Advisory Visit

Yorkshire Colne

Undertaken on behalf of Slaithwaite & District Angling Club

4th December 2006

The Colne Valley – Nr Huddersfield

Sponsored By Natural England

1.0 Introduction

This report is the output of a site visit undertaken by Simon Johnson of the Wild Trout Trust on the River Colne, Yorkshire on 4th December 2006.

Comments in this report are based on observations on the day of the site visit and discussions with Mr Michael Pogson of the Slaithwaite and District Angling Club.

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 Fishery Overview

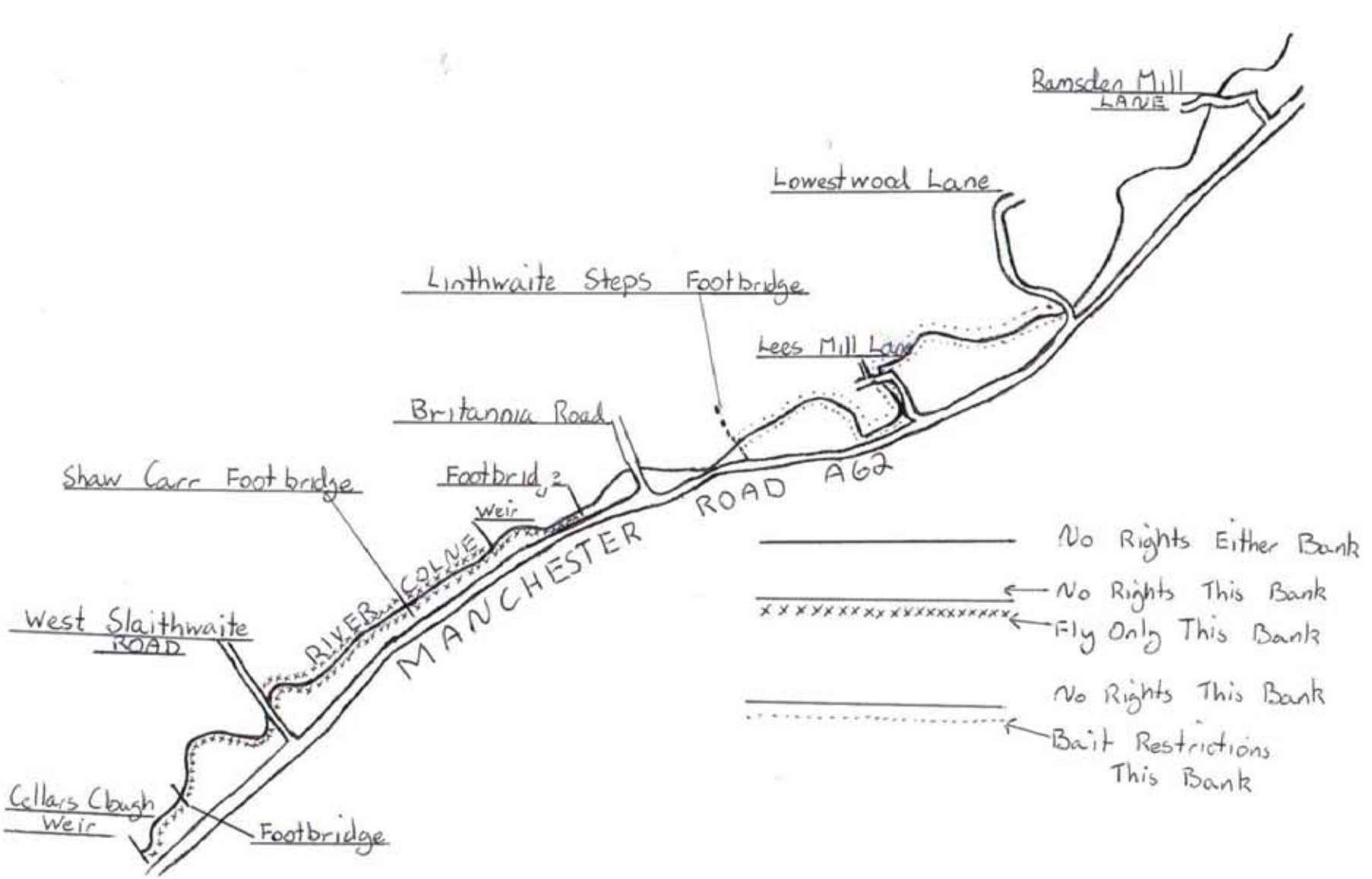
Slaithwaite & District Angling Club (SDAC) lease the fishing rights on approximately 5 miles of single and double bank fishing on the river Colne, a tributary of the Calder. There are currently 41 SDAC 'river members' paying subscriptions of thirty five pounds per year.

The Colne is managed by SDAC as a wild trout and grayling fishery on a catch and release basis. The river was stocked by the Environment Agency ten years ago in response to significant improvements in water quality, due to reduction in heavy industry (chemical and milling). This 'restoration stocking' has proved to be successful with good numbers of both trout and grayling present throughout the reaches the club controls. A 'typical' days fishing would normally result in the catch and release of a dozen trout averaging 20cm with a sprinkling of some larger fish to 2lbs. Recently one angler landed 30 wild trout from a 100 yard section. The grayling fishing can be prolific with catches of up to 30 fish, up to 20cm in length.

Flylife in the river is thought to be excellent with significant hatches of both Large Dark *(Ephemerella spp)* and Blue Winged Olives (*Baetis Spp*).

SDAC would like to continue to maintain and develop a sustainable wild fishery via a programme of enhancements which would also deliver gains to local biodiversity.

SDAC Colne Fishery Map



3.0 Habitat Assessment

The visit was conducted upstream of Titanic Mills to the boundary of the clubs fishery at Cellars Clough Weir. The river is characterised throughout it's length by the presence of a fully intact pool:riffle sequence . The geomorphology of the river is active with the presence of both point bars and mid-channel shoals. Gravels in the channel show no signs of siltation and compaction, making them highly suitable for both trout and grayling to spawn on. Bankside vegetation comprises mixture of grasses (grazed), scrub and woodland. There is a lack of fringing marginal vegetation which in some places has caused some localised erosion problems. The presence of non-native and invasive Himalayan Balsam and Japanese Knotweed was noted throughout the entire reach. In places Japanese Knotweed has made access to the river virtually impossible in the summer months.

Urban Geomorphology in action! (Pool: Riffle: Shoal: Point Bar)

There is an almost complete absence of macrophytes in the channel such as Water Crowfoot and Startwort. Little is known regarding if these species were historically present in the catchment. In-stream macrophytes habitat provides such things as important invertebrate resource (trout food) and cover for trout.

Extensive stand of Japanese Knotweed

Overgrazed banks

Along the reach there are three weirs / mill structures all of which prevent upstream migration of salmonids. The Weir structure at Slathwaite is the upstream boundary of the grayling fishery. Crest height of weirs is up to six metres making them impassable to both trout and grayling. There are several weirs present downstream of the reach all the way down to the confluence with the Calder. If a pollution event / and fish kill was to occur in the upstream reaches, upstream re-colonisation would be almost impossible.

There is an almost complete absence of Large Woody Debris (LWD), e.g. fallen trees and branches in the channel. The presence of LWD has been shown to be extremely important in several respects.

- An increase in mean flow depths and velocities.
- Development of high in-channel physical habitat diversity
- LWD can have significant benefits to the control of run-off at the catchment scale.

Removal of LWD reduces both habitat quality and availability for juvenile and adult brown trout. LWD is extremely important habitat for native crayfish.

Good In-stream habitat (no LWD)

There are several outfall pipes along the length of the reach that maybe affecting water quality. These are primarily storm overflows which contain a high percentage of sanitary and family planning products! There are some instances of local industrial units using the river as a convenient landfill site, which apart from aesthetic considerations also represents a significant hazard to wildlife.

Storm Overflow

Fly-tipping

At the top end of the reach the river enters a more rural setting with the backdrop of the Pennines. Land use is primarily rough pasture for grazing. Again the in-stream habitat is good although as with further downstream there is a lack of LWD in the channel. It is difficult to believe that just 1 mile downstream the river runs through an urban and industrial setting. One could quite easily believe this was an upland stream miles away from the nearest town. There is considerable potential to extend this area as a wildlife corridor throughout the whole reach.

The upstream 'rural reach'

4.0 Recommendations

The Colne is a fascinating river with a great deal of potential for further development as a wild trout and grayling fishery. With varying habitat types and widely differing land uses there really is a lot squeezed into the five short miles that comprise the SDAC fishery. However it is these differing land uses and past channel management that have impacted what in pre-industrial times must have been a sustainable wild trout fishery of some standing. The Colne is recovering from the impacts of the industrial pollution spanning many decades. The fishery now contains respectable numbers of wild trout and grayling, something that only 10 years ago few people would have thought possible.

The following are generic recommendations aimed at promoting an improved wild trout and grayling fishery.

It is a legal requirement that all the works to the river require written Environment Agency consent prior to SDAC undertaking any project in the channel and /or within 8 metres of the bank.

Local EA Fisheries and Development Control staff should be contacted at the earliest opportunity to discuss any actions arising from this report SDAC wishes to pursue.

4.1 Generic Recommendations

4.1.1 Erosion Control & Fencing

River banks are constantly on the move, it is a natural part of the river processes of erosion and deposition. In some areas where the banks are grazed there are some localised erosion problems.

The roots of bank vegetation bind the soil together, making it more resistant to the powerful erosion forces of the river. Livestock overgrazing can result in a loss of river bank vegetation which accelerates river bank erosion. This is a double edged sword for not only is valuable land lost, but the water can also become choked with sediment, which can have a deleterious effect on the biodiversity of the river.

There are many options for erosion control however SDAC should consider options that also deliver gains to the fishery and local biodiversity.

River banks can re-profiled, seeded and planted with appropriate vegetation and the bank toe (bit next to the water), can be faced off with willow withies to protect it from erosion. 'Green' willow withies are woven through 'green' willow stakes, which continue to grow, putting out root systems and binding the soil together. In areas where grazing occurs

fences should be repaired and installed. SDAC should contact landowners who may be able to get funding for this work through the DEFRA Entry Level and Higher Level Farm Payment Schemes. Fencing should aim to create buffer strips a minimum of 4m wide.

L) Use of willow withies, re-profiling and planting

The use of willow withies and willow stakes has proved to be less costly and more effective than 'hard' forms of river engineering. It is also sustainable and has far less environmental impact than the alternatives.

4.1.2 Barriers to Fish Migration

There are many impassable structures on the Colne. These represent a considerable bottleneck limiting the natural production of the fishery. Where possible structures should either be removed or modified to allow the free passage of salmonids from within and outside the catchment to the upper reaches for spawning.

Removing barriers to migration is both costly and technically demanding. The Environment Agency has in-house expertise on the installation of fish passes.

Below is an excerpt from the Environment Agency guidance on the fish pass options.

There are many types of fish pass in use in the UK today but most fish passes are of the following types.

Pool and weir passes

These passes consist of a series of pools, which divide the large fall of water at the structure into several smaller falls. These pools perform the dual function of dissipating the energy of the falling water and providing resting areas for ascending fish. Typically the gradients achievable with these passes are of the order 10-15 per cent.

Baffled or steep passes

Fish passes of this type generally use a rectangular channel with a series of precisely positioned and shaped plates or 'baffles'. These baffles redirect the water flowing down the fish pass channel, thus reducing the average water velocity dramatically. These fish passes can operate at gradients of 20 or even 25 per cent and are typically very efficient in terms of the amount of water required for efficient fish passage.

Pre-barrages

In many cases, fish passage at small obstructions, in terms of the vertical height which has to be traversed, can be helped by provision of a small weir or weirs downstream of the main obstruction. These have the effect of splitting the distance to be traversed into smaller leaps or traverses. Such weirs can often be made of local materials and can look much more natural than some of the 'technical' civil engineering structures.

Artificial channels and informal solutions

Some of the most efficient fish passes have been found to be man-made substitutes for river channels. Such artificial river channels normally have a low gradient and extend from below the obstruction to a considerable distance upstream. Typical gradients range from 1 to 3 per cent making them particularly suitable for the passage of species that are difficult to accommodate with other types of fish pass (such as juvenile and smaller coarse fish). The gradient of the channel may be increased to nearer 4 per cent if energy-dissipating characteristics are built into the channel. These might include rock sills or deflectors, or sometimes a random arrangement of large boulders.

In summary, if an in-river structure is being substantially modified or rebuilt, or a new structure is built on a river frequented by migratory fish, then the local area office of the Environment Agency should be contacted. There are many modern solutions to fish passage problems but expert advice should be sought as simple mistakes at the design stage can incur substantial costs to rectify at a later stage.

4.1.3 Large Woody Debris

Woody debris 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. They may offer lies for otters or perches for kingfishers. Woody debris in the river may also create pools and riffles in sections of the river that would otherwise have a dearth of aquatic habitats. They also retain leaf litter and act as an energy reservoir for the river section.

Fallen timber can be used to create flow deflectors. Deflectors need to be; 1) keyed into the bank to avoid localised erosion and; 2) staked and wired to the bed of the river to avoid being washed-away. During winter flows the deflectors will scour out pools and naturally sort and clean

gravels suitable for trout spawning. As a very rough guide deflectors should be set at approximately 30 degrees to the bank with a length of between 40-50% of channel width. Scour pools have been shown to be very important habitat for all life stages of brown trout. Deflectors could be particularly useful if placed silted riffle areas.

The Environment Agency should be consulted prior to any introductions of LWD

4.1.4 Invasive Species

Both Japanese Knotweed and Himalayan Balsam are widespread throughout the catchment. Control of these plants is not easy and a great deal of effort and expense will be required to effectively control both species of plants.

Himalayan balsam *(Impatiens glandulifera*) is a relative of the busy lizzie and is known by a wide variety of common names, including Indian balsam, jumping jack and policeman's helmet. 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.

Introduced to the UK in 1839, it is now naturalised, especially on riverbanks and increasingly in waste places and has become a problematical weed. Himalayan balsam tolerates low light levels and, in turn, tends to shade out other vegetation, impoverishing habitats

Physical Control

The main method of control, and usually the most appropriate, is pulling or cutting plants before they flower and set seed. Volunteers conservation groups and authorities regularly organise ‘balsam bashing’ work parties to clear the weed from marshland and riverbanks.

Chemical Control

Before using weedkillers alongside waterways it is necessary to contact the Environment Agency (see telephone directory for your local office). It can advise on suitably qualified contractors, as can the National Association of Agricultural and Amenity Contractors (Tel: 01733 362920). Himalayan balsam can be controlled with a weedkiller based on glyphosate, such as Roundup or Tumbleweed. Glyphosate is a non-selective, systemic weedkiller that is applied to the foliage. It is inactivated on contact with the soil, so there is no risk of damage to the roots of nearby ornamentals, but care must be taken that the spray doesn't drift onto their foliage. Glyphosate is most effective when weed

growth is vigorous. This usually occurs at flowering stage but before die-back begins; with most weeds, this is not earlier than mid-summer. It may take a couple of seasons to obtain good control due to the germination of more weed seedlings.

Japanese Knotweed

Japanese Knotweed (Fallopia japonica) was introduced to the UK as an ornamental plant during the 1800s. It is commonly found today along railway lines, riverbanks, roads and footpaths, in graveyards, on derelict sites or anywhere that it has been dumped, dropped or deposited.

Japanese Knotweed forms dense clumps up to three metres in height. It has large, oval green leaves and a stem that is hollow and similar to bamboo. Usually in early spring (although it can be later in the year) the plant produces fleshy red tinged shoots. These can reach a height of 1.5 metres by May and three metres by June.

This plant can grow as much as 2 cm per day and will grow in any type of soil, no matter how poor. Towards the end of August clusters of cream flowers develop and then produce seeds that are sterile. The plant dies back between September and November.

Beneath any stand of Japanese Knotweed will exist an extensive underground root (rhizome) network that can extend several metres around and beneath depending on ground conditions. The spread of the plant is vegetative, i.e. all new plants are created by fragments of existing plants. A fragment of root as small as 0.8 grams can grow to form a new plant.

Japanese Knotweed grows pretty much anywhere, from field edges to sand dunes, through asphalt and out of lamp-posts. The speed with which it has spread to all parts of the UK has been spectacular when you consider that it does not leave seeds behind but grows from pieces of the plant or root system that are cut and transported by people or by water.

Because Japanese Knotweed does not originate in the UK, its does not compete fairly with our native species and is able to spread unchecked. Once established, Japanese Knotweed shades out native plants by producing a dense canopy of leaves early in the growing season. Although Japanese Knotweed is not toxic to humans, animals or other plants, it offers a poor habitat for native insects, birds and mammals.

Under the Wildlife and Countryside Act 1981 / Wildlife (Northern Ireland) Order 1985 it is an offence ‘to plant or otherwise encourage’ the growth of Japanese Knotweed. This could include cutting the plant or roots and disturbing surrounding soil if not correctly managed.

Although there are a number of options available for the treatment of Japanese Knotweed, the majority of these require a number of years in order to be effective. The two methods outlined below are the most effective in the time scales generally required by the construction industry.

1. Spraying with Herbicide

Spraying the plant with an appropriate herbicide is the most effective option available, however it can take several years and rarely achieves eradication without mechanical disturbance. Herbicide treatment can give the appearance of control but the rhizome network (roots below ground) may still be viable and disturbing the ground will cause the plant to regrow. Soil movement should not be attempted until no rhizome remains in a viable condition.

Spraying can only be carried out during the growing season when there is green, leafy material present. Herbicide treatments take effect within a few weeks but eradication can take a minimum of two sprays in one growing season to achieve. Often, when a contractor takes control of a site, the working programme is tight and does not allow sufficient time for this method of eradication to be used. Even so, a spraying programme may be an option for weakening the plant before removal or treating regrowth and remaining plants in the spring.

The person who will be undertaking the spraying must hold a Certificate of Competence for herbicide use or should work under the direct supervision of a certificate holder. A Certificate of Technical Competence can be obtained by attending a short course at an agricultural college or similar institution.

A COSHH assessment must be carried out for all activities involving herbicides. Further information on COSHH can be obtained from the HSE and HSENI.

The most effective active ingredient for use on Japanese Knotweed is called Glyphosate. This is the active ingredient found in 'Round Up' and other similar herbicides. It is effective on Japanese Knotweed even though it does not kill the plant immediately. Instead, the herbicide soaks through the leaves and is taken into the plant root system. The greater the number of green leaves present, the larger the quantity of herbicide that can be absorbed into the plant. It can take up to ten days for the plant to begin to die off after treatment and you should always watch for regrowth.

2. Digging and Spraying

A quicker method of removing Japanese Knotweed involves the clearing of above ground leaf/stem material and the removal of ground material polluted with roots. Care should be taken to ensure that all Japanese Knotweed roots are removed - this is one situation where it pays to remove too much material.

Even with great care, a certain amount of regrowth in the spring would be expected and any should be treated with an appropriate herbicide as discussed above.

For further information on the above and the disposal of Japanese Knotweed contact your local Environment Agency Office.

Japanese Knotweed

Mink

Mink are known to be present in the Colne catchment. There is strong evidence, from research on the upper Thames catchment by Oxford University, that mink can have a serious deleterious impact on water voles, fish and on some riverine birds. This has persuaded many conservation bodies that mink control must be undertaken to safeguard remaining water vole colonies. The catastrophic decline of water voles throughout many catchments had a time-course of about 25 years, lending urgency to conservation of the species elsewhere. Mink are not the only putative cause of decline, but where habitat and water quality remain good they are clearly the principal suspect in the decline of water vole populations.

MINK CONTROL GUIDELINES

Any mink control campaign must be properly researched, carried out and monitored by people with relevant experience and competence. It must have a stated objective and be for a defined period and should be reviewed, altered or terminated at specified intervals in the light of monitoring results. Where the need for mink control is felt to be ongoing, it must be properly justified through this process.

An average mink territory size along a linear waterway may be 5kms (for a male and up to 3km for a female), so trapping in only one locality may simply create a territorial vacuum which will be quickly filled. Only the wider view (stream or river catchment) is likely to have a long-term benefit for the water vole. The co-operation and involvement of neighbouring landowners and managers in the area will be a key factor in determining the effectiveness of the mink control programme.

Trapping should be considered as a part of an overall strategy to help water voles locally. Positive habitat management should also be undertaken or encouraged to increase the amount and variety of suitable habitat available. Even simple measures can help, such as fencing a section of riverbank to prevent excessive poaching by cattle.

Water voles undergo high winter mortality (around 70%) and the mink's early breeding ensures that, to feed her kits, the female mink will be taking the winter-surviving water voles before they have had a chance to breed. Consequently, the best time to trap the mink is prior to their breeding season in the early spring (Feb – Apr). Trapping in August-November is also recommended to intercept dispersing juveniles. Mink will take water voles at other times of the year but trapping during these two periods is likely to be the most effective use of time and resources.

Mink will not travel very far from a linear watercourse, so it is worth concentrating trapping effort along these. Place the traps as close to the watercourse or waterbody as possible. Try to utilise any obvious man made features such as land stages, angling platforms, bridges, sluices, etc.... Other good sites are at the junctions of streams and ditches and near fallen trees.

TRAPPING & DISPATCH GUIDANCE NOTES

The following Guidelines should be followed:

- Any trapping of mink should be done humanely
- Trapping should be undertaken in compliance with Health & Safety regulations.
- Only live capture cage traps must be used so that non-target species can be released unharmed.
- Otter exclusion guards must be fitted to prevent the accidental trapping of otters.
- Traps must be set away from known otter holt sites.
- Traps must be set away from open areas and public paths.
- Traps must be placed above any possible rise in water level and secured to prevent any trapped animal rolling them over into the water.
- Traps should be covered in hay, reed or sedge, which a trapped animal can pull into the cage as bedding material to reduce the stress of capture. This can then be covered with sticks or branches or other material to disguise the trap, to make it more likely that a mink will investigate it as a tunnel and to prevent the hay, etc from blowing away or being eaten by livestock. Traps may be baited with fish (sardines / herrings), hard-boiled eggs (left in shell), dry cat food, or day old chicks (dead) providing the trapped animal with food.
- Traps must be checked twice per day around dawn and dusk.
- To dispatch mink humanely, the only presently accepted method is shooting. They must not be drowned and there are no approved methods of killing them by gassing.
- Once positively identified, trapped mink must be shot whilst in the trap. They must be shot in the head with a powerful .22 air rifle /

pistol. The use of shotguns and rimfire rifles is not recommended due to the risk of injury through ricochet.

- Once caught, it is illegal to release mink back into the wild.

It is recommended that contact be made with local Natural England and Wildlife Trust Conservation Officers prior to undertaking any minlk control programme.

4.1.5 Pollution and Fly-tipping

It is recommended that contact be established with local Environment Agency Protection Officers regarding the quality of effluent from the overflow pipes and the fly-tipping that is occurring behind some of the industrial units backing onto the river.

Contact should also be established with the River Colne Project who organize various ‘clean-up’ days. This group may be a useful conservation partner in helping to tackle some of the invasive species outlined in this report.

Local companies could also be encouraged to sponsor clean-up and conservation activities on the river which would provide good pr opportunities.

Recent River Clean Up Event on the Colne

5.0 Engaging with local community groups.

As with many other rivers in urban areas the Colne suffers from a degree of socially and industrially induced problems, such as pollution and fly-tipping. Discarded materials such as pallets, wire and plastics represent considerable dangers to bird life as well as a health & safety risk to people enjoying the river. Recent river clean up activities undertaken by The River Colne Project are a fantastic opportunity for SDAC to engage with the local community. If SDAC plans to embark on a programme of river enhancements and restoration, community and local industry 'buy-in' will be vital to ensure success. The publicly accessible nature of the fishery should help with any bids for private / public funds. SDAC should establish links with local wildlife groups and Yorkshire Wildlife Trust and Natural England. Whilst they may not be fishing organisations they wish to see a healthy environment, one that's good for people, wildlife and fishing!

6.0 Establishing a partnership with the Environment Agency

It is strongly recommended that SDAC contact the EA to discuss this report. The EA may be willing to initiate a partnership with SDAC to restore and enhance the Colne. Partnership with the EA could come in the form of 'in-kind' technical assistance with fisheries surveys and scheme / fish pass design through to direct financial assistance.

6.0 – What next? -Making it all happen

The Wild Trout Trust is often able to provide further technical assistance and grants for recipients of Advisory Visits wishing to initiate projects. The Trust may also be able to advise on funding applications. In 2007 WTT hopes to embark on a major urban wild trout project which could benefit the Colne. For further information visit the Practical Advice section of our website www.wildtrout.org.

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