

River Glyme Habitat Enhancements:

**A report prepared by Vaughan
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Habitat Enhancements: River Glyme at Hordley.

1.0 Introduction

Historically, the River Glyme supported a good quality brown trout fishery. However, a combination of in-channel dredging for land drainage purposes, land use changes, climate change and the creation of a number of flood plain lakes have detrimentally affected the river. As a consequence, the trout fishery has declined significantly.

A number of recent (1984-present) fishery surveys undertaken by Thames Water, the National Rivers Authority and the Environment Agency, have highlighted the paucity of suitable spawning and juvenile habitat as a significant blockage on recruitment of brown trout. The current relatively heavy stocking undertaken by the present tenants, Cotswold Flyfishers (CFF), is a reflection of the lack of naturally spawned brown trout in the River Glyme.

As a first step to addressing some of these habitat related issues, CFF have promulgated a scheme to construct three spawning riffles on the River Glyme, on sections of the river controlled by Miles Tuely, Hordley Farm, Hordley, and Blenheim Park Estate. These would be of a similar construction to those installed by the Environment Agency and private individuals at a number of locations in the Cotswolds (eg River Windrush at Upton, River Coln at Coln St Aldwyns etc). They will be sited in stretches of the Glyme with a low sensitivity to flooding of property or arable crops (see attached map). All surrounding land is permanent pasture that is already subject to high winter water tables and periodic flooding.

2.0 Design Package

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1. Scope of Works
2. Specification
3. Quantities
4. Detailed Design Drawings

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1. Scope of Works
 - i) De-silt up to 85m of riverbed as necessary
 - i) Create 85m of gravel riffles using imported blockstone and flint gravel.
 - ii) Create individual fish lies using imported blockstone.
 - iii) Narrow 85m of channel by no more than 1.0m using faggot bundles to create firm edge to riffles. Backfill with excavated bank material to create low level marginal berm. Plant berm with mix of native emergent aquatic vegetation.

All as per attached Drawings, Specifications and Bill of Quantities.

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2. Specification.

As on enclosed Drawings and herein:

i) De-silt river channel where necessary and use silt to infill behind faggot bundles/willow hurdles.

De-silting: Remove soft silt from channel to leave a firm bed at locations for new riffles specified in drawings. No hard bed material to be removed. Place excavated silt as backfill topping behind faggots/hurdles at locations specified in drawings.

ii) Creation of gravel riffles.

Blockstone: As dug/blasted limestone (or similar local stone) blocks. Min 25 kg; Max 50 kg. Laid in open mosaic on riverbed at locations specified in drawings in order to leave a finished water depth of 350mm.

Gravel: Flint reject gravel (mean diameter >50mm) laid over blockstone to a mean depth of 150mm at locations specified in drawings.

iii) Creation of fish lies using imported blockstone.

Blockstone: Size as per specification in ii) above. Stone to be randomly scattered and partially buried at a mean density of 3 stones per 15m of channel length, at locations specified in drawings.

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iv) Narrowing of channel using faggot bundles or willow hurdles.

Faggots: 1.5m x 0.5m. Constructed of brushwood tied with sisal string. Wired to posts at 0.8m centres. Tops cut to 100mm above mean summer water level after installation.

Stakes: Untreated softwood stakes (purchased) or hardwood stakes (from on site coppicing) of nominal 100mm diameter at 0.8m centres (faggot bundles)
Driven to depth to ensure retention of backfill, with tops cut to 100mm above mean summer water level following installation.

Backfill: Organic silt obtained from de-silting of central river channel and from bank regrading as specified.

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3. Quantities.

Description.	Unit.	Quantity.
Blockstone	tonnes	150
Flint reject gravel	tonnes	230
De-silting	m ³	125 (max)
Faggot bundles (1.5m x 0.5m)	No.	125
Untreated posts (for faggots) No.		95
Excavation	m ³	170

Indicative cost of key materials:

Stone:

Blockstone delivered to site @ £10-12/tonne.

Reject flint gravel delivered to site @ £ 12/tonne.

Posts for faggot revetment: 1.8m cleft chestnut posts @ £1.75/ea

PLANS PROVIDED

A: Site Location Plan.

B: Riffle construction and faggot detail.