Habitat Advisory visit to Watendlath Tarn, Cumbria

Undertaken on behalf of The National Trust by Vaughan Lewis, Windrush AEC Ltd

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1.0 Introduction

This report forms the output of a site visit to Watendlath Tarn, Cumbria, on 6th December 2006. Information in the report is based on observations on the day of the visit and additional comments provided by John Malley and Katherine Hearn, National Trust. Throughout the report, normal convention is followed, with right bank (RB) and left bank (LB) of the river identified when looking downstream.

2.0 Fishery Description

Watendlath Tarn is a small (c2ha) stillwater set on Watendlath Fell. It is fed by becks arising from Blea Tarn and Bouldergate Gill on its southern and western shores respectively, and by at least one other small tributary stream on its eastern shore. The tarn discharges into Watendlath Beck at its northern end and hence eventually into Derwent Water.

View across Watendlath Tarn to its southern end.

The tarn is surrounded by a band of semi-improved pasture along its eastern and western shores. This land has been subject to the spreading of large amounts of farm derived organic and inorganic fertiliser in the past, with likely impacts on the water quality and ecology of the tarn. Unfortunately, ecological and water quality data for the water are sparse, with only some basic macroinvertebrate data apparently available. As a consequence, it is not possible to quantify these impacts.

A significant area of wet grassland dominated by emergent aquatic plants, particularly rush *Juncus* Spp. exists at the southern end of the tarn. The main tributary stream, the Blea Tarn Beck cuts through this area before entering the tarn.

3.0 Fish stocks

The tarn is located at the head of vehicular track rising from the Keswick – Borrowdale road. As such, it attracts large numbers of visitors travelling both on foot and by car. The fishing on the tarn is let by licence to Borrowdale Trout Farm that operates at the Trust's property at Seathwaite. Fish from the farm are stocked into the tarn, with fly-fishing for trout let on a day ticket basis. Present stocking is in the order of 3,500 mixed rainbow trout *Onchorhynchus mykiss* and brown trout *Salmo trutta*, with rainbow trout numerically dominant. Anglers report fish >5kg have been caught from the tarn, strongly indicating that large individual fish are periodically stocked.

The Agency has designated the tarn as a native trout water under its Trout and Grayling Strategy. These are waters that have a significant natural production of trout, whether migratory or non-migratory, or from which there is ready access to other waters with such production. Controlled stocking of trout may be consented to these waters.

As part of the conditions attached to the stocking consent issued by the Environment Agency (EA) under the Salmon and Freshwater Fisheries Act, 1975, a net was required to be erected across the mouth of the outflowing Watendlath Beck, effectively preventing access to stocked fish into this stream. This measure is a response by the EA to concerns regarding potential impacts of behavioural and genetic interactions of stocked fish on wild brown trout populations. The impassable nature of Lodore Falls to upstream migrating fish means that the population of trout in the reach between the falls and the tarn may have added importance due to its spatial, and thus potentially, genetic isolation.

Discussion with Matt Brazier (EA fisheries team, Penrith) confirmed that the Agency has fishery and macroinvertebrate survey data for the Blea Tarn beck, the main tributary stream entering the tarn at its southern end. There is a strong population of wild brown trout in the beck, confirming visual observations that indicated good conditions for spawning. The fishery survey also revealed good stocks of Minnow *Phoxinus phoxinus*.

Good gravel for spawning/juvenile brown trout in the Blea Tarn beck

Macroinvertebrate monitoring of the beck showed a diverse community of pollution sensitive species, indicative of good water quality.

4.0 Future management recommendations

- The present management of the immediate catchment of the tarn should be addressed as a matter of some urgency. The continued spreading of organic and inorganic fertilisers presents an ongoing risk to the ecology of the tarn via the mechanism of increased nutrient run-off. The input of, in particular, phosphate, has the potential to promote damaging algal blooms that threaten the long-term viability of more pollution sensitive species present in the tarn.

- The current regime of fish stocking into the tarn is not in line with the National Trust's stocking policy. It is recommended that a phased reduction in stocking should take place, with the eventual aim of returning the tarn to an un-stocked, wild trout fishery. The abundance of juvenile trout in the Blea Tarn beck and the viable wild trout stocks in Blea Tarn itself suggest that this is a realistic target.

A number of steps are recommended for a return to a wild trout fishery viz:

Year 1: Cease stocking with rainbow trout, with only triploid brown trout stocked
Year 2: Reduce numbers of triploid brown trout stocked to <50% of existing overall stocking

Year 3: Cease stocking totally for a trial period of 5 years

This approach will allow both the supplier of the fish and the fishery itself to gradually adjust to new regimes. The fishery pricing structure will need to change, with the Trust acknowledging a significantly reduced income by adjusting its licence charge, probably to a peppercorn rent. It should be possible to charge rod anglers a day ticket of between £5 -£10 to fish at Watendlath Tarn and perhaps the inflowing Blea Tarn beck, when a wild fishery is re-established. The present fishing season would need to be curtailed to recognise the statutory season for brown trout in Cumbria, further reducing revenue in comparison to the status quo. A mandatory catch and release policy should be applied in order to protect stocks of brown trout.

Readjustment of the fish farm economics will not be easy as a major revenue stream will effectively be lost. However, the advent of the Trout and Grayling strategy does present a significant opportunity for realigning the farm's output, through its preference for stocking with triploid brown trout or brown trout derived from broodstock sourced from local catchments. In addition, the presence in many Cumbrian streams and tarns, of white-clawed crayfish *Austropotomobius pallipes,* has resulted in the EA banning the stocking of trout from areas of the country where signal crayfish *Pacifasticus leniusculus* are present in an attempt to prevent the spread of crayfish plague *Aphanomyces astaci.* These two drivers provide a significant incentive to Borrowdale Trout Farm to consider rearing local origin brown trout and/or triploid brown trout that could then be sold at a premium, both to local fisheries and further afield. Changes to stocking policy expected at a number of other Cumbrian fisheries including Yewdale Tarn, High Arnside Tarn, Kentmere and Esthwaite Water reinforce these opportunities.

- Once stocking with triploids and/or a reduction in overall numbers has been instigated, it should be possible for the netting barrier on the Watendlath Beck to be removed, thus allowing access for fish from the tarn to the short section of downstream spawning/juvenile habitat in the beck. This should promote the development of wild stocks in the tarn over time.

- The tarn was considered by the EA/Centre for Ecology and Hydrology (CEH) as a possible site for introduction of the threatened whitefish species, the vendace *Coregonus albula*. It was considered the prime 'ark' site for the Derwent Water stock of the species. However, the present high density stocking with rainbow trout caused the EA/CEH to reject Watendlath as a possible site for such a programme. Removal of the stocking pressure is likely to allow them to reconsider this decision.

- The EA fisheries team at Penrith should be contacted and all available fishery and macroinvertebrate survey data obtained from them. Electrofishing surveys of the Blea Tarn Beck and the Watendlath Beck should be undertaken at least every 5 years in order to monitor recruitment.

- Day ticket trout fishing should remain available at the tarn in line with the National Trust fisheries policy. Angler catch returns should be collected routinely to monitor relative abundance of fish in the tarn. An incentive could be offered for the completion of catch returns, for instance a small cash prize or a free season ticket.