



Habitat Advisory visit to the River  
Bride, Co. Waterford and Co. Cork,  
Eire.

Undertaken on behalf of Tallow and  
District Angling Club by Vaughan  
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## **1.0 Introduction**

This report forms the output of a site visit to the Glenaboy Stream, a tributary of the River Bride, Co. Waterford and Co. Cork, Eire on 10<sup>th</sup> April 2012 on behalf of Tallow and District Angling Club (TAD). Information in the report is based on observations on the day of the visit and additional comments provided by club members, Ian Mackintosh and Jim McAvoy, and Andrew Gillespie, Inland Fisheries Ireland (IFI).

Throughout the report, normal convention is followed, with right bank (RB) and left bank (LB) of the river identified when looking downstream.

## **2.0 Overview of the River Bride catchment**

The River Bride is one of the major tributaries of the Munster Blackwater with a catchment area draining approximately 440km<sup>2</sup>. The river rises in the Nagle Mountains and flows in an easterly direction until it joins the main Blackwater channel downstream of Villierstown. The river is tidal up to Tallow Bridge. The principle land use within the catchment is agriculture. Geology is dominated by Old Red Sandstone with lesser amounts of limestone also present.

Long sections of the River Bride main channel and several of its tributaries have been designated as Special Areas of Conservation, Special Protection Areas and or Natural Heritage Areas, under Annex I and II of the EU Habitats Directive. These designations are based on the presence of particular flora, fauna and habitats found within the catchment. Key species of conservation significance include Atlantic salmon, lamprey and white-clawed crayfish.

The Bride river system has been ranked 26<sup>th</sup> in the country in terms of the quantity of accessible fluvial habitat (for salmon and sea-trout) available, representing a total of 884,654m<sup>2</sup> or 0.78% of the national total.

The River Bride is a well known brown trout angling water with some good seatrout and salmon fishing also available. The angling potential of the catchment is generally restricted to the R. Bride main channel where short fast riffle sections break up the long glides and deep pool areas. The main angling waters extend from Castlelyons downstream to the confluence with the Blackwater main channel, though some angling is available near Rathcormac and several smaller sections further up the catchment.

## **3.0 Habitat assessment**

The advisory visit focused on the Glenaboy Stream a tributary of the River Bride. The Glenaboy rises to the south of Tallow, joining the main River Bride to the north of the town. The section walked was immediately upstream of the main road bridge at Tallow.

The channel had a generally steep gradient, with a well-developed pool and riffle sequence. The upper section of the reach had a cobble and boulder dominated substrate, with small amounts of gravel suitable for spawning brown/sea trout. The low flows in the river revealed some braiding of the channel, with a dry stony 'island' visible.

In places, there was a well developed fringe of deciduous tree and shrubs. The channel was not however overshadowed, with good stands of submerged vegetation including water crowfoot, water parsnip and water dropwort present in the more open areas.



### **Upper section of the Glenaboy**

Further downstream, the channel gradient decreased slightly, with land use dominated by intensive grazing, largely for dairy cattle. The land was partially fenced on the LB, but unfenced on the RB. As a consequence, there were some sections of extensive and damaging over-grazing. Lengths of the bank were badly poached, with excessive sediment released into the channel. The long-term overgrazing had also resulted in an overwide and shallow channel cross-section.

The channel in the lower section was rather more open, with fewer bankside trees and less shading of the channel. Cover in the channel was provided by submerged weeds, over-hanging brambles, gorse bushes and small amounts of Large Woody Debris (LWD). The substrate size remained generally more suitable for salmon spawning, with cobbles and large gravel dominating. There was however an increasing number of small pockets of gravel suitable for trout spawning. The substrate was generally poorly sorted, with significant deposits of fine sediment visible.



**Lower section of river showing its open aspect with limited shade and cover**



**Over-grazed and over-wide channel**

#### **4.0 Fish stocks**

An IFI fishery survey was carried out by electrofishing key sites during summer 2006. Results are shown in Table 4.1.

**Table 1: Density estimates from Glenaboy electrofishing survey, 2006**

	Density (n/m <sup>2</sup> )		
	0+	1+	>1+
<b>Brown trout</b>	0.141	0.053	0.00
<b>Atlantic salmon</b>	0.55	0.075	0.00

Eel and brook/river lamprey (species not specified) were also captured at the site during the survey.

The results clearly show that the Glenaboy was more suitable for spawning and recruitment of Atlantic salmon rather than brown trout, with the 0+ density of the former some 4 times that of the latter. This difference in recruitment probably relates to the substrate size, which was generally too large for brown trout. Whether this has always been the case, or whether increases in peak flow and/or physical management of the channel have resulted in the loss of smaller gravel, more suitable for trout spawning, in recent years is not known.

Confirmation of the value of the Glenaboy for salmon was provided by the observation of large shoals (50+) of salmon smolts in individual pools on the day of the site visit. On a return visit to the site made by Ian Mackintosh some two weeks later, no smolts were observed, confirming the belief that the high density noted was a result of annual migration to sea. Very few trout were seen during the advisory visit or during Ian Macintosh's subsequent visit to the site.

### **5.0 Water quality**

Water quality and macroinvertebrate assessments were undertaken in the Bride catchment by the Environmental Protection Agency (EPA) in 2006. Unfortunately no samples were taken from the Glenaboy. A very quick assessment of the invertebrate fauna was made by stone turning on the day of the advisory visit. There were abundant cases caddis and small Ephemeroptera nymphs present on the stones in the upper section of the reach.



### **Cased caddis on the underside of stones in the upper length of the reach**

However, the situation at the downstream end of the reach was less satisfactory. There was clear evidence of a poor quality discharge entering on the RB of the river some 200m upstream of the main road bridge. This had obviously been going on for some time, as there was a significant deposit of sediment, sewage fungus and filamentous algae on the bed. The decline in water quality was also obvious in the macroinvertebrate



assemblage with the number of Ephemeroidea and caddis dramatically reduced, and a predominance of freshwater limpet (*Ancylus*).



**RB discharge into Glenaboy....**



**...And clear evidence of its impact**

Water quality in the River Bride downstream of the confluence was also far from acceptable, with an appallingly bad discharge from Tallow Sewage Treatment Works entering the main river downstream of Tallow roadbridge. Discoloured effluent was bubbling up from a pipe in the RB, with extensive beds of sewage fungus coating the river bed downstream. It is understood that funding has been allocated to improve this unacceptable discharge into the River Bride SAC. No firm date has however been agreed for implementation of the upgrade.



### **Poor quality effluent discharging from Tallow STW into the River Bride**

#### **6.0 Recommendations**

Generally, the Glenaboy had good physical habitat, and is an important salmonid spawning stream for the River Bride. Site observation and fishery survey data supplied by IFI indicate that the stream was more suited to the spawning of Atlantic salmon rather than brown trout, with the general lack of smaller gravel probably the key factor limiting trout spawning success. Whether this lack of smaller gravel is a natural phenomenon or a function of recent changes to the flow regime or physical management of the river is unclear.

A number of simple recommendations are made below that if adopted should help to improve the instream habitat quality for both brown trout and salmon:

- Water quality in the Glenaboy was adversely affected by the poor quality discharge identified from the RB pipe. There was clear evidence of a decline in the macroinvertebrate fauna, with the substrate quality also affected due to the growth of sewage fungus, filamentous algae and deposition of silt. This will have a detrimental impact on trout and salmon spawning, and the subsequent survival of their fry. It is vital that the source of the discharge is located and the poor quality effluent stopped from entering the river
- A similar concern exists for the discharge from Tallow STW to the main River Bride. This is a truly dreadful example of poor quality effluent and will affect not only the ecology of the main River Bride, but also the migration of brown trout, sea trout and salmon into tributary streams. It is imperative that a fully funded solution to this issue is agreed and implemented as a matter of urgency, particularly given the River Bride's status as an SAC
- The damage caused by cattle poaching should be addressed by the erection of stock proof fencing along both banks of the reach where they are presently unfenced. Pressure treated posts with 3 strands of barbed wire should be erected, with cattle drinking areas and access stiles located at suitable locations. The

maximum width possible should be isolated from the cattle, forming an un-grazed buffer strip of coarse vegetation that will reduce run-off of sediment from surrounding land, and allow the growth of fringing vegetation, valuable for the protection of juvenile fish

- Large Woody Debris introduced to the channel is an excellent way of not only providing additional cover, but also of increasing bed scour, creating deeper pools and helping to sort the substrate. This is important as it will create short sections of silt free gravel at the tail of pools that is ideal for trout and salmon spawning. Ideally, LWD can be introduced by the partial cutting and hinging of bankside trees into the water. This has the advantage of maintaining a secure fixing to the bank and also keeping the hinged trunk alive. The LWD can be further secured using either wooden stakes driven into the bed and wired to the trunk, or by drilling the trunk and driving rebar through it into the riverbed (beware hidden utility service cables and pipes)



**Hinged timber .....**



**.... And additional fixing using stakes and wire**



- Simple mid-stream deflectors can also be constructed using paired upstream facing timber limbs fixed in places with stakes or rebar. Arranged in this pattern, the LWD concentrates flow into the centre of the channel, scouring a small pool and downstream spawning riffle.



**Paired LWD limbs used to create a 'v' shaped deflector. Note rebar and steel washer fixing**

- Wherever LWD is used, increased fixing security can be obtained by the use of a cable laid wire 'break away' passed through a pre-drilled hole in the timber and attached to the root bole of a tree or a buried grounds anchor. In the event of a failure of the fixings, the cable prevents the LWD being washed away



**LWD introduced to a river. Note the steel 'break away' cable attaching the LWD to the tree bole**

- Increased amounts of cover and bed variation can also be provided by the use of stone deflectors. These comprise of a series of large boulders arranged into a rough upstream facing 'D' shape in the centre of the channel. In combination, they increase water velocity creating scour and cleaning fine sediment away from potential spawning gravel.



#### **A 'D' shaped deflector in a small limestone stream**

- Brushwood bundles can usefully be introduced along the margins of the channel, creating excellent refuge areas for fry. The bundles should be around 2-3m long and can be fixed with wire or twine to well-driven un-treated wooden stakes. Bundles can be used to narrow the channel by fixing them parallel to the bank in overwide sections of the river. They will gather sediment around them, allowing the bankline to extend further into the channel
- A mix of native deciduous trees should be planted along the more open sections of the reach to increase shading of the channel as they grow. There are increasing concerns that average water temperature is rising in small streams in the face of climate change, with maximum temperatures attained near to lethal levels for salmonids
- Further guidance on habitat improvement techniques can be found in the Wild Trout Trust habitat manuals which are available on the website [www.wildtrout.org](http://www.wildtrout.org) under the Library tab

- It is vital that any works planned are done in conjunction with both the Inland Fisheries Ireland (IFI) and the local council. The Wild Trout Trust may be able provide a number of ways of helping club with their fund raising for projects. These include the 'Rods for Conservation' scheme where a Sage rod could be provided at cost to Tallow Angling Club. This can then be raffled to raise funds. Advisory visit bursaries may also be available from the Trust up to a value of £1,500 (or Euro equivalent); these are aimed at helping clubs secure matched funding for project work. For more information contact Tim Jacklin [projects@wildtrout.org](mailto:projects@wildtrout.org)
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