Candover Brook – Phase 4 Fobdown

A Project Proposal by the Wild Trout Trust – January 2016

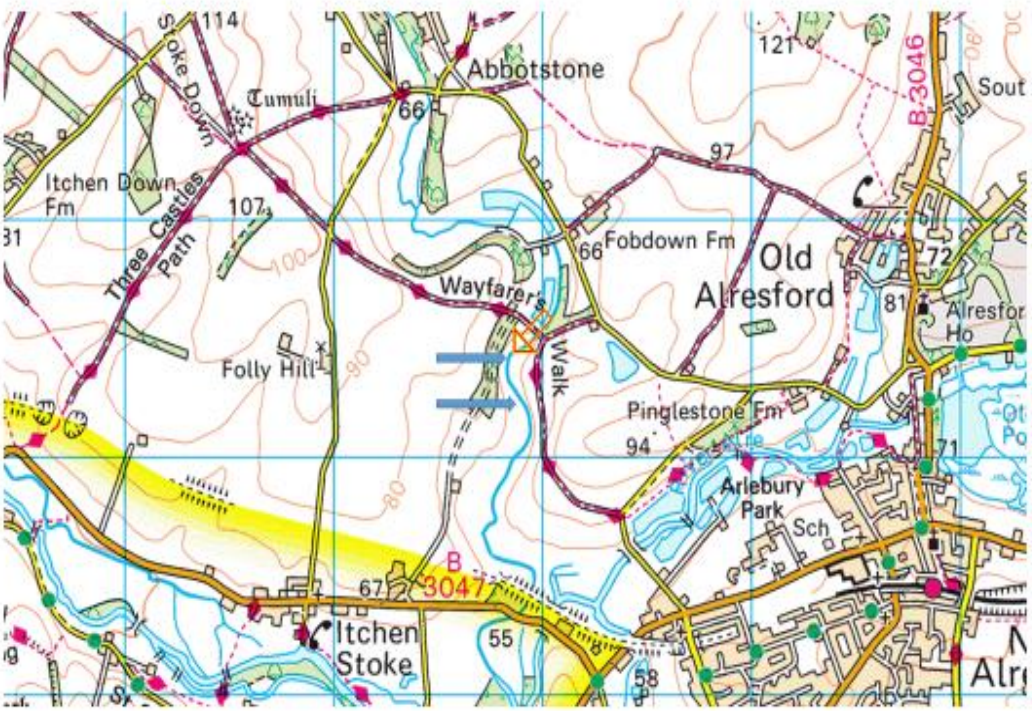
1. Introduction

This report is the output of a Wild Trout Trust visit undertaken on the Candover Brook (WFD ID No. GB107042022620) with Richard Redsull from the Environment Agency. The purpose of the visit was to identify phase 4 projects to build on the successful work already carried out on the Candover through the EA/WTT partnership.

This follow-up report sets out further proposals which are intended to provide ideas and suggestions for improving habitat quality, primarily aimed at improving opportunities for brown trout (*Salmo trutta*) and white clawed crayfish (*Austropotamobius pallipes)*.

Long sections of the Candover Brook are overly wide and shallow, with flat bed topography consisting of mainly unsorted gravels. The open and uniform nature of the channel (i.e. lacking in refugia) makes this a hostile environment for adult trout and crayfish. The lack of adult trout holding habitat makes them particularly vulnerable pre-, during and immediately post-spawning. Creating more diversity in the bed topography in currently barren sections will create contiguous good quality habitat, help to build a resident adult trout population and potentially give resilience to both the trout and also crayfish populations which are particularly vulnerable because they are fragmented.

A key objective in delivering the enhancements is not only to improve holding habitat for adult trout but also to sort and improve gravel quality for enhanced spawning opportunities.



Map1 Proposed reach for Phase 4 enhancements

Comments in this report are based on a one-day site visit and discussions with the EA Fishery Technical Officers.

The walkover survey concentrated on a 200m section of channel located downstream of the Fobdown water cress farm from National Grid Reference SU 569334 down to SU 568332 (map1)

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 Itchen is considered to be one of the finest examples of a chalk river in Europe and one of the most famous brown trout fisheries in the world. The river is designated as a Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI) (Appendix 1).

The Itchen rises from the chalk aquifer to the east of Winchester where groundwater-fed springs feed into three headwater streams; the Alre, the Candover and the Tichbourne, or Cheriton Stream. The streams converge near Alresford and flow south west, through the centre of Winchester and on to join the sea in Southampton.

The river is characterised by a plethora of man-made channels, some dug to provide milling power, some to support the old Itchen Navigation and others to feed the network of water meadow carriers.

3. Local habitat overview.

Following the initial WTT AV reports in 2006, several sections of the Candover have been improved via the creation of refuge areas. The channel has been protected from grazing animals with temporary fencing and low marginal cover allowed to encroach into the river, promoting some natural narrowing as well as active pinching of the channel using faggot revetment. Photo 1.

Photo 1. A section of the Candover pinched with hazel faggot revetment, planted with marginal emergent plants and temporarily fenced to promote channel recovery.

Photo 2. Target site ripe for enhancement. Poorly defined margins and a flat, uniform river bed providing few opportunities for fish and crayfish

When undertaking previous improvements, a key consideration has been to try and extend the range of the existing white clawed crayfish population, which for many years has been restricted to a very short section of the Candover adjacent to the Fobdown watercress farm. It is envisaged that the continued creation of additional refuge areas, where improved cover for crayfish can be installed, will help to extend the range and resilience of the Candover population.

A fishery survey carried out by the EA in 2012 has highlighted the benefit of the work carried out in the previous phases of the project, with a reported doubling of trout densities recorded in the treated sections compared to those found in control sites.

The target section of channel shown in photo 2 and 3 is typical of long sections of the upper Candover, where unimpeded access by grazing cattle has, over time, led to the channel becoming excessively wide and shallow. The topography of the bed is flat, the gravels unsorted, with a chronic lack of cover for trout of all life stages. In-channel macrophytes are dominated by water parsnip and cress in the margins, with occasional clumps of water crowfoot located in central channel locations.

Photo 3. Wide shallow riffle on the downstream end of the target reach.

Creating increased channel heterogeneity within the target reach at this location will provide improved habitat for trout, crayfish, plants and invertebrates.

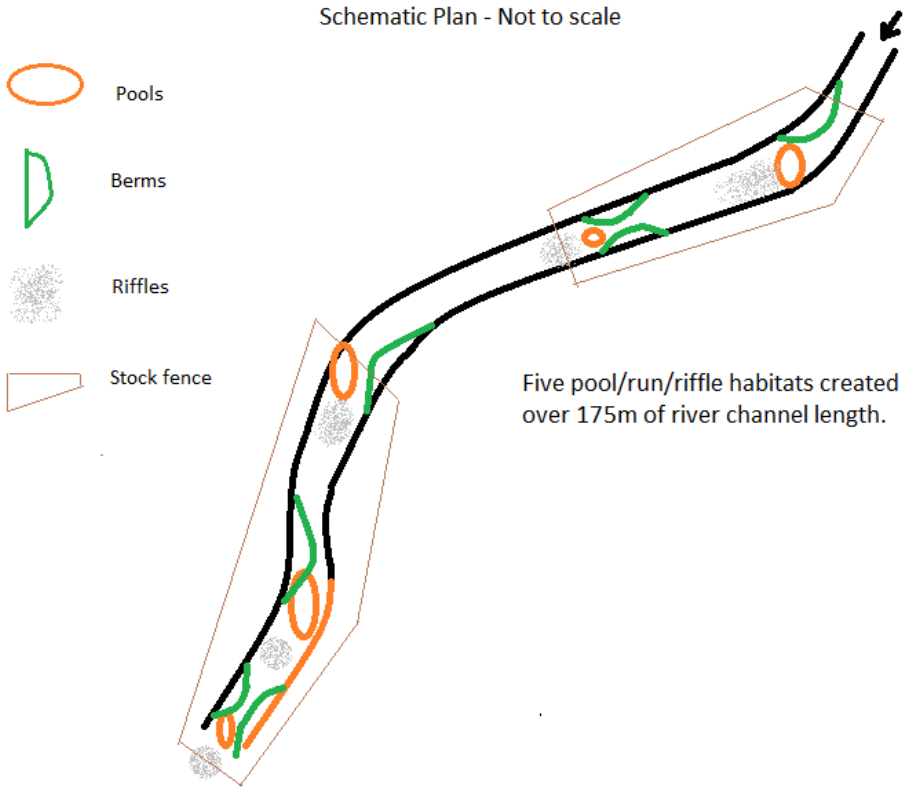
4. Project proposals

The key project objective is to create move diversity in the shape and depth of the river channel. This can be achieved through the re-distribution of existing in-channel bed material using a tracked 360 excavator to create a series of five pools and associated runs and riffles. Pools should not be too deep (1.2m maximum) to be commensurate with pool habitat likely to be found in a chalkstream headwater. Bed material won from each pool excavation is to be side-cast to form a neck, or flume at the upstream end of each pool. Re-shaping the tail of the newly created pools, to form a shallow batter, will also potentially promote new spawning opportunities. Additional material to create pinch points at the neck of the pool runs can be won through the lowering of sections of existing high bank located adjacent to the RB at the upstream end of the target reach. The reach will be inspected for signs of water vole immediately prior to any works. Any areas supporting vole burrows should be clearly marked and excluded from the work area.

The installation of pieces of large woody material adjacent to pool necks and brushwood into shallow riffle margins is recommended, along with a liberal dotting of large flints (found locally on site) into selected areas to create micro habitats for juvenile salmonids and crayfish.

It is proposed to fence sections of river channel, as carried out further upstream. This will help to promote a rapid recovery of plants within the channel and allow a busy riparian fringe of native herbs and emergent plants to rapidly develop. Each section of fenced channel will provide an oasis of cover for small fish and crayfish, potentially enabling the population to build in the reach as a whole.

A Schematic site plan (not to scale) is depicted in drawing 1.



Drawing 1. Site Schematic.

Estimated project costs - £7k

Acknowledgement

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

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