River Meon at Funtley House Farm

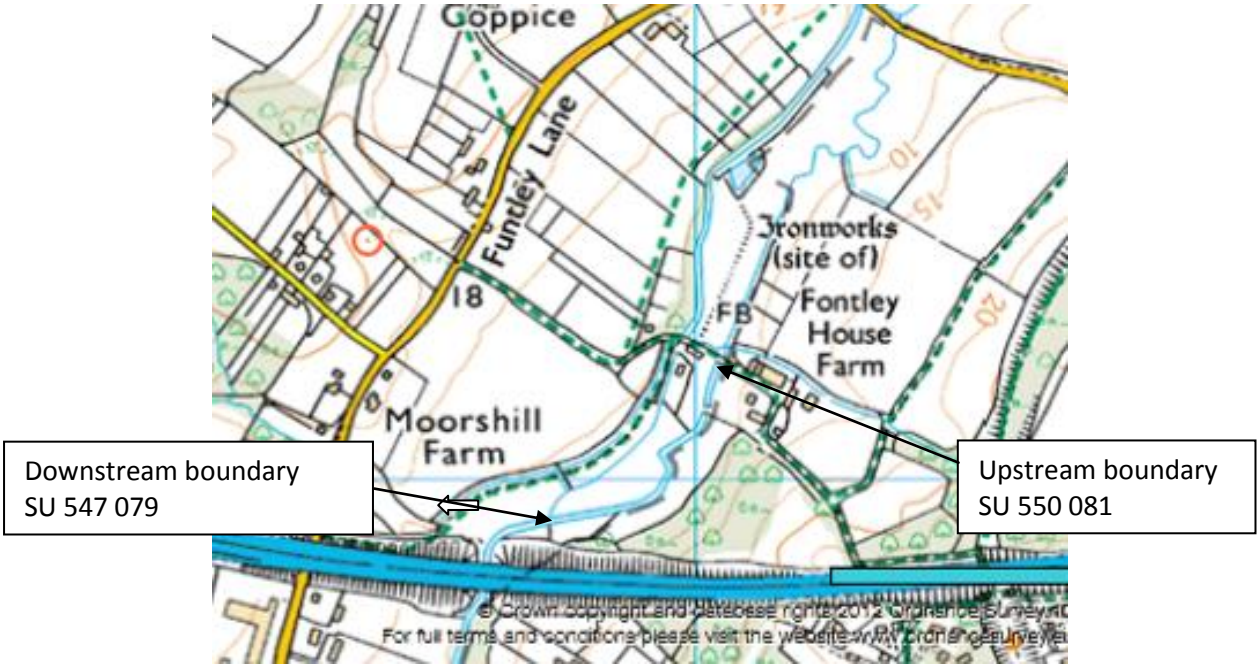
An advisory visit carried out by the Wild Trout Trust – July 2012

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on a 0.5km stretch of the River Meon at Funtley House Farm, Titchfield. The river is owned by Mr. and Mrs. Wight and is only very occasionally fished by friends of the owner.

The request for the visit was made by Simon Wight who is keen to understand the best way of managing the river. Comments in this report are based on observations on the day of the site visit and discussions with the owners.

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.



River Meon, Funtley House Farm

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 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.

Near Soberton there is a significant change in geology to deposited material, principally London Clay and Reading Sand. These deposits dominate the Meon catchment south of Soberton Heath until the river enters the sea at Titchfield Haven.

As a consequence of the underlying geology, the Meon tends to have a greater flow range compared to other southern chalk streams i.e. it tends to fall and rise more rapidly in response to rainfall. The water chemistry is typical of a chalk stream, so it displays the classic characteristics of clear water, low soft margins and an abundance of in-channel macrophytes. These are 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 are improving 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 conservational 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.

. Meon			
		View data	
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

This section of River Meon at Funtley House Farm has recently come into the ownership of the Wights and consists of approximately 300m of double bank main river channel and a short single bank section of mill channel running below Funtley Iron Mill to the main river confluence. The main river has not been actively managed as a fishery for many years and access for angling would be difficult even for a very determined fishermen.

4. Habitat assessment

The river at Funtley House Farm is divided into two channels – the western channel is a mill channel, perched above the lowest point in the valley, and the eastern channel is the natural river. The balance of water flow between the two channels on the reach belonging to Funtley House Farm is determined by the management of a sluice just upstream of the road bridge. During periods of low flows, the division of the available water between the two channels becomes critical for trout and for the ecology of the river and the mill channel.

A principle to bear in mind is that mill channels support an ecology which is better adapted to lower flows and will continue to function even if water is left standing rather than flowing for a period of time. In contrast, the river ecology (and particularly for fish like trout) need flowing water to maintain good water quality and support optimum habitat. Strong river flow is also essential in enabling fish to migrate up and downstream to complete their lifecycle.

For trout, and especially sea trout, the critical periods are:

- Migrating to spawning areas – mid August to November.
- Spawning and egg hatching – November to January.
- Sea trout juveniles (smolts) migrating to the sea – April to May.

At the time of the visit in July 2012, water levels were good following a very wet spring, but this has followed two very dry winters when flows in the Meon have been extremely low.

The natural river channel has benefited from 'benign neglect'. Unlike many other rivers in southern England, and many sections of the Meon, it does not appear to have been dredged, straightened or artificially constrained and retains its natural features with bends, pools, riffles and glides. These natural features mean that there is a great diversity of habitat, and this diversity is the key to a healthy ecology. Trout in particular need different habitats to support different life stages and ensure a self sustaining population.

Trout spawn on shallow gravel glide areas where a good flow of water will flow through the nest or redd to keep the eggs well oxygenated and viable. If too much fine sediment infiltrates the redd during incubation then significant reductions in the conversion of eggs to fry can be expected. These gravel areas will often be on the downstream edge of pools, where river bed gravels have been blown out of a pool, usually due to a fallen tree or natural pinch point in the channel width. The Funtley Farm reach has some good areas of clean gravels which will provide good spawning sites for both resident brown trout and sea trout. See Photo 1.

Photo 1
A site suitable for spawning – an area of gravel just downstream of a pool.

Sea trout and recently occasional salmon running up the Meon can be very large and it is interesting to walk the river during November and December to see if they are spawning. Note the areas that they are spawning and take particular care not to trample on the gravel during any winter maintenance work, or remove too much overhanging vegetation in these areas.

Trout emerge from the gravels as fry in the early spring and will move downstream into relatively shallow areas in the margins which are protected by overhanging vegetation trailing into the water, or tree roots. This vegetation gives trout fry protection from predators such as herons and egrets. On many rivers, banks are trimmed to give access for angling and this essential cover is removed. This is not an issue for the Funtley Farm stretch of the Meon. If work is contemplated on the river banks then care should be taken to keep as much of the low level river bank plants intact as possible. Native trees, biannual and even annual herbs help to protect the bank from erosion and provide habitat for the adult stage of many river flies.

Adult trout also use overhanging vegetation, stones and tree roots as protective 'lies' where they feel safe from predators, but they will take up residence in deeper water in pools and glides. Sea trout in particular will rest in the bottom of deep pools as they wait in the river before moving to spawning sites. The deep pools on the outside of bends on the Funtley Farm reach provide excellent adult trout and sea trout habitat.

Trees and shrubs lined the bank of the river for almost all of the reach. On the positive side, this has a number of advantages: the shade has a cooling effect on the water in periods of low water in the summer; insects drop from the trees to augment the food supply in the river; tree roots and trailing vegetation protects fish from predators.

On the negative side, heavy shading reduces the amount of plant and insect life in the river. Key species such as water crowfoot (*Ranunculus* spp.), starwort (*Callitriche* spp.*)* need light, and these plants are hosts to many of the invertebrates that trout and other fish will feed upon. Research has shown that a mix of 60% shade to 40% light is a good mix to aim for. The Meon at Funtley Farm is slightly over shaded (see Photo 2) and some tree work to open areas of dappled light would be beneficial to the river as a whole. Alder trees when coppiced survive well and will re-grow as a multi stemmed tree. Coppicing out the occasional clump of mature trees creates a varied structure to the tree canopy and avoids issues associated with large numbers of mature trees collapsing at the same time following severe weather. When choosing any trees to coppice, it is advisable to concentrate on thinning trees casting more shade from the southern bank.

Photo 2
Heavily shaded channel would benefit from some tree work.

When carrying out tree work, bear in mind that rotational coppicing over a 5 or 7 year period in the best approach. Large scale works in one year will promote rapid re-growth and create a management problem a few years down the line. Small scale and selective tree work to allow light to fall onto shallow glides and riffles will promote the growth of in channel plants. Leaving the deep shade over pools will allow sea trout to feel secure and keep water cool in hot summers.

The non native plant Himalyan balsam *Impatiens glandulifera* was present throughout this reach at moderate levels. This non-native plant is undesirable because its suppression of other ground vegetation, coupled with its winter die back combine to leave extensive areas of bare bank, contributing to excessive erosion. The control Himalayan balsam can be achieved by physical or chemical means:

Physical Control

The main method of control, and usually the most appropriate, is pulling or cutting plants before they flower and set seed (usually in June or July). Working parties are the best means of doing this.

Grazing access appears to work in some areas. This could be continued, but needs to be carefully controlled and balanced with preventing overgrazing of desirable species, damage to coppice re-growth or damage to river banks. Access in late spring or early summer before the balsam has flowered would be ideal. In areas inaccessible to livestock, physical or chemical control is recommended.

Chemical Control

Before using weedkillers alongside waterways it is necessary to contact the Environment Agency and obtain their written consent. It is recommended to only use suitably qualified contractors.

Himalayan balsam can be controlled with a weedkiller based on glyphosate, such as Roundup. Glyphosate is a non-selective, systemic weedkiller that is applied to the foliage. It is inactivated on contact with the soil, so there is no risk of damage to the roots of nearby plants, but care must be taken that the spray doesn't drift onto their foliage. Glyphosate is most effective when weed growth is vigorous. This usually occurs at flowering stage but before die-back begins; with most weeds, this is not earlier than mid-summer.

It may take a couple of seasons to obtain good control due to the germination of more weed seedlings.

Himalan balsam flower. Easy to hand pull prior to setting seed pods.

Himalayan Balsam can rapidily shade out other native plants leaving banks vulnerable to winter erosion.

6. Conclusion and Recommendations

In summary, the habitat on the Meon at Funtley Farm is in good condition and this stretch is almost certainly an essential holding and spawning area for sea trout where they can rest undisturbed prior to spawning.

Little intervention is necessary, other than some management of the balance of light and shade through tree work.

During periods of low flows and during the key migration periods in the autumn and spring, we would recommend that the sluice is managed to maximise available flow into the main channel.

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.

Acknowledgement

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

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