



Advisory Visit

Skeeby Beck, North Yorkshire

2nd November, 2009



1.0 Introduction

This report is the output of a site visit undertaken by Tim Jacklin of the Wild Trout Trust to the Skeeby Beck, a tributary of the River Swale, North Yorkshire on 2nd November, 2009. Comments in this report are based on observations on the day of the site visit and discussions with the landowner, Ian Long, and WTT member, Barry Hannigan.

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 Catchment and Fishery Overview

The Skeeby Beck is a tributary of the River Swale, the confluence being west of Brompton-on-Swale, near Richmond, North Yorkshire. The 2.4-km section of the Beck inspected during this visit lies on farmland between the Swale confluence and the village of Skeeby. The Beck falls within the Pennine Dales Fringe Natural Area (www.naturalareas.naturalengland.org.uk/science/natural/profiles/naProfile15.pdf)

Land use in the valley of the Skeeby Beck is largely agricultural, with a mixture of pasture and arable fields. On Mr. Long's farm, the land is cultivated for winter wheat and rape, plus grazing for horses (cover photo); there are no longer any cattle or sheep raised on the farm.

There is a 3-acre lake on the site which is stocked with rainbow trout, and this is where the majority of the approximately 20-strong angling syndicate fish, rather than the beck. The beck is known to hold wild brown trout and grayling, and no stocking takes place.

3.0 Habitat Assessment

Overall, this section of the Skeeby Beck has good instream habitat for trout and grayling. The beck has a meandering planform, and a varied depth profile. There is a mixture of deeper pools, shallow riffles and smooth glides giving a range of habitats suitable for all life stages of trout and grayling. The river bed is comprised of a range of particle sizes from cobble down to sand, with the

occasional boulder. There are a number of areas with suitably sized gravel for trout and grayling spawning.

The banks of the beck are lined with mature trees, mostly alders, but including some ash, sycamore, hawthorn, and willow. Some areas have denser stands of trees than others, but overall there is a good balance of tree cover and light and shade. It is important to strike this balance to maintain cool water temperatures in summer, and allowing in some light to promote the growth of aquatic vegetation.



Photo 1 The downstream end of the reach

Some of the alder trees have tarry spots on their trunks; this is a sign of the fungal disease *Phytophthora* which will eventually kill the tree (<http://www.forestresearch.gov.uk/fr/INFD-737HUN>). Coppicing such trees will reduce the risk of losing the entire tree from the river bank and exposing the bank to accelerated rates of erosion. A programme of rotational coppicing as outlined in the *Wild Trout Survival Guide* (provided during the visit), should be implemented, selecting the worst affected alders first. A best practice guide for coppicing is included in Appendix 1. Note that coppiced re-growth needs to be protected from grazing animals.

A brief kick sample for invertebrates was carried out, and this revealed caseless caddis (*Hydropsyche* sp.), olive nymphs (*Baetis* sp.) and the fish species, bullhead (*Cottus gobio*). There is reportedly a good hatch of Mayfly (*Ephemera* sp.) on the beck. This indicates reasonably good water quality. Water quality can be measured by sampling invertebrates in this way, and the Riverfly Partnership provide training courses and equipment for anglers wishing to keep an eye on their local waters; see www.riverflies.org for further information, or contact Bridget Peacock at riverflies@salmon-trout.org.

Riparian land use alongside the beck was largely grazing for horses, with some arable (rape) cultivation towards the downstream end of the fishery. It is preferable to have pasture rather than cultivated land alongside watercourses to minimise sediment run off into the river which damages fish spawning habitat. All the land is within the Entry Level Stewardship scheme (ELS). The arable fields have a generous headland alongside the river, which promotes a strip of 'shaggy' marginal vegetation alongside the river – this is good habitat which provides excellent cover for fish where it overhangs the river margins. In contrast, the grazing fields have unfettered stock access to the river, and here marginal vegetation tends to be closely grazed (Photo 2).



Photo 2

The grazed banks would benefit from reduced grazing pressure to promote the growth of 'shaggy', overhanging marginal vegetation. However, there is a caveat, in that the invasive non-native plant Himalayan balsam is present. Grazing pressure may currently be limiting the spread of this species, so some alternative means of control may have to be instigated if grazing is reduced. The use of temporary electric fencing, or fencing with gates to allow controlled grazing access, could be used to achieve a balance between a healthy riparian zone and controlling balsam. If the manpower is available, two or three working parties can effect reasonable control by hand pulling before the balsam flowers in late June.

Himalayan balsam *Impatiens glandulifera* was introduced to the UK in 1839, and is now naturalised, especially on riverbanks and waste ground and has become a problematical weed. It is a tall, robust, annual producing clusters of purplish pink (or rarely white) helmet-shaped flowers. These are followed by seed pods that open explosively when ripe, shooting their seeds up to 7m (22ft) away. Each plant can produce up to 800 seeds.

It tolerates low light levels and, in turn, tends to shade out other vegetation, impoverishing habitats. Being an annual plant it dies back in winter leaving large areas of bare bank vulnerable to erosion. Its presence along riverbanks is therefore undesirable.

Incentives for creating riparian buffer zones may be available under ELS and Higher Level Stewardship (HLS) schemes. An additional benefit of such headlands is to encourage the growth of young trees and provide succession (and hence bank stability and protection) to the older trees currently dominating the river bank. Obviously grazing would have to be completely excluded from areas where tree growth was being encouraged, and appropriate invasive weed control carried out.

There are a number of crossing points for farm vehicles and animals along this stretch of the beck. These create pathways for sediment to be washed into the river. Fine sediments can clog riverbed gravels and smother incubating trout and grayling eggs, which require a constant flow of water through gravels to provide oxygen and remove metabolic waste. Trout eggs are particularly vulnerable, as they can spend around 5 months within the gravel (November – March). Measures to reduce the risk from these access points include reducing their number and reinforcing the approach / standing areas.



Photo 3 River crossing point – a source of fine sediment



Photo 4 Large woody debris removed from the beck

In a number of areas, fallen trees and debris dams had been removed from the beck. 'Large Woody Debris' (LWD) is a general term referring to all wood naturally occurring in streams including branches, stumps and logs. Almost all LWD in streams is derived from trees located within the riparian corridor. Streams with adequate amounts of LWD tend to have greater habitat diversity, a natural meandering shape and greater resistance to high water events. Therefore LWD is an essential component of a healthy stream's ecology and is beneficial by maintaining the diversity of biological communities and physical habitat.

The presence of LWD has been shown to be extremely important in several respects:

- An increase in the variety of flow patterns, depths and localised velocities.
- Development of high in-channel physical habitat diversity
- Significant benefits to the control of run-off at the catchment scale, as Woody Debris helps regulate the energy of running water by decreasing the velocity. Thus the 'travel time' of water across the catchment is increased resulting in a less 'flashy' regime.

Traditionally many land managers and riparian owners have treated LWD in streams as a nuisance and have removed it, often with uncertain consequences. This is often unnecessary and harmful: stream clearance can reduce the amount of organic material necessary to support the aquatic food web, remove vital in-stream habitats that fish will utilise for shelter and spawning and reduce the level of erosion resistance provided against high flows. In addition LWD improves the stream structure by enhancing the substrate and diverting the stream current in such a way that pools and spawning riffles are likely to develop (Figure 1). A stream with a heterogeneous substrate and pools and riffles is ideal for wild trout and a range of other species.

If a tree trunk or branch is causing a severe problem then by all means move it but try and retain as much within the channel as possible, or reposition it to a more favourable location. LWD may make some sections of river unfishable, but the chances are its retention will increase trout stocks; it is without doubt the simplest and easiest way to promote improved habitat on a stream like the Skeeby Beck. Further advice LWD retention is available from the Wild Trout Trust.

Trimming of trees and branches is being contemplated to improve angling access to the beck. This is not a problem as long as it is done carefully, and the importance of **low level** cover is appreciated. Branches, tree trunks, tree roots, overhanging vegetation, etc. in the water or within 18 inches of the water surface are very valuable habitat, providing cover which retains fish; its removal will directly reduce the numbers of fish within the reach. Higher level vegetation is far less critical, and can be safely pruned although due consideration should be given to channel shading and leaving some refuge areas for fish.



Photo 5 Retained LWD (foreground) and removed (background, left) – the former is most beneficial to fish stocks



Photo 6 Low cover over the water (a small willow bush) – valuable fish holding habitat that should be retained



Photo 7 Diseased alders on the outside of bends are vulnerable to loss leading to accelerated bank erosion – these are prime candidates for coppicing.

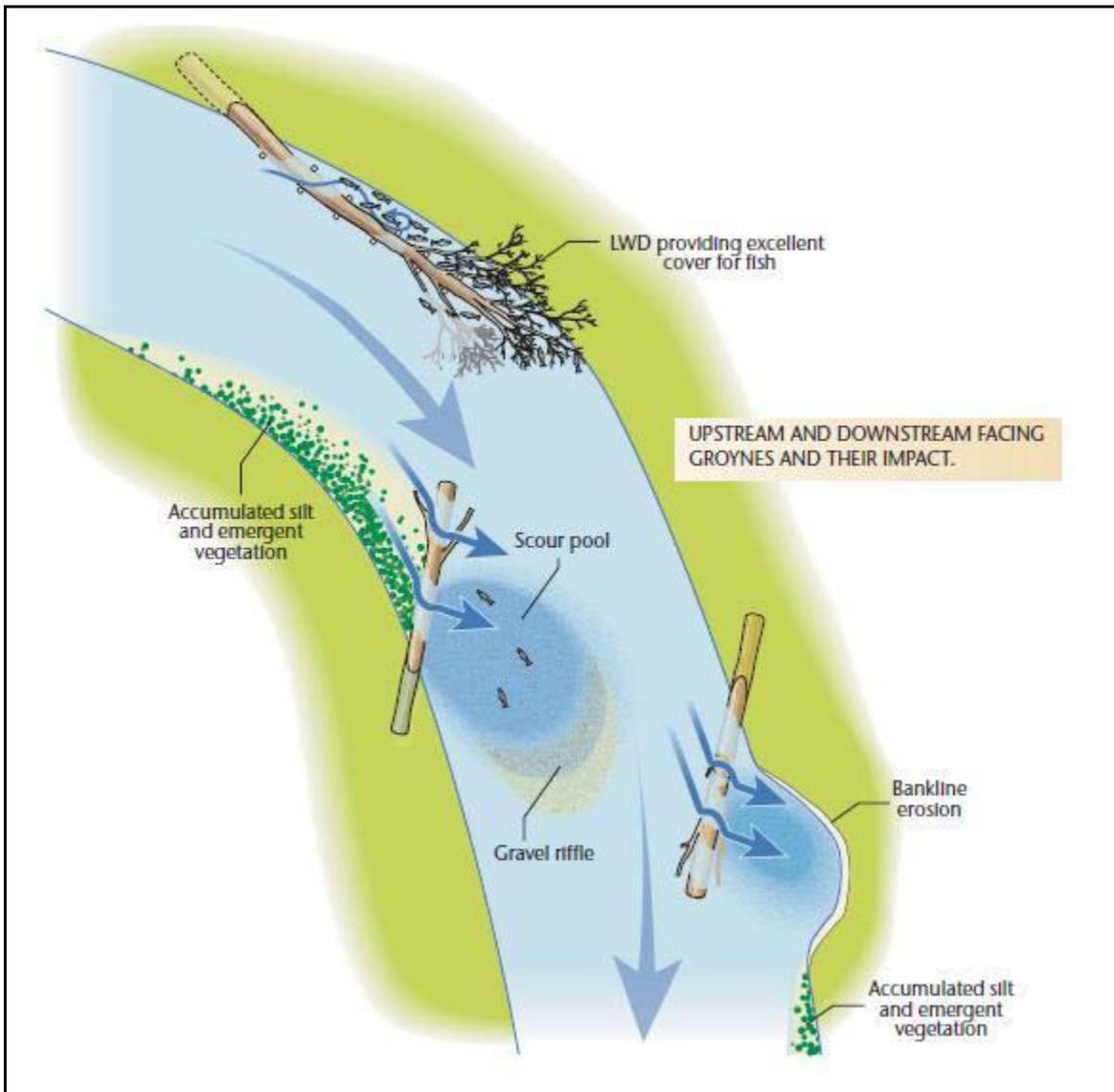


Figure 1 Large Woody Debris (LWD) and its effects. Upstream pointing groynes are preferable to downstream, to avoid bank erosion.

4.0 Recommendations

- Adopt a policy of retaining natural LWD in the river channel unless it is causing significant problems. The West Country Rivers Trust provides a useful guide to the management of natural LWD:
 1. Is the debris fixed, if yes then continue to 2, if not continue to 5.
 2. Is the debris causing excess erosion by redirecting the current into a vulnerable bank? If yes then go to 5 if not then go to 3.

3. Would fish be able to migrate past it (take into account high river flows).
If yes go to 4, if no go to 5.

4. Retain the woody debris in the river.

5. Extract or reposition the debris.

Note: If a debris dam needs to be removed but there is still a significant amount of the root system attached to the bank then it is recommended that the stump be retained for its wildlife habitat value and its stabilising effect on the bank.

- Deliberately introduce LWD to the river in selected areas to improve habitat diversity and cover for fish. Whole trees or logs can be fixed by a variety of means to achieve this, and WTT can advise further on these techniques (see Figure 1).
- Start a programme of rotational coppicing of riverside trees with the long-term aim of producing a mosaic of trees in different stages of re-growth. Focus on coppicing the alders showing signs of *Phytophthora* infection.
- Create a buffer strip alongside the river to reduce grazing pressure and promote growth of a shaggy riparian fringe and encourage tree succession.
- Consider becoming involved in the Riverfly Partnership invertebrate monitoring scheme.
- Investigate whether native white-clawed crayfish are present within the catchment and if so, take steps to protect the population – see the booklet available at www.sbap.org.uk/library/index.php?page=Species
- Encourage anglers to fish the beck and record their catches. It may be worth employing an accomplished river angler (such as Stuart Crofts) to hold a demonstration day on river fishing skills for syndicate members.
- Please note: it is a legal requirement that all the works to the river require written Environment Agency (EA) consent prior to undertaking any works, either in-channel or within 8 metres of the bank.



Photo 8 Alders coppiced on the River Dane, Cheshire in 2004



Photo 9 The same site in 2008. It is preferable to coppice more widely spaced trees rather than blocks like this, and to plan a rotation to achieve different heights of regrowth.

5.0 Making it Happen

The WTT can provide further assistance in the following ways:

- Advice and support in formulating a worked-up project proposal and assistance with the preparation of Environment Agency Land Drainage consent applications.
- Financial support to kick start projects. Advisory Visit bursaries of £500 to £1500 are intended to be used as matched funding to assist in raising money from other funders towards project works. Sage or Hardy rods are available at cost price via WTT for use in fund raising auctions/raffles to raise money towards projects.
- Projects can be kick-started with the assistance of a WTT 'Practical Visit' (PV) where habitat improvement techniques are demonstrated. The WTT will fund the cost of labour (two-man team) and materials. Recipients will be expected to cover travel and accommodation expenses of the advisors. The use of specialist plant will be by separate negotiation.

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

Applications for all the above should be made via projects@wildtrout.org

6.0 Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for supporting its programme of advisory and practical visits.

7.0 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.

Appendix 1 – Good Practice Code for Coppicing

Coppicing of riparian trees during the winter is a traditional method of management. This can benefit the river, the farm and the whole catchment area. One of the aims is to increase the amount of light falling on the banks and bed of the river to promote the growth of bankside grasses and aquatic macrophytes and algae. Coppicing should be planned on a minimum of a five to nine year cycle.

1. Before carrying out any coppicing a plan should be drawn up. For this the presence of protected species (including bats and otters) should be determined (see below), and their habitat requirements taken into account.
2. In heavily shaded sections, coppicing should be concentrated in fast flowing shallow 'riffle' areas with lighter work around the glides and pools.
3. Try to leave most of the remaining shading on the south bank along glides.
4. Coppice trees only from October to March and, in any case, well before they come into leaf in the spring.
5. Avoid cutting right back to old growth. Aim to cut to knee height, retaining at least 200mm of new growth. This helps promote good re-growth of the coppice stool.
6. Preferentially leave ivy covered trunks.
7. Leave old and dead trees unless dangerous. Very old or "veteran" trees provide valuable habitat for a variety of wildlife and can contain a rich lichen flora. Some bat species are known to roost under loose bark and in tree holes.
8. Do not take mature timber. It does not coppice well. Any trees with good holes, cavities, splits, or loose bark should be retained.
9. Do not use machinery in the river. There are risks of pollution from fuel, oils and silt associated with use of machinery, which could result in prosecution.
10. Do not damage riverbanks or tree roots with machinery as this may lead to additional erosion. Avoid the use of machinery within 3m of the bank edge or tree stems.

11. Do not work **in** the river between 1 October and 31 March to prevent disturbance to spawning trout, trout eggs and newly hatched fry.
12. Coppiced timber and brash can form valuable habitat for a wide variety of wildlife. Where possible, it should be used to create LWD in the channel, or stacked and secured in such a way as to avoid it washing away and either endangering fences downstream or accumulating on obstructions (bridges etc) and causing a flood risk. If material cannot be securely stacked then it should be removed from the flood plain completely. Should any material be burnt then this should be done no nearer than 50m to any other tree. In no circumstance should burning take place in the river channel. Ash must not be allowed to enter the watercourse.
13. Leave the stumps in the bank as they help to protect the bank from erosion and provide valuable habitat for fish. Tree roots also provide lying up sites for otters and nest sites for riverine birds such as grey wagtail and dippers.
14. Coppicing should be fenced to prevent damage to new growth from browsing stock.
15. Before working in areas with wildlife designations - Natura 2000 sites, Sites of Special Scientific Interest, National and Local Nature Reserves – you must first consult the relevant authorities, to avoid breaching wildlife legislation.

PROTECTED SPECIES

Many of the animals associated with river corridors (including bats, otters and dormice) are protected under Schedule 5 of the Wildlife and Countryside Act (1981), as amended by the Countryside and Rights of Way Act (2000) (CROW 2000) and The Conservation (Natural Habitats, &c.) Regulations 1994. This now extends the offence in section 9(4) of the 1981 Act to 'subject to the provisions of this Part, if any person intentionally or recklessly kills, injures or takes any wild animal included in Schedule 5, he shall be guilty of an offence.

BATS

All work that may affect bats should be discussed in advance with Natural England as a bat licence is required to survey (licensed consultant/bat

worker) or carry out work on roost sites (DEFRA license). Under the Bonn Convention (Agreement on the Conservation of Bats in Europe) the UK is also required to protect their habitats, requiring the identification and protection from damage or disturbance of important feeding areas.

Bank side trees form important habitats for bats, as certain species are dependent on trees. Check trees for signs of bat roosts:

- obvious holes, cavities and splits in trunks and limbs
- dark staining on the tree below a hole
- staining around a hole caused by the natural oils in bats' fur
- tiny scratch marks around the hole from bats' claws
- droppings below a hole - they look similar to those of rodents but crumble to a powder of insect fragments
- noise (squeaking or chittering) coming from a hole
- check holes by inserting a mirror and watching the hole at dawn or dusk
- bats will also roost behind loose bark, which should be checked similarly.

If a roost is identified or suspected a more detailed inspection must be undertaken by someone with the relevant experience and correct license to assess, obtain and implement a DEFRA license where tree roosts will be damaged or lost. Whether bats are found or not, any trees with good holes, cavities, splits, or loose bark should be retained. An assessment should be made of the impact the work will have on bat roosts, feeding habitats and commuting routes before determining the final coppice plan, which may require alteration to accommodate the requirements of the bats.

OTTERS

Otter holts are found in cavities in large tree root systems, so any work on trees should be preceded by a root inspection. If a holt or lying-up place is *identified or suspected* a more detailed inspection must be undertaken by someone with relevant experience to ascertain whether otters are present.

Coppicing should be carried out so that the coppice cut is taken some height above the stool, to allow for the protection of the cavity. Otter holts are protected by law and a licence may be required if disturbance is likely. All such works should be discussed and agreed with Natural England before proceeding.