



**ADVISORY VISIT TO THE RIVER ALLEN,  
DORSET  
UNDERTAKEN BY VAUGHAN LEWIS,  
WINDRUSH AEC LTD, ON BEHALF OF GAUNTS  
FISHERY  
MAY 2006**

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**1.0 Introduction**

This report is based on a visit to the River Allen, Dorset on the 4<sup>th</sup> May 2006 on behalf of Gaunts fishery. Information in the report is based on observations made

during the site visit. Further details were provided by members of the syndicate. The Gaunts fishery covers a length of some 4 km of the middle river, with the bottom of the fishery near Stanbridge. The syndicate had a membership of 20.

Throughout the report, normal convention is followed with respect to bank identification i.e. banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream.

## **2.0 Fishery Description**

The River Allen is a typical small chalkstream, rising from ephemeral and permanent springs on the south-east edge of Cranbourne Chase. From here it flows in a roughly southerly direction before joining the River Stour at Wimbourne Minster (SZ 015 992).

The Allen is a relatively heavily abstracted river, with low flows, particularly during summer, an acknowledged problem. The Environment Agency is seeking to address this issue through a suite of studies and associated discussions with the relevant water companies. Changes in land use practices and long-term climatic variation are also likely to play a significant part in reduced summer flows.

Throughout the fishery, sections of the river had an abundant growth of the submerged and emergent forms of common club-rush *Schoenoplectus lacustris* and unbranched bur-reed *Sparganium emersum*. In places, this severely restricted angling access, particularly from June onwards.



### **Heavy growth of emergent and submerged weed**

There were also some strong stands of water crowfoot *Ranunculus* spp and starwort *Callitriche* Spp. present over some sections of the fishery.

The instream habitat was generally good, with short sections of gravel dominated riffle suitable for spawning and juvenile lifestages of brown trout *Salmo trutta* and grayling *Thymallus thymallus* present throughout the fishery. There was an

abundance of shallow and deep glide habitat suitable for older lifestages of trout and grayling.

Land use along the length of the fishery was dominated by semi-improved/improved grassland, with shorter sections of wet grassland, domestic garden and mixed woodland fringe. The grazed land was generally well fenced with no overgrazed sections of bank apparent.

Considerable sediment accumulation was present on the inside of many bends, with gradual colonisation and consolidation by emergent vegetation evident. There was a considerable amount of diatomaceous algae present in the marginal zone, with some of it lifting as a result of photosynthesis and subsequently breaking up in the water column. Water clarity was good, with a strong flow in the river despite the generally low rainfall experienced during the winter.

Tree cover on the lower fishery was relatively sparse. Care had been taken to maintain overhanging cover where possible, although some valuable Large Woody Debris (LWD) had been removed from the channel. The remaining LWD was encouraging scouring of the bed and providing valuable cover.



**Large Woody Debris in the channel. Note scour of the bed**

Above Barnsley Farm, there was an increase in the amount of shallow riffle with potential for trout spawning. However, much of the gravel was relatively unsorted (un-scoured), with the result that the spawning potential and subsequent egg hatch rate might not be optimised. The syndicate had installed a number of wooden groynes constructed from faggot bundles retained by cleft chestnut stakes in order to address this issue. The majority of these had worked well, with scoured gravel and stands of water crowfoot present downstream.



### **Faggot bundle groynes. Note scoured gravel downstream**

The RB of the reach above Hinton Farm was heavily wooded, with consequent overshadowing of the channel. As a result of this and the steep profile of the bank, there was little or no marginal vegetation present in this reach. Substrate was dominated by fine gravel and sand, with little variation in depth except where groynes had been installed. The lack of gravel was probably the result of past dredging of this reach, with raised piles of excavated gravel on the LB evidence of this activity.

Further upstream, the syndicate had undertaken significant LB tree thinning, with associated benefit to instream and marginal weed growth.

Macroinvertebrate populations in the river were good, with a variety of upwing flies and sedges regularly reported on the fishery. Mayfly *Ephemera danica*, grannom *Brachycentrus subnubilis* and the terrestrial hawthorn fly *Bibio marci* were all noted on the day of the advisory visit.

Pike culling using electrofishing was undertaken regularly in the fishery in an effort to reduce predation of trout.

### **3.0 Fish stocks**

There was moderate to good recruitment of both brown trout and grayling within the fishery, with juvenile brown trout visible in numbers in many areas of the fishery. Some 300 12"/13" brown trout were introduced annually to the river. Grayling over 1kg in weight have been taken from the fishery regularly.

### **4.0 Recommendations**

- The present management of the more dense stands of submerged bur-weed consists of loosening the weed by the use of a high-pressure water jet during gravel cleaning (see below) followed by manual removal. Some cutting of water crowfoot is also undertaken periodically where its growth is excessive. There is some anecdotal evidence that if bur-reed is controlled during the early season growth phase, water

crowfoot is able to gain a competitive advantage and flourish. In the absence of any early season control, it is normally the bur-reed that becomes dominant to the detriment of the crowfoot.

- In the event that emergent vegetation does increase and create significant difficulties for management of the fishery, then it can be controlled using either manual cutting or herbicide. The only appropriate herbicide cleared for use near to and in water is glyphosate (sold as 'Roundup', Roundup Pro Biactiv etc). It is a selective, translocated herbicide that is used to treat the actively growing plant once its leaves have emerged from the water. Glyphosate offers a cheap and environmentally sensitive option (it is inactivated on contact with water and sediment) for the treatment of emergent vegetation.

Glyphosate can be used to selectively remove small stands of emergent vegetation, creating runs and sections of clear water where required. It can be also be used carefully in order to shift sediment from strategic locations by training the river's flow to scour these areas.

Detailed advice on the use of herbicides can be obtained from the Centre for Aquatic Plant Management [capm.org.uk](http://capm.org.uk). The written consent of the Environment Agency is required for the use of all approved herbicides

- Recruitment of brown trout and grayling in the fishery was moderate. In order to enhance this, the syndicate had adopted an annual regime of gravel cleaning each September using manual raking and high-pressure water jets. This policy should be continued. Care must be taken to clean riffles rotationally, with only short sections being treated annually. It is important that the EA are contacted prior to any cleaning of gravel, due to the possible discoloration of water in the river resulting from the operation. The same concerns dictate that downstream neighbours should also be forewarned of the operation.
- The cleaning of spawning gravel and scouring of patches of sediment can also be achieved by the use of a mud engine. This is a simple device (pictured below) that harnesses the rivers flow to create localised high water velocity. Operation is simple, with the engine being moved regularly in a downstream direction in order to clean short river lengths.



29 Silt control boom. The far tethering rope is visible below the bank; the near rope is

### **Mud engine**

- In order to monitor the success of any gravel washing, it is further recommended that an annual count of spawning redds is undertaken by the club. Key spawning areas should be walked during November- January and observed redds logged and counted.
- The river within the wooded reach upstream of Hinton Farm was relatively featureless with poor substrate and little marginal growth. It is recommended that a regime of rotational coppicing should be established along the RB in order to reduce shading, encouraging the development of marginal vegetation. The resulting larger timber should be utilised in order to construct a series of substantial upstream facing groynes, introducing local flow variation, and helping to scour the substrate. In addition, the construction of a series of upstream facing 'v' groynes would create valuable mid-stream scour, resulting in the formation of mid-channel pools.



**Upstream facing 'v' groyne**

- The use of Large Woody Debris (LWD) to provide feature to the channel is of fundamental importance to both fisheries. The benefits for retaining LWD are clearly laid out in the recent EA R&D document, “Large Woody Debris in British Headwater Rivers”. Key conclusions of the report include:
  - An increase in both mean flow depth and velocity and variability of both parameters.
  - The development of high physical habitat diversity both in-channel and in the floodplain. Removal of LWD reduces both habitat quality and availability for juvenile and adult brown trout.
  - Although active LWD dams may impair upstream migration of fish at low flows, they rarely do so at high flows.
  - LWD have significant benefits to the control of run-off at the catchment scale.
  - River and riparian management has important effects on the distribution and character of dead wood accumulation within the river system.

Practical management options to increase LWD include making use of fallen timber in order to create simple flow deflectors by wiring/staking these to the bank. Generally speaking, such groynes are best constructed with their outer end facing upstream in order to reduce the potential bank erosion risk. They would be most usefully located on the shallow, undifferentiated riffles, where localised scouring would improve conditions for spawning trout and grayling. It is important that the Environment Agency is made aware of any adopted policy to retain LWD in the channel, in order to prevent its removal during routine management operations undertaken by the Agency.

- Where sediment has accumulated, particularly on the inside of bends, it would be of great benefit to install faggot bundles in order to encourage consolidation of the marginal zone. The void between the faggots and the original bank line should be infilled with bundles of woody brush. These should be secured (tied/wired down) to prevent wash out during high flows. Further benefit would be obtained if the upstream end of the faggot line were isolated from the flow by the use of larger logs.

Coppicing of bankside trees adjacent to the faggots, particularly on the south bank, will provide a good source of woody brush and will reduce shading, further encouraging marginal vegetation growth.

Further installation of faggots would be useful to help consolidate the banks of the stream in other locations, particularly in over-wide sections of the river following the fencing out of stock. Larger timber arising from on-site coppicing could be utilised in the construction of one or more log pile otter holts.

- Alternatively, a series of small mid-channel islands could be constructed using faggot bundles. These would be of particular benefit in overwide sections of the river where, in conjunction with fencing, they will encourage the growth of marginal vegetation and the consolidation of banks, as well as providing habitat for a wide range of species
- The present policy of pike removal may be counterproductive, with the justification for removal of pike from a trout fishery tenuous. It has never been adequately proven to be beneficial, and may, in some cases, result in an explosion of small pike that prey selectively on juvenile fish including trout.
- Note that the installation of faggots, LWD, timber groynes or any other work to the bed or banks of the river or within 8m of it, and the introduction of fish or their eggs all require the written consent of the EA.