poaching by livestock (photo 3). The net result of the overly wide channel has been to reduce flow velocities, which has enabled chalk stream emergent plants to thrive, not just in the margins but right across the channel. Channels without any access to open water can be a hostile environment for fish.

In a handful of locations the channel width has been constricted due to the presence of a few bank-side trees, which, coupled with the shade, has restricted emergent plant encroachment. It is also likely that some of these 'squeezed' sections will have encouraged slightly deeper pool habitat, which will provide a potential refuge area for the occasional adult brown trout.

Beneath the raft of emergent vegetation, the river bed is gravel rich, providing a valuable habitat for invertebrates and potentially important trout spawning habitat. Long sections of the channel are currently too wide and shallow to provide optimum spawning opportunities, not helped by the flat stream bed topography.

Photo 3 A wide, shallow and flat section of chalkstream channel with the definition of bank and bed lost through previous livestock poaching.

5. Conclusions

The Meon at Ripling is ripe for enhancement. The channel could easily be manipulated to create a more diverse bed and bank topography which could help to combat the total encroachment of chalk stream emergent plants. A key aspect of managing river flows is to ensure the channel is not impounded. Local water depth is best encouraged by driving the river bed down, rather than holding water levels up with impoundments.

In dry years, maintaining viable open water habitat will be challenging. Work to remove impoundments, reduce the channel width in some strategic locations and promote marginal bank definition with newly created soft revetment, as well as providing additional shading will all help to provide an enhanced and sustainable chalkstream environment.

The first priority is to investigate the weir structure and at the very least remove any stop boards that may still be in place. Ideally the whole structure should be removed but care must be taken to ensure that the weir has no archaeological or heritage significance.

On the longer sections of weed choked channel, the channel width should be radically reduced by at least 50% and in places by approximately 75%. In very wet years, winter and early spring flows will result in 'out-of-bank' flooding of the adjacent meadows. Where there is no risk of damage to local infrastructure,

reconnecting the stream laterally with the meadows would be considered by most to be a very desirable outcome.

The quickest and easiest way to create a narrower, more sinuous channel is to manipulate the existing banks and bed with a tracked excavator. Creating two or three narrow, appropriately sized pools (must not be too large or two deep) could be achieved by excavating bed materials and using them to narrow the channel width at the neck of the pool. Some log, or faggot bundle revetment might be required on the outside of bends and backfill obtained from newly created river-side scrapes, which will create be valuable wet habitat in their own right. A project where the bed and bank is to be manipulated with a machine will require a detailed consultation and written consent from the Environment Agency. The WTT can help with this process. .

Some similar work to create improved in-channel habitat was sponsored by the Hampshire and Isle of Wight Wildlife Trust less than 1km upstream of Ripling so obtaining consent to deliver such a project in this location should be relatively straight forward. It is estimated that the work would require the use of a skilled machine operator, the hire of a small (5-9 tonne) 360 excavator and dumper plus environmental supervision for one day. Project costs, including help with project design, the acquisition of consents and project delivery would be approximately £2500.

It might be possible for the WTT to help with raising the necessary funding and provide the environmental expertise to help Mr. Lacy deliver this project.

An alternative approach is to chip away at the river with simple hand tools. A new bank can be created using faggot bundles, or log revetment to promote a narrow, sinuous thalweg within the existing wetted channel width. Simple log deflectors can be pinned into the channel to promote some local bed scour and provide holding habitat for trout. Most of these techniques are explained in detail in the Wild Trout Trust ChalkStream Habitat Manual. This can be purchased from our office as a DVD, or individual pdf files downloaded from our website www.wildtrout.org .

6. Recommendations

- Remove any remaining stop boards in the existing hatch structure and investigate the historical significance of the structure. If it is a recent construction then consider its complete removal.

- Plan a scheme to radically narrow the existing channel width by at least 50%. Using a tracked machine to redistribute river bed and flood plain materials can be a very effective and relatively cheap option. Some log or faggot revetment might be required to create a new toe to the outside of any new bends.

- If the meadows are to be grazed with horses or cattle in the future then some temporary fencing will be required to protect any recovering banks.

- Some tree planting is required to promote more channel shading. Low scrubby species such as thorns, elder and sallow are recommended. If hiring a 360, it might be possible to win some whole pollarded trees from the local hedgerow to plant a mature tree over a newly created pool. Instant trout habitat!

- Create improved adult holding habitat through the installation of some large woody material flow deflectors. Due to the hard gravel bed and lack of stream power, it will be necessary to loosen the bed material with a spike or mattock adjacent to where the flow velocities have been increased. The woody material will help to promote bed material, maintain a varied shape to the river bed and help to sort river bed gravels.

- It is recommended to initially install a maximum of four features and monitor performance.

- Consider the possibility of a more ambitious project to improve the whole section of channel. A way forward is the production of a project proposal that could form the basis of a partnership project, possibly attracting external funding.

It is a legal requirement that some works to the river may require written Environment Agency consent prior to undertaking those 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.

7. Making it happen

There is the possibility that the WTT could help to start a project via a Project Proposal (PP) or a Practical Visit (PV). PV's typically comprise a 1-3 day visit where approved WTT 'Wet-Work' experts will complete a demonstration on the site to be restored. This will enable fishery managers to obtain on the ground training regarding the appropriate techniques and materials required to enhance trout habitat. This will then give projects the strongest possible start leading to successful completion of aims and objectives.

Recipients will be expected to cover travel and accommodation expenses (if required) of the PV leader.

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 organisations and landowners through guidance and linking them up with others that have had experience in improving river habitat.

Acknowledgement

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

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