

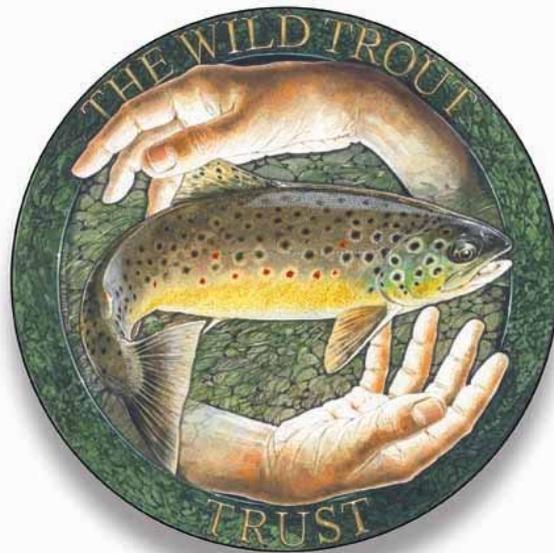
**Advisory Visit Report**

**Rivers Chater & Welland, Rutland**

**Undertaken By Simon Johnson**

**On behalf of Grantham Angling Association  
(Fly Fishing Section)**

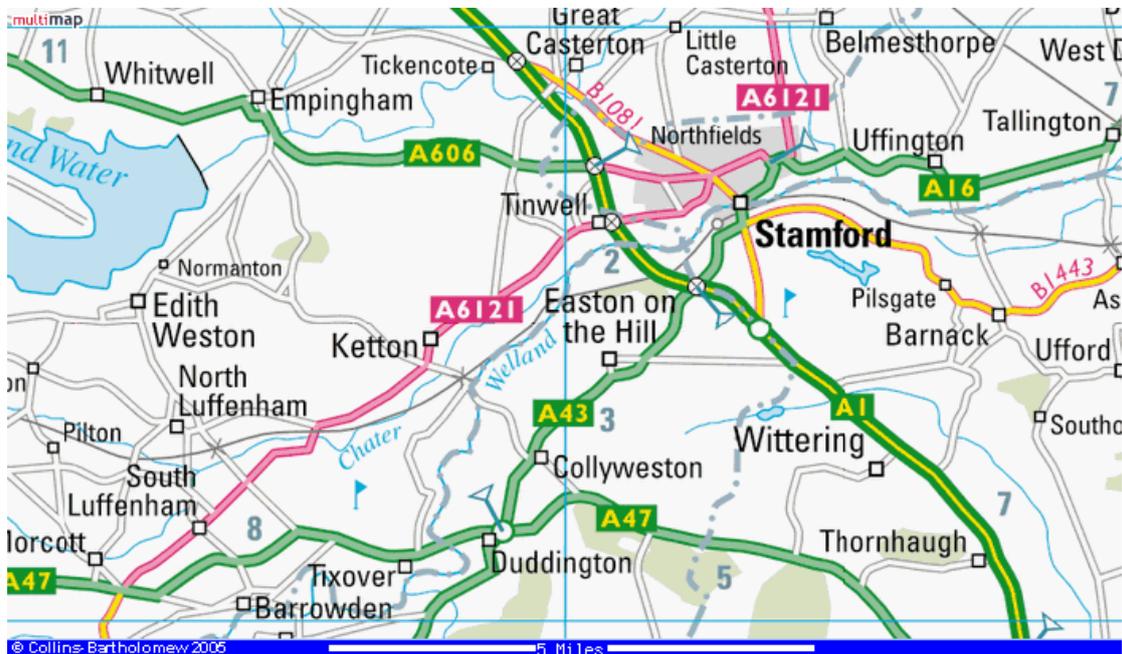
**November 2006**



[The Grayling Society](#)

## 1.0 – Introduction

This report is the output of a site visit undertaken by Simon Johnson of the Wild Trout Trust on the Rivers Chater & Welland, Rutland (Approx Grid Ref SK977047)



Comments in this report are based on observations on the day of the site visit and discussions with officials of the Grantham Angling Association Fly Fishing Section (GAAFFS).

Normal convention is applied throughout the report with respect to bank identification, i.e., the banks are designated left hand bank (LHB) or right hand bank (RHB) whilst looking downstream.

## 2.0 – The Chater

### 2.1 – Fishery Overview

The Chater is a tributary of the Welland which drains through underlying limestone geology. The fishery contains mainly wild trout although it is thought that in the past rainbows may have been introduced upstream. The Club has just taken on the lease of 1.2 miles of double bank fishing on the Chater to its confluence with the Welland with a further mile of single bank fishing on the Welland itself. Club officials have been test fishing the stream during the 2006 season. The fishery will become available to all members in the 2007/8 season. A system of catch and release will be in place with a requirement that members submit annual catch returns. The test fishing exercise this season has found that the size range of

trout in the river appears to show that there are two distinct classes of fish present in the river 10-12cm & 35cm+ (sexually mature adults). The absence of smaller fish (fry and juvenile) may suggest a spawning habitat 'bottleneck' occurring at the spawning phase in the trout's lifecycle.

There are no records of grayling in the Chater, but they are known to be present elsewhere in the Welland catchment albeit in low numbers. Unlike other salmonids, which spawn in the winter, grayling spawn in the spring. Unfortunately there has been insufficient research to establish precisely when and where they spawn. It is known that some grayling migrate considerable distances, sometimes ascending feeder streams to spawning gravels, but others don't go so far and spawn in the main river. The Welland has been extensively modified and engineered for historical land drainage purposes. As a result many features that grayling require for spawning and nursery habitat have been removed by unsympathetic drainage works. With this in mind the availability of suitable spawning and juvenile habitat in tributaries like the Chater is likely to be a key factor in developing a sustainable population of grayling in the catchment.

Native white-clawed crayfish are known to be present in the Chater; however there is cause for concern as the presence of American signal crayfish has also been confirmed in the Welland.

The Club would like to assess the potential of the fishery with a view to undertaking a programme of sustainable maintenance and enhancement and a possible re-introduction of grayling into both rivers

## 2.2 Habitat

The habitat in the first few hundred metres of the fishery comprises a deeply incised channel dominated by silt. The cattle drink on the RHB is in an unsatisfactory condition. The entrance slope is very steep and there is a deep layer of unstable soft mud. This soft mud is a point source of silt entering the river as cattle continue to poach the banks to gain access to drinking water. Sheep grazing on the LHB is causing loss of herbaceous vegetation which could possibly lead to localised erosion problems during flashy winter flood flows.



**Cattle Drink: note steep and silty entrance**



**Overgrazed banks**



**Fallen Willow**

Flows are impounded by a pumping station operated by Ketton Cement who abstract water for quarrying operations before discharging treated water just a few metres downstream of the intake pipe. In places tree and shrub growth (alder, bramble, hawthorn) is leading to some over-shading of the channel. The river then enters a tight S-bend where a fallen willow (Large Woody Debris) is blocking the channel and impounding flows. The willow should be cut-back by approximately forty percent leaving the live growth intact.

Gravels suitable for trout spawning are almost completely absent from this section of the stream.

Downstream of the S-bend the channel is narrower due to the presence of bur-reed on both banks. There appears to be a narrow relict spoil heap running along the RHB, indicating historical dredging activity.

The discharge from the pumping station appeared to contain no suspended solids and the weir immediately downstream does not represent a barrier to fish wishing to migrate upstream.



**Ketton Cement Pumping Station (outflow)**

Downstream of the pumping station the bed of the river starts to become a lot shallower. There are macrophytes present in the channel which are possibly crowfoot or river water dropwort. In places tree and shrub growth is getting to the stage where it could cause problems of over-shading.

The river now starts to take on a more natural form with the presence of a pool:riffle sequence interspersed with beds of water crowfoot. Gravels appear to be imbedded with a layer silt and sand. Although the banks of the river are steep some berms with marginal sedge vegetation are present, providing overhead cover for fry and adult trout. Fencing on both banks is in a state of disrepair and sheep are gaining access to the marginal vegetation on the LHB which is a cause for concern.



A more 'natural' channel d/s of pumping station

There is little Large Woody Debris (LWD) currently in the channel. Woody debris<sup>1</sup> in rivers can provide habitat for a variety of animals. Brown trout numbers increase significantly with the presence of woody debris along the banks and in the river as they provide refuge and cover. It may also offer lies for otters or perches for kingfishers. Woody debris in the river can also create pools and riffles in sections of the river that would otherwise have a dearth of aquatic habitats. It can also retain leaf litter and act as an energy reservoir for the river section.

The river now continues to its confluence with the Welland and stream gradient remains good, however the banks are still steep and the channel still lacks suitable spawning riffles. Marginal

---

<sup>1</sup> See WTSG page 39

(sedge) and in-channel vegetation (starwort / crowfoot) remains throughout the rest of the reach.

Several of the arable fields that run down to the river do not have set-aside buffer strips. Although the valley slopes are not steep there is a risk that sediment run-off from bare soil could enter the river channel.



**The Chater – Ketton Cement Works in background**

### 3.0– Chater Recommendations

Above the pumping station enhancement opportunities are somewhat limited. However the reach could be useful as a deeper water refuge area for fish to over-winter in. It is recommended that the fences are repaired and excessive tree and bush growth is managed to create a mosaic of light and shade.

Selective coppicing of alder should be undertaken and incorporated into a 5-7 year rotational programme.

The cattle drink at the top of the beat on the RHB needs urgent attention. The heavily poached bank is a source of fine sediment which could choke spawning riffles further downstream. All fine material should be scraped back and replaced with layer of rounded flints approximately 20cm deep. This will allow cattle access to safe

clean drinking water, whilst not allowing the ingress of silt into the river.



**Restoration of cattle drink with fencing to allow safe, clean access for cattle.**

Below the pumping station the restoration options become a bit more exciting!

There is a lack of suitable spawning habitat in the Chater. It is recommended that a series of approximately twelve spawning shallows, or riffles as they are known, are introduced downstream of the pumping station to its confluence with the Welland. Each riffle should be approximately ten metres in length comprising well-mixed gravels in the 5-40mm size range, to a depth of at least 20cm<sup>4</sup>. On the RHB side of each riffle the banks could be scalloped to allow the development of a vegetated margin. Legal Consent from the Environment Agency would be needed to dispose of the spoil in adjoining fields outside of the floodplain. Existing riffles could be further enhanced with a 'top-up' layer, 10-15cm depth (5-6 tonnes) of fresh gravel.

Alternatively the club could undertake a rotational programme of gravel jetting to purge fine material from riffles in October each year just prior to spawning season (Nov-Dec).

Ketton Cement operates one of the largest concrete works in the country and could potentially be a useful donor for the gravel required to undertake these works. They may also be prepared to help with transportation of aggregate to the bank.

---

<sup>4</sup> See WTSG page 40-41

LWD should be keyed into the bank facing upstream at each riffle location to act as current deflector to facilitate the sorting / self cleansing of gravels during winter flood flows.

It is recommended that all fields running adjacent to stream have buffer strips (5-9m) created to reduce the risk of fine sediment run-off from arable fields. This is of particular importance if maize is planted. Further to this it is also recommended that fences be installed in areas where stock may gain access to the stream.

Buffer strips adjacent to a watercourse can be treated as non-rotational set aside. The same rules apply as strips adjacent to hedges and woodland edges, further information can be obtained from: -

[www.defra.gov.uk/farm/capreform/pubs/pdf/Setaside2006.pdf](http://www.defra.gov.uk/farm/capreform/pubs/pdf/Setaside2006.pdf)

Grass buffer strips can be included as part of an Entry Level Scheme in the Defra environmental stewardship package.

Rules and points for grass margins are detailed in the ELS handbook - [www.defra.gov.uk/erdp/pdfs/es/els-handbook.pdf](http://www.defra.gov.uk/erdp/pdfs/es/els-handbook.pdf)

For capital works such as fencing, this would have to be part of a Higher Level Scheme in environmental stewardship or, if there is already a Countryside Stewardship Scheme or an Environmentally Sensitive Area agreement in place this may be able to be added to any existing agreement. Entry to HLS is only available once an ELS scheme has been agreed. Further info on HLS can be found at - [www.defra.gov.uk/erdp/pdfs/es/hls-handbook.pdf](http://www.defra.gov.uk/erdp/pdfs/es/hls-handbook.pdf)

The current quality of instream habitat is not adequate to support a self-sustaining population of grayling. Undertaking the above recommendations would be a necessary prerequisite for any re-introductions of grayling back into this reach of the Chater. GAAFFS should contact Environment Agency (EA) Fisheries Officers to get a view on the likely outcome of any application to re-introduce grayling.

## 4.0 – The Welland

### 4.1 – Fishery Overview

This section of the Welland upstream of the confluence with the Chater is heavily engineered with high flood banks. The river has been extensively dredged for flood defence purposes. Brown trout, grayling and specimen chub are known to be present the latter probably benefiting from the presence of signal crayfish.

### 4.2 Habitat

Continuing upstream there are areas where the bed shallows up, indicating historical locations of riffles before the dredger arrived! The river then goes through a sequence of pools and riffles before reaching the upstream boundary of the fishery. In one location a large Goat Willow has blown into the channel and has left itself partially hinged into the bank. This is a superb example of how LWD can scour and sort gravels that are suitable for trout to spawn on.



**Natural LWD! – Note lighter area of clean gravels.**

The river is about 15 metres wide and in one location a mid-channel island has formed which has narrowed the channel and created conditions suitable for trout and grayling to spawn in.



**Mid-channel island and spawning channels**

At the top of the section visited there are a number of mature willows that may benefit from re-pollarding.



**Pollarded Willows**

### 4.3 – Welland Recommendations

The Welland is a much larger river than the Chater and as such restoration options are of a different scale.

The river is around 15 metres wide and would benefit from some narrowing using brushwood faggots with granular soil or chalk backfill. The aim of this narrowing would be to create a two-stage channel to increase stream velocity during low summer flows whilst allowing winter flood flows to 'over-top' back into the engineered channel. Another narrowing option would be the creation of small mid-channel islands. Islands can be created from hazel faggots, willow spilling or coir rolls. Infill can be in the form of woody brash or granular sub-soil. Mid-channel islands can also be located in areas of bank narrowing<sup>5</sup>. It may be necessary to protect the upstream toe of the islands from erosion with loose stone.

All current riffle and shallow glides would benefit from the introduction of LWD. Due to the flashy nature of the catchment all LWD should be securely keyed into the bank and secured to the bed of the river using posts and wire. LWD would facilitate bed scour, with associated sorting of substrate and creation of pools and marginal shelves. It also provides habitat for a range of species groups including macroinvertebrates, fish, birds and mammals. LWD could be sourced from coppicing work on the Chater or from nearby woodlands on the Burghleigh Estate.

It is also recommended that the club ask members to maintain accurate catch records to establish a baseline to monitor any post restoration improvements in fish populations. All anglers should be asked to record their fishing in terms of time spent on the river, the species caught, sizes and dates. GAAFFS could also submit data to the Environment Agency grayling log book recording scheme. Full details of this scheme can be obtained by contacting Mr Richard Cove, [richard.cove@environment-agency.gov.uk](mailto:richard.cove@environment-agency.gov.uk)

Lastly, it is vital that fishing clubs understand what is happening to populations of riverflies in their streams and rivers. To this end WTT recommends that fishing clubs register their interest in taking part in the Riverfly Partnership monitoring and training initiative. The initiative aims to support fishing clubs to monitor and help conserve the environment. More details can be found on [www.riverflies.org](http://www.riverflies.org)

---

<sup>5</sup> See WTSG pages 41-45

## **4.0 – What next? – Making it all happen!**

This report makes a series of recommendations that will improve both the biodiversity and status of the wild trout and grayling populations in both rivers.

The AV represents phase 1 of a potential 4 phase package of WTT assistance. At this point it is worth discussing restoration plans with a suitably qualified contractor to get ball park project costs, before requesting Phase 2, a worked-up WTT project proposal. However before this happens it is strongly recommended that contact be made with the Fisheries/ Biodiversity and Development Control functions of the local Environment Agency to arrange a 'pre-application meeting'. Pre-application meetings are extremely useful to help scope out design work and to take into consideration any issues that could affect proposed works. Local Natural England staff should also be invited to any pre-application meetings to cover any protected species and habitats issues.

The worked-up proposal should provide all the necessary information for the completion of a land drainage consent application. This legal consent from the Environment Agency must be obtained in writing before works can commence. Consents can take up to two months to process.

It is proposed that the WTT, or its representative, attends the pre-application meeting before commencing a detailed project specification / proposal

On successful completion of phase two of the project an application can be made to the WTT (Phase 3), for seed-corn funding to kick-start the project. Typically this is between £1000-2000.

Physical works could be yet further kick-started with the assistance of a WTT 'Practical Visit' (PV) (Phase 4). The WTT will fund the cost of labour (two-man team) and materials. Recipient clubs will be expected to cover travel and accommodation expenses of the advisers. The use of specialist plant will be by separate negotiation.

Wet-work advisers will demonstrate one or more of the following techniques that are appropriate to the site.

- Tree management (coppice, pollard, sky-lighting)
- Tree Planting
- Fencing (Installation & Repair)
- Stream Narrowing (Faggots, Coir Rolls, Spilling)
- Flow Deflectors
- Introduction of spawning substrate
- Gravel Jetting
- Introduction / Management of Woody Debris

*Note: Recipients of the programme must have received a WTT AV and have obtained the appropriate consents from the Environment Agency, Natural England, etc, prior to arrangements being made to undertake the PV.*

Applications for all the above should be made via [projects@wildtrout.org](mailto:projects@wildtrout.org)

## **5.0 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.

It should be noted that it is a legal requirement under the Salmon & Freshwater Fisheries Act (1975) that all stockings of fish, fry or ova into inland waters receive written consent from the EA prior to undertaking any introduction/s.