



River Itchen – Kanara Fishery



**An Advisory Visit by Nick Lawrence on behalf of the Wild Trout Trust
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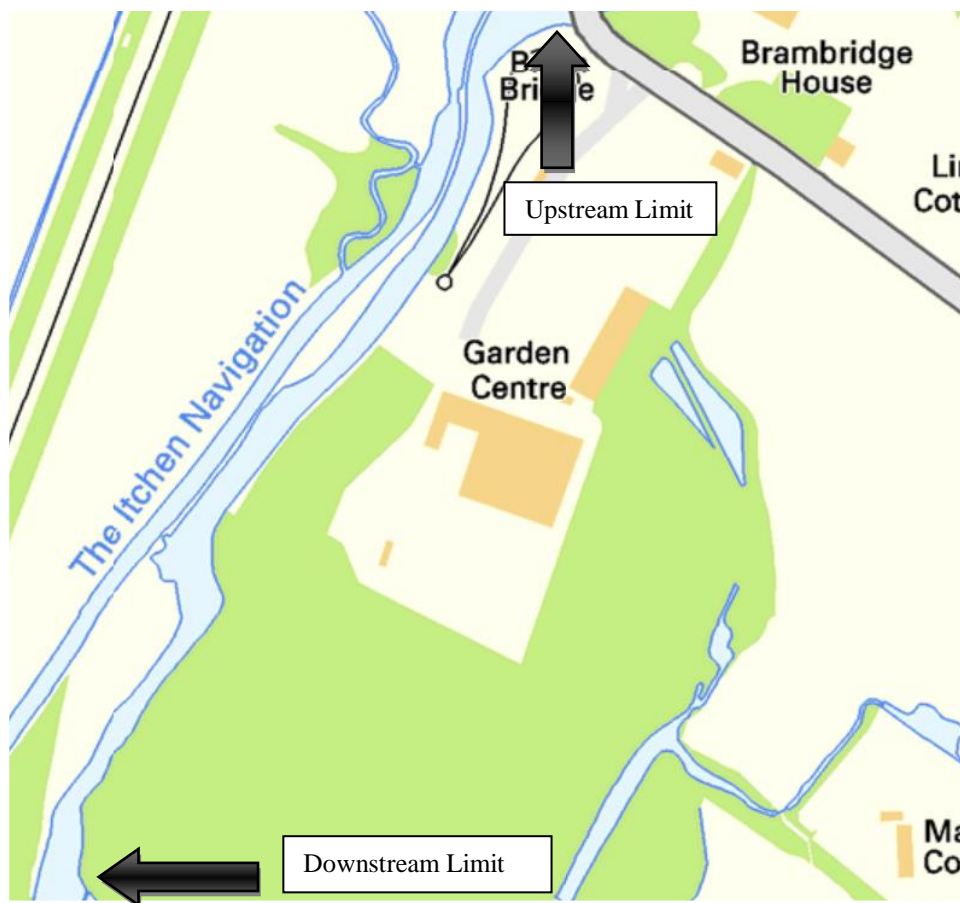
1. Introduction

This report is the output of a site meeting and walk-over survey of the Kanara Fishery on the Itchen at Brambridge in Hampshire.

The request for the visit came from Hadrian Teasdale who is the owner of the fishery. Mr Teasdale is keen to explore opportunities to enhance and improve the fishery, as well as review management practices.

Comments in this report are based on observations on the day of the site visit and discussions with Mr. Teasdale, the river keeper Pat Paton-Moyle and myself, Nick Lawrence.

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 Kanara Fishery on the River Itchen

The Kanara Fishery lies downstream of Winchester. The water for this section is fed partly by the reach upstream and partly by the old Itchen Navigation Canal and runs through a wooded section adjacent to and downstream of Brambridge Garden Centre. The upstream end of the fishery is the road bridge at Kiln Lane [SU467222](#) and the downstream end is below the wooded section just upstream of Highbridge [SU464218](#).

The fishery itself consists of one section of main river channel. There are weir structures at the top, middle and near the bottom, the largest of which is the middle weir which was constructed to provide a head of water for the Itchen Navigation Canal. In all, the fishery extends to approximately 500 metres of channel.

The middle Itchen water body classification on the Environment Agency website: <http://environment.data.gov.uk/catchment-planning/WaterBody/GB107042022580>

2. Catchment and fishery 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 (*Salmo trutta*) 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 Canal and others to feed the network of water meadow carriers.

The river is largely managed as a stocked trout fishery downstream of Winchester but does have good wild populations throughout, the upper reaches showing that this river can be managed successfully for wild fish. The potential for a truly wild trout fishery on the Itchen is very evident: if managed carefully and not overfished, fishing will improve, as shown in other reaches of the river.

A significant area of concern for the Itchen is nutrient pollution, especially phosphorous, reportedly elevated from sources such as domestic sewage, agriculture and fish and watercress farming. Monitoring is ongoing and a number of initiatives (e.g. the multi-partner Upper Itchen Initiative) are attempting to address the issues, but the ecological status of the river is thought by many to have deteriorated and is considered by some to be particularly bad in the summer months.

3. Habitat assessment

The habitat quality within the River Itchen is mainly determined by flow, channel morphology, geology, river bed gradient and local river maintenance regimes, both historical and latter day.

The majority of channels which form the River Itchen are man-made and vary enormously in terms of habitat quality. Many of the habitats which support the SSSI are associated with high water levels, maintaining comparatively damp riparian habitats. However, some of the key features of interest cited under the SAC are dependent on flow velocities within the channel (see Appendix 1). High quality in-channel habitats require the river to run relatively fast in order to

achieve favourable condition. Chalkstream reaches, such as Kanara, that have more variety in channel shape and form (pools, riffles and glides) provide more valuable wild trout habitat than long sections of impounded channel, usually uniformly characterised by a smooth glide and laminar flows.

The top section below Kiln Lane is heavily shaded by woodland and is uniform in channel width and depth. There is no defined pool riffle sequence along this section. A fallen tree that has been left on the RB is providing valuable gravel sorting which will be a good area for salmonid spawning (Photo 1). This area could easily be improved with the addition of whole trees to bolster the existing natural woody material on the RB.



Photo 1. View from the bridge at Kiln Lane, a fallen tree on RB deflecting flow to provide valuable variation in habitat.

In the background of photo 1 you can see one of three inlets to this channel from the Itchen Navigation canal.

Below this area, the river narrows and has a nice scrubby margin on the RB (Photo 2); this area is prime wild trout habitat, with plenty of cover for small fish and a good scour promoted by the tree roots to create a lovely run. Kanara runs mostly through woodland, therefore there is a slight issue with shading, which possibly results in very little light actually hitting the water when the trees are in leaf. This could be improved by 'hinging' some willows into the channel to add habitat, thus improving the light situation at the same time. Weed growth was poor through this section and a little light could give it a kick start. NB Light touch here is key; some willows must be kept as low cover.



Photo 2. Nice pacey reach with good cut under RB. Some of the willows could be hinged to increase habitat as well as lighting the channel to improve weed growth.

The LB in comparison has some serious issues. The LB is used as the path for anglers and is suffering badly from erosion. It is heavily shaded which means that not much grows under it and it has little to no marginal fringe apart from Hemlock Water Dropwort (*Oenanthe crocata*). If nothing is done about this, then it could become a serious access problem. Note the very narrow path in Photo 3. One of the main issues is there are no reed beds to buffer the flows, which means bare earth is exposed, causing serious bank erosion.

The easiest and cheapest fix would be to install coarse woody material or faggot bundles backfilled with brushwood to protect the exposed bank, collect silt and try to establish a marginal reed bed to buffer the flows. This could be combined with strategic narrowing where the channel is overwide to keep the water energy in the channel. Coppicing of willow or hinging willows opposite these areas would be needed to encourage some extra light, helping to establish the fringe.



Photo 3. Very narrow eroded LB, possible regrading/ rebuilding project or some coarse woody material to protect it and try to establish more marginal plants.

There were noticeably 3-4 summer weirs that were obviously installed some 20+ years ago (photo 4). They would have been used to hold up summer levels for stocked fish. These may not individually be impacting on fish passage but they may have a cumulative effect.

The main issue with these structures is the interruption of gravel movement. These structures could also be partially responsible for the bank erosion on the LB. This is because when the river comes up it is forced to find a new path, forcing flow towards the banks. Particularly on chalkstreams, where flows are generally more stable, such summer weirs suppress the natural geomorphology and reduce the abundance or magnitude of pool and riffle sequences. As mentioned, these were put in to hold up summer water levels and this is when the damage is done. The river needs to be 'free' so that natural pools have a chance to develop and provide depth and flow during dry weather. Holding up water levels suppresses natural river process, resulting in long sections of featureless glide habitat.



Photo 4. One of the summer weirs, note the smooth glide above it and erosion below in the bottom right of picture.

Between these summer weirs, there is some fantastic habitat, most notably the naturally occurring alder roots on the LB and scrubby dogwood and willows on the RB. If the summer weirs were removed, then these habitat features would be accentuated even more (photo 5).

Just below the largest summer weir is a fantastic example of what to do when a tree falls in the river (cover photo). The tree couldn't be left where it fell because of flooding and eroding the footpath, so the butt section was severed and left where it fell, creating a natural scour off the end of the log and kicking the flow towards the LB. Just downstream all the brush was placed in the water on the RB in a mattress-style deflector, kicking the flow back across and creating a natural chicane. This habitat is ideal for all year classes of wild trout and is a great way of easily creating natural pool and riffles without the use of big summer weirs.



Photo 5. Alder roots producing a good scour and a lovely scrubby margin of dogwood creating a nice natural pinch.



Photo 6. Rare low cover from LB, a superb slack area downstream of it. Photo 7. Slightly upstream of Photo 6, a goat willow is a likely candidate for a hinge cut.

Downstream of photos 6 and 7 the river changes mainly due to more flow joining this reach from a set of side hatches from the Itchen Navigation Canal (Photo 8). From this point, the channel becomes much wider although further downstream of here it narrows again adjacent to woodland and tree roots, scouring very deep holes in the process. Often, salmon *Salmo salar* are spotted in these areas.



Photo 8. The tumbling bay in the middle of the fishery, an important nursery area for fish. Note great habitat under the scrubby bushes on RB and the shallow gravel bank perfect for small fish.



Photo 9. Looking downstream of tumbling bay, very wide but then narrows up in the wooded area.

There was very little wood actually in the water despite being a heavily wooded area. Presumably this is down to management practices although hinging some

likely looking willows was discussed on the visit. The area shown in Photo 9 could do with some large woody material, the width of the channel would allow fairly bold habitat installation.

The hazel coppice in the wooded section is long overdue, it has a heavy lean on some of it and should be coppiced before it is lost, giving rise to material to use in the river. This should then be done on a rotation basis. Information on coppicing can be found on the WTT website.

http://www.wildtrout.org/sites/default/files/library/Large_Woody_Debris.pdf

This hazel coppice is shading the river and with mature trees all around, it will do the river no harm at all to receive some much needed light.



Photo 10. Hazel coppice on LB shading channel and about to go sideways.

The third inlet enters this reach from the Navigation Canal on the RB of photo 11. This is particularly interesting as it has recently occurred. The perched bank that separates the Navigation Canal and Kanara became breached in the winter of 2013. It was repaired by the Environment Agency, leaving a constant flow of water between the two channels. This section seems the most diverse on the whole reach with a breach in the perched bank running through a heavily wooded section.



Photo 11. Breach from perched bank on Navigation Canal can be seen flowing through woodland into Kanara: wonderful habitat.

The fishery is managed by the Rod Box on a stocked basis, with approximately 250 fish annually stocked into this small section. As discussed with Mr. Paton-Moyle and Mr Teasdale, fishermen are not killing fish like they used to and stocking on many fisheries is reducing year on year as a result. Therefore, it could be worth considering whether not to stock the fishery at all - especially with this lower section showing great potential especially for large adult trout. At the very least, consideration should be given to a reduction in stocking densities to provide a more sustainable environment and potentially a more profitable business model. As a guide, productive rivers are typically able to support 2 adult trout per 100 m². If we assume that the river already holds one wild adult trout, then there is 'space' for one additional, stocked trout per 100m². So, for ease of calculations, if we assume also that the Itchen here is on average 10m wide, this means adding one stocked trout every 10 linear metres of bank. Overstocking numbers of fish simply produces perturbation of both stockies and wild fish, to the detriment of the river and the fishing; it is also very financially wasteful!

4. Conclusions

The Kanara Fishery is considered to be in a good condition although the impoundments are significantly impacting on habitat quality. Significant improvements could be expected if the summer weirs were permanently removed, or at least lowered to improve habitat and fish migration. This would improve sinuosity of the river and will help pool and riffle creation with the natural woody habitat that is already in place. In conjunction with some hinged willow and strategic coppicing the light situation will improve and in time so will the weed growth. It is possible for water-crowfoot (*Ranunculus* spp.) to flourish here with a small amount of work. The improved morphology from removing

weirs could boost *Ranunculus* growth and the extra weed could raise (displace) summer water level and would do a much better job at that than the weirs did.

The width of the river in places is very wide, shallow and shaded. These areas could be drastically improved with the addition of large tree limbs or whole trees (big and bold.) If this is done strategically it could improve the light situation at the same time.

One of the big issues for the fishery is the small access path that is slowly being eroded over the years. The main reason for this is probably the summer weirs! As mentioned previously, the water in higher flows is held up and spills out to the sides, thus creating the erosion. The removal of these weirs in conjunction with bank regrading and/or brushwood structures to encourage marginal growth should fix the erosion problem and improve the habitat as a whole. This will defiantly require some skylighting to help improve the light conditions, to encourage marginal growth.

The lower end of the fishery (photo 10) is in need of some coppicing. There are some very old stands of hazel that are long overdue a coppice; if it's not done, soon some of the stands will go sideways and could be lost. Coppicing on a 10-year rotation would be a sound approach, with the coppiced material used for the erosion protection upstream.

Generally, the fishery is in good health and it's not being over managed. It's nice to see a chalk river flowing amongst woodland with natural habitat features being allowed to form. The light touch approach employed by Pat is providing good habitat for juveniles and adult fish alike.

5. Recommendations

- **The summer weirs should be removed. This will allow the river to be 'free flowing' and may help with the erosion on the LB.**
- **Continue to employ light touch management, e.g. leave fallen trees in the river if they are not impounding the river or causing excessive bank erosion. If a fallen tree does fall in a place where it might cause a problem, adjust it into a more favourable position and secure it with posts and wire to retain the ecological (and fishery) benefit.**
- **Explore possibilities of adding large woody material, tree limbs or whole trees, (big and bold) in the upper and middle section to encourage variation in flow and depth. Approximately 6-10 structures could change this reach and drastically improve it. When building these the general rule is no more than a third of the channel in size. Photos 12, 13 and 14 show some examples of the type of structures that could be installed.**
- **Encourage some coppicing practices especially in the shaded areas, this could weed growth and help manage the coppice as well as providing valuable material for river restoration/ erosion protection. In these eroded areas if some structures like photo 12**

were installed then these would protect the bank as well as helping to establish better marginal growth.



Photo 12. Brushwood mattress constructed with coppiced willow.



Photo 13. Log deflector.



Photo 14. Log deflector combined with folded willow.

- **Consider in the future a bank restoration/ enhancement project maybe in partnership with the WTT. This could include removal of summer weirs and use of faggotts/or brushwood bundles to help protect eroded bank and reinstate marginal habitat.**

Note: All work within 8m of the top of the bank will require a consultation with the EA and may require a formal, written Bespoke Environmental Permit prior to any work being carried out.

Acknowledgement

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

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.

Appendix 1 – River Itchen Conservation Designations

The River Itchen is a Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI).

Special Areas of Conservation (SACs) are strictly protected sites designated under the EC Habitats Directive. Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). Of the Annex I habitat types, 78 are believed to occur in the UK. Of the Annex II species, 43 are native to, and normally resident in, the UK. Details of the process of SAC selection and designation are available on the Joint Nature Conservation Committee's web pages at www.jncc.gov.uk

The habitats and species present on the River Itchen leading to its designation as a SAC are:

- Annex I habitats that are a primary reason for selection of this site

☐ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation

The Itchen is a classic example of a sub-type 1 chalk river. The river is dominated throughout by aquatic *Ranunculus* spp. The headwaters contain pond water-crowfoot *Ranunculus peltatus*, while two *Ranunculus* species occur further downstream: stream water-crowfoot *R. penicillatus* ssp. *pseudofluitans*, a species especially characteristic of calcium-rich rivers, and river water-crowfoot *R. fluitans*.

- Annex II species that are a primary reason for selection of this site

☐ Southern damselfly *Coenagrion mercuriale*

Strong populations of southern damselfly *Coenagrion mercuriale* occur here, estimated to be in the hundreds of individuals. The site in central southern England represents one of the major population centres in the UK. It also represents a population in a managed chalk-river flood plain, an unusual habitat for this species in the UK, rather than on heathland.

☐ Bullhead *Cottus gobio*

The Itchen is a classic chalk river that supports high densities of bullhead *Cottus gobio* throughout much of its length. The river provides good water quality, extensive beds of submerged plants that act as a refuge for the species, and coarse sediments that are vital for spawning and juvenile development.

- Annex II species present as a qualifying feature, but not a primary reason for site selection
- White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*
- Brook lamprey *Lampetra planeri*
- Atlantic salmon *Salmo salar*
- Otter *Lutra lutra*

Further details on the River Itchen SAC can be found at www.jncc.gov.uk/protectedsites/sacselection/sac.asp?eucode=uk0012599

Notification as a SSSI gives legal protection to the best sites for wildlife and geology in England. Natural England has responsibility for identifying and protecting the SSSIs in England under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000). Each SSSI has a citation which details the 'features of interest' for which it has been notified. Each citation shows details of the SSSI location, size and the date of notification. It also describes the general reasons for notification and the habitats, plants and animals that are found at the site. The citation for the River Itchen can be viewed at www.english-nature.org.uk/citation/citation_photo/2000227.pdf

The SSSI is sub-divided into units and these have been the subject of a review by Natural England to assess their status in relation to the original designation. The Government's Public Service Agreement target is for 95% of SSSI land to be in 'favourable' or 'recovering' condition by 2010.