

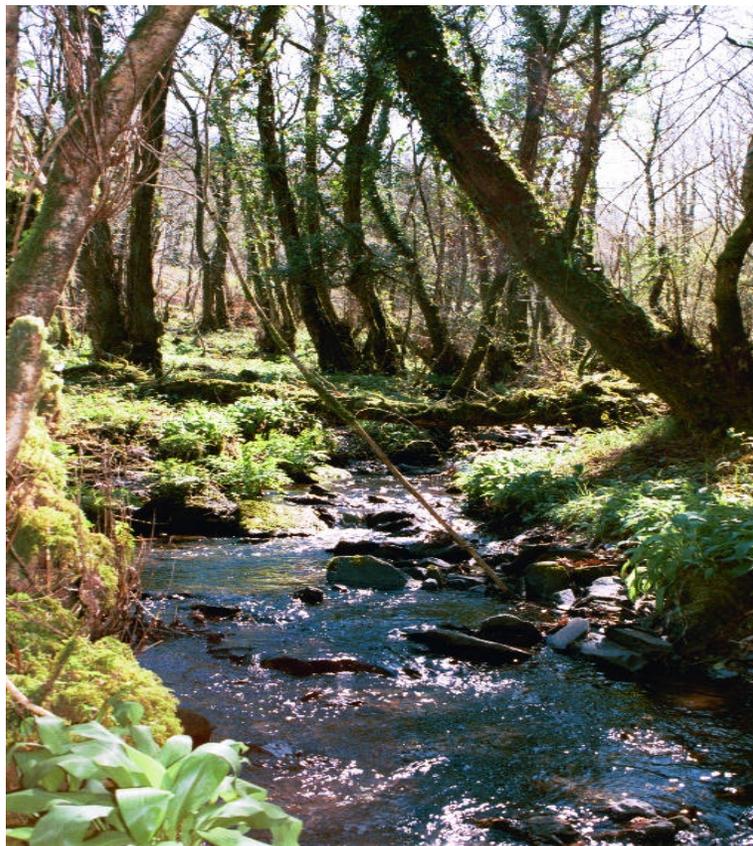


Abbot Fisheries & Aquatic Solutions

Draft Report – for comment

## Burcombe Stream (SX 474 825)

River Lyd Catchment



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## 1.0 Introduction

This preliminary report has been produced at the request of the Wild Trout Trust (WTT).

The brief provided, requested an assessment of the importance of the **Burcombe Stream** as a potential nursery stream for supporting populations of native juvenile Brown Trout *Salmo trutta* associated with the Upper River Lyd catchment.

There has been concern expressed over the perceived lack of wild brown trout in the River Lyd for some time - (Environment Agency – River Tamar LEAP 2000). Elsewhere in the Tamar catchment, the decline of wild trout has largely been attributed to intensive farming practices and increased levels of suspended solids entering the water course that, when settled-out in the redd, smothers salmonid eggs and hatching alevins during early development.

Farming on the River Lyd, a major tributary of the River Tamar, is more extensive than intensive and so the streams associated with the Lyd, whilst still suffering from localised impacts, remain amongst the most productive for the whole Tamar catchment.

*Protecting, restoring and where possible enhancing headwater streams with high juvenile trout productivity is now a high priority.*

## 2.0 The Burcombe Stream

The Burcombe Stream rises in the area of Brentor (SX 473 817) and flows due north to join the River Lyd at Longham Ford (SX 474 833).

The stream is typical of the upper Lyd catchment where surrounding land use is predominantly comprised of permanent grassland swards and mixed forestry operations with minimal impacts from farmed run-off and associated nutrient loadings.

Whilst there has been no historical monitoring of the Burcombe Stream by the EA (or its predecessors), neighbouring streams, such as the Quither Brook, have been monitored and have seen sustained recordings of young trout densities well in excess of those found elsewhere in the whole of the Tamar catchment (0+ >100+ / 100m<sup>2</sup>).

## 3.0 Habitat Assessment

A walkover survey was carried out on 16<sup>th</sup> April 2002. The survey included an assessment of both the stream and the area of wetted woodland that is currently encroaching upon permanent neglected pasture. Visual observations of flowering plant species, trees, streambed complexity, shading & bank-side profiles were recorded.

The following notes characterise a number of features:

### Riparian Zone

- The area is typical of young wetland woods, which have been allowed to develop through reduced grazing. Alder is the dominant tree species, there is however a broad cross-section of other species including Willow, Ash, Sycamore, Silver birch and at the northern end Beech. A rich variety of shrubs have colonised including holly, Hazel, Blackthorn, Hawthorn, Spindle Berry and Elder. To the west of the stream Norway Spruce forms part of a Forestry Commission plantation, these are approximately 60 yrs old. The stream bank supports a number of species of plants including Bog Asphodel, Marsh Marigold, Solmans Seal, Colts Foot, Lesser Celandine, Dogs Mercury and Ramsons amongst others. There are also a number of larger areas of Bluebells mixed with Wood Sorrel and Wood Anemones.

- Because of the non-intervention of the landowner there are many areas of dead wood supporting mosses and ferns. There is evidence of deer tracks and **owl pellets were also found.**
- The owner has previously kept two horses on this ground during the summer months and now wishes to stock the fields to prevent further encroachment. This will ultimately allow free and random access to the stream and wet woodland environment.
- There is Public Access to and through the site.



### Stream Survey

- Flow rates were not measured but are estimated to range between 0.2 – 0.5 m<sup>3</sup> / sec with naturally occurring sequences of cascades, riffles, pools and glides as normally associated with a small headwater stream.
- A 100m section of the stream substrate (Habitat Complexity) was sampled and comprised a mixture of bedrock (10%), Large rocks >30cm (10.5%), Boulders 20-30cm (11.5%), Cobbles 5-20cm (49%), Gravel 1-5cm (12%), Sand/Grit <1cm (5.5%), Silt <1mm (1.5%).
- In the same sampled section, an area of conifers on the left bank is currently over-shading approximately 70m of stream habitat.
- Water quality may be impacted by a point source metalliferous discharge in the upper reaches. The effects of the discharge are unknown.
- Invertebrate samples were not recorded (BMWP Scores) as kick sampling may have had a deleterious effect on any fry that may still have been emerging from redds (Survey carried out in April). However, the undersides of a number of rocks were lifted to reveal a diversity of high scoring species (Stoneflies, Mayflies, etc.).

- There are two trash dams (woody debris) that may be impassable during all but high flows.
- The most productive section of the stream (Approximately 2,000m) is dissected by the disused Lyd Valley railway embankment (NGR: SX 476 829). At this point the stream flows through an underground tunnel measuring approximately 2m wide x 2m high for a distance of 80 metres.
- Approximately 100m D/S of the tunnel a small dam has been constructed (Approx 1m high). It is understood that the dam was previously used by the owner for abstracting water but is no longer in use. The dam continues to impede and possibly prevent migration to the upper reaches of the stream.
- The stream continues for a further 200 metres where, before it joins the River Lyd (NGR – SX 474 833), it flows through a short culvert (0.8m Ø x 4m long).
- The outfall of the culvert was measured at 0.5m above the River Lyd (Medium flow level). This is likely to impede upstream migration during medium and low flows.



## Conclusion

*Despite criticisms regarding potentially poor fish migration, over-shading, tunnelling and possible water quality impacts the in-stream habitat, in my opinion, would appear to be able to support large densities of juvenile trout as well as other fish species.*

*In addition the surrounding bankside flora and fauna is also evidently in need of enhancement and protection and, given a structured but fairly simple management plan, should continue to provide a diversity of habitats for a large number of important species.*

*Given that the area already has an agreed public access (Designated footpath), there may be opportunities to promote awareness of the work of the Wild Trout Trust through the posting of a sign that identifies both 'Best Practice' and the preservation of key habitats such as those found in headwater streams.*

*There is, in my opinion, little doubt that a short Management Plan linked to a Capital Works Programme is justified.*

#### 4.0 Management Recommendations.

This short report identifies a number of key features that need to be addressed in order to safeguard and enhance the continued production of juvenile wild trout in areas of the Upper River Lyd catchment. The report also identifies the need to manage an almost pristine riparian habitat that has evolved into a wet woodland and prevent it from undergoing the inevitable damage associated with the intrusion of cattle.

There is also the requirement to allow provision for the landowner to have continued use of available pasture with reduced encroachment.

##### 1. Improve fish migration.

Remove the man-made dam used for water abstraction – *This feature is of a fairly simple construction and could be easily removed.*

Carefully remove trash dams (Blockers) – *Dismantle complete obstructions to migration only. There is a small amount of woody debris in the stream that only partially obstructs flows, this should remain in situ as it is currently contributing to in-stream habitat complexity and does not impede migration.*

Culvert Outfall - *Reduce the height of the outfall. A few large boulders, strategically placed adjacent to the culvert wall, will, encourage and improve migration of adult spawning trout from the River Lyd U/S into the Burcombe Stream during all flow conditions.*

##### 2. Initiate a Tree Management Programme.

Over-shading (Left Bank) – *Initiate discussions with the Forestry Commission regarding the current and future management of the conifer plantation in the area immediately U/S of the embankment. If possible negotiate a mirrored buffer zone for the left bank.*

Over-shading (General) – *Carry out a light thinning (10%) of the wet-woodland area on both sides of the stream, taking care to identify any trees that require a felling license, trees of significant conservation value and any dead trees that are not considered a risk to the public (Health & Safety) that may be left standing to be used by bats and/ or other species.*

##### 3. Prevent livestock having uncontrolled access to the stream and riverbank margin.

Fencing (Approximately 700m)– *A cattle fence should be erected at the earliest opportunity (Sheep are unlikely to be stocked at this stage). The owner has shown a willingness to allow an average 10-metre buffer zone along the full length of the stream. Fencing should consist of three strands of wire with one strand of barbed wire located as the second strand – this will allow for a reduced risk of injury to deer moving between the two blocks of forestry that border the stream.*

*The cattle fence should incorporate two areas for controlled drinking access. The Public Footpath crosses the stream in the lower field; an additional gate will be required if access is to be maintained.*

*Important Note – Prior to commencing works near the stream, due notification and/or consents should be sought from the Environment Agency.*

#### **4. Funding**

It seems reasonable to suggest that there are a number of parties who might be interested in supporting the preservation of this important habitat.

Financial contributions or 'in-kind' contributions could be sought from the following:

*The Owner*

*The Environment Agency*

*The Tamar & Tributaries Fisheries Association.*

*The Wild Trout Trust have very kindly sponsored this report.*

Robert Wellard, April 2002