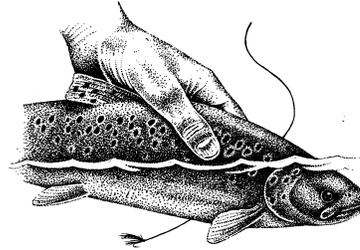


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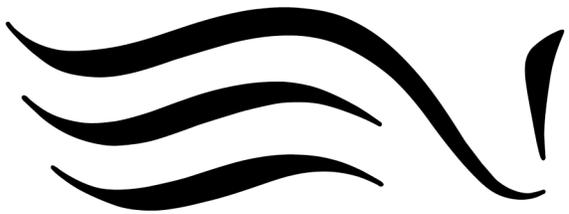
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To Mr John Aston  
Cod Beck Fishing Club

Draft report on one day visit to Cod & Broad Becks,  
North Yorkshire

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## Introduction

This visit was requested by Mr John Aston who fishes the Cod and Broad Becks and helps run the Cod Beck Fishing Club, Thirsk, North Yorkshire. On the day of the visit ( April 24<sup>th</sup> 2002) I was accompanied by Mr David Brown who provided very valuable information and advice on the local problems affecting the fishery. David follows in the footsteps of his father as bailiff on the Becks.

The Cod Beck Fishing Club has access to both the Cod and Broad Becks which are spring-fed upland streams, the Broad Beck being richer by virtue of its limestone aquifer feed in the North York Moors. The ecological quality of this spring-fed stream was excellent whilst that of the Cod Beck appears to be suffering more from the twin effects of over-shading and intensive agriculture.

Fishing is primarily for brown trout (some stocking has taken place over the years) and for grayling. Eels, bullheads, stone loach, minnows, brook and river lampreys are also present in these high quality streams. The Cod Beck had abundant signs of otter activity; one mink was seen.

## Current condition of the Becks

### Broad Beck

The Broad Beck is an excellent small stream trout water. The invertebrate community has abundant shrimps, olive mayfly nymphs, numerous cased and caseless caddis flies, river limpets and other snails, chironomid midges, blackflies, leeches and other groups. At the time of my visit water quality appeared good although past serious pollution episodes are known to have occurred. The stream (where surveyed) has a good balance of open and shaded sections. The banks are in good condition and there is an abundance of tree root cover - a vital habitat component for wild brown trout.

The over-shading which is prevalent on the Cod Beck may not be so important in limiting fish stocks on the Broad beck. **It is recommended, however, that the degree of tunnelling present is reviewed during a careful walk of the stream.**

**It may be the case that spawning gravels are in short supply and it is also recommended that the Beck is walked carefully to assess just how many clean gravel shallow gravel riffles are available to spawning trout.** Upstream migration by trout is thought to be limited by the weir upstream of the A19 road.

Abstraction may well be limiting the potential of this stream (and of the Cod Beck which it joins upstream of Brawith Hall). The conservation and angling values of the catchment depend critically on an abundant supply of high quality water. **It is recommended that liaison with the Environment Agency ensures that the Catchment Abstraction Management (CAM) policy takes due regard of the ecological requirements of this beck.**

## Cod Beck

The beck supports native (white-clawed) crayfish, wild brown trout, grayling, brook and river lampreys, bullheads, stone loach and minnows - this is a fish fauna of high conservation value, especially when combined with the abundant signs of otter activity. The Cod Beck deserves support to protect these conservation and recreational values.

The first sampling site on the Beck was towards the top of the fishery at Cotcliffe Bridge. Here the farmer upstream is conservation-conscious and has fenced out cattle from the stream side. This allows a rough grassland and shrubby buffer zone to develop - helping protect water quality from fertiliser, pesticide and silt inputs.

**This approach of buffer-zoning the Beck from intensive agricultural effects is excellent and should be encouraged wherever possible along the Cod Beck.**

Discussion with David Brown revealed a long-term trend from low-intensity grazing land to increasing arable land use and intensified grazing regimes with higher fertiliser inputs. These changes in farming practice are affecting the Beck in the following important ways:

- Silt and sand is entering the beck from ploughing and ditching activity.
- Fertilisers are washing into the Beck from arable and grassland.
- It is possible/likely that sheep dip is polluting the stream.
- In places cattle are breaking down banks and causing soil to enter the stream.

## Silt

Silt clogs spawning gravels for trout, grayling and lampreys. Silt and sand also clog gravel beds for invertebrates which normally live in the spaces between the gravel (eg snails, caddis larvae, shrimps). Ideally, silt inputs to the stream should be minimised through buffer-zoning riparian meadows and through careful ditching and drainage works which minimise silt and sand inputs to the system. The Environment Agency leaflet - Ditching advisory guide; damaged environments and ditching provides valuable information and advice on this topic. Copies of the leaflet should be available from the nearest Environment Agency Area Office.

## Fertilisers

The bed of the Beck is clogged with dark spring time growths of diatom algae and with filamentous green algae. These growths are indicative of nutrient enrichment (eutrophication) which is not good for aquatic plants, invertebrates or fish. Buffer-zoning in the right places can help to reduce these nutrient inputs.

## Pesticides

Intensive agriculture uses many pesticides and herbicides on both livestock and arable crops. These can have very serious impacts on invertebrates (including native crayfish). Perhaps the biggest threats involve the potential for sheep dipped with Synthetic Pyrethroid (SP) dips to wade in becks while still wet. Only tiny concentrations of SP sheep dip can kill invertebrate populations for hundreds or thousands of metres downstream. Discarded dip can be devastating if allowed to enter watercourses. Low

levels of invertebrates sampled in places on the Cod Beck made the author suspect that sheep dip inputs could be happening. **This is worth investigating.**

## Livestock

Wherever livestock break down stream banks they can have the following impacts:

- Adding to silt inputs
- Over-widening the channel
- Lowering water levels in the over-wide stream
- Over-grazing marginal and in-stream plants
- Possibly introducing SP dip and other pollutants.

The solution is the routine fencing-out of livestock, where appropriate.

Invertebrate samples at Cotcliffe Bridge revealed a relatively healthy caddisfly, shrimp and mayfly nymph community. The abundance and variety of invertebrates was markedly lower than that found in the Broad Beck - probably reflecting differing water quality.

Even in this upper section, the bed of the Cod Beck tends to be silty and clogged with blanketing algal growths - these are not good signs of water quality.

Further sampling of the Beck (eg at Mrs Brown's farm) revealed relatively low (and sometimes very low invertebrate communities. Reasons for this are thought to include:

- adverse water quality from the intensive farming in the catchment (but not at Mrs Brown's)
- silting of the bed
- over-shading by trees which 'tunnel' the stream when leaves are fully developed.

## Recommended solutions

### 1. Gravel-jetting.

Wild trout must have relatively clean gravels to spawn in - their eggs need a clean water supply whilst buried deep in the gravel over-winter. Ideally, as mentioned above, excess sediments should be kept out of streams but, in the real world, this seldom happens. Spawning gravels (usually found in a bar diagonally across the stream at the tails of pools - a 'riffle') can be de-silted by high-pressure water-jetting. A small, portable petrol-driven water pump can readily be rigged up with a hose ending in a tubular metal probe which has been hammered flat to produce a high pressure jet. This probe should be inserted in the gravel at the head of the riffle and worked thoroughly through the gravel working across and downstream to create a de-silted area. This should be done in early October before trout look for spawning habitats. It is important to do such work in areas where trout naturally spawn. this may be well-upstream on the Cod beck system so the following recommendations are important:

- Look for trout redds in winter to target where future work should be done.
- Beg, borrow (Environment Agency?) or make a water-jetter and try it out on some limited areas this autumn. Take advice from the Agency on locations.
- A two-man team on a stream the size of the Cod Beck should be able to clean three or four riffles in a full day's work.

## **2. Tree work**

Over-shaded streams have lower weed, invertebrate and fish stocks than streams which have been 'sky-lighted' to let in the light and promote productivity. Ideally, a stream should have well-bound banks with tree, shrub and grass roots and have a mosaic of well-lit and shady sections. This is best achieved by drawing up a coppicing / pollarding management plan and then tackling it section-by-section. The results can be startlingly good and encourage further work. To get the whole of the Cod Beck fishery done would entail a great deal of work but sponsorship of a habitat restoration project could allow this to happen.

**The Wild Trout Trust are able to advise on sources of funding for this type of project.**

## Reference

Environment Agency (2001) Ditching advisory guide; damaged environments and ditching. Produced in south-west region.

Draft report April 27<sup>th</sup> 2002, by Nick Giles