



Habitat Advisory visit to the River  
Robe, Co. Mayo, Eire.  
Undertaken on behalf of the River  
Robe Angling Club by Vaughan Lewis,  
Windrush AEC Ltd  
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Windrush Aquatic  
Environmental Consultancy

Windrush AEC Limited  
Registered Office: The Cottage  
Fordwells, Witney,  
Oxon. OX29 9PP

Telephone: 01993 878573  
Email: [vaughan@windrushaec.co.uk](mailto:vaughan@windrushaec.co.uk)

## 1.0 Introduction

This report forms the output of a site visit to the Robe River, near Crossboyne, Co. Mayo on 24 May 2013 on behalf of the River Robe Angling Club (RRAC). Information in the report is based on observations on the day of the visit and additional comments provided by club members, Adrian Nestor and Alan Crinnion. The club is in the process of negotiating fishing rights on more than 10km of the River Robe upstream and downstream of Crossboyne, to the river's entry into Lough Mask. The club has recently established a website [www.riverrobeanglingclub.com](http://www.riverrobeanglingclub.com) which contains useful information regarding the fishery and recent catches by members.

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

## 2.0 Habitat assessment

The River Robe rises near Ballyhaunis, flowing generally westwards for more than 60km before entering Lough Mask. The river's drainage area is in excess of 320 km<sup>2</sup> and it is the longest tributary of the Lough Mask catchment. The advisory visit focused on the river immediately upstream and for some 5km downstream of Crossboyne.

Upstream of the bridge, the channel was moderately shaded by riparian trees, but there was a dearth of instream cover, particularly Large Woody Debris (LWD). Recent clearance carried out by the Office of Public Works (OPW) had removed significant amounts of fallen timber from the channel, reducing the availability of cover. Some pollarding and coppicing of riparian trees was also undertaken, along with some localised removal of gravel from the channel, potentially impacting on the availability of spawning and juvenile habitat for trout. The removal of gravel had exposed the bank adjacent to a small weir and was causing some local erosion. Overall, the works had resulted in the creation of a rather featureless section of river (Figure 1)



**Fig 1: RRAC members standing on pile of gravel recently dredged from the river**



**Fig. 2 Recently coppiced trees with large pile of woody debris visible to the left**

This section of the river was reasonably well-fenced with no significant erosion due to cattle poaching. There was also clear evidence of run-off into the river from a forestry area via a recently dredged tributary ditch, with a brown discharge noted on the day of the advisory visit. The ditch was apparently also very spatey with high volumes of water entering the river during periods of high rainfall (Figure 3).



**Fig.3 LB ditch recently cleaned and showing evidence of dirty discharge**

Downstream of Crossboyne bridge , a number of small weirs had been constructed, with associated sections of gravel riffle with a moderate gradient. It is likely that these provided some main stem spawning areas for brown trout.



**Fig. 4 River downstream of Crossboyne Bridge showing series of small weirs**

At the Coffin Bridge, approximately 3km downstream of Crossboyne, the river was a mixture of riffles and shallow glides with a reasonable gradient, and deeper more featureless sections of river. The banks were temporarily fenced using posts and electric wire. Unfortunately, the fencing was located very close to the bank top leaving a narrow buffer strip and limited coarse vegetation which is valuable for cover and limiting erosion (Figure 4). As a result there were also some very significant local erosion issues, particularly on the outside of bends.

The past dredging of the river had left a very extensive bund of material along the river's banks. In places, this was in excess of 1 m high with the bulk of the bund comprised of stone and gravel. With care, this could be re-used and introduced to the river to increase the availability of shallow riffles/rock ramps that provide ideal habitat for juvenile and spawning trout.



**Fig. 4 Temporary fencing close to the bank top. Note also the raised bank of dredged spoil on the LB**

There were some well-constructed cattle drinks of un-usual and very practical design. There was a limited number of riparian trees, leaving the channel rather unshaded. There was also a lack of LWD in the channel.



**Fig. 6. Innovative and well-designed cattle drink**

Mink are present in the catchment, with some active trapping taking place to control their numbers.

#### **4.0 Fish stocks**

No quantitative data on fish stocks was available, although it is understood that IFI have undertaken fishery surveys in the River Robe in the recent past. Large individual trout in excess of 2.5kg have been caught, with reasonable numbers of smaller trout up to 1kg present.

The River Robe is also known to have a population of native white-clawed crayfish, which are protected under European legislation. It is believed that these make up a significant part of the diet of the larger trout present in the river.

#### **5.0 Water quality**

A quick assessment of the macroinvertebrate fauna of the river was undertaken by turning stones on the river bed. A number of stonefly (Plecoptera), and stone clinging and olive mayfly (Heptagenid and Baetid) nymphs were observed, clearly indicating generally good water quality, a fact reinforced by the presence of adult yellow may duns *Heptagenia sulphurea* and mayfly *Ephemera danica*.

Less positively, there was evidence of some enrichment of the river, with extensive growth of filamentous algae and diatoms on the river substrate. There was some suggestion that intermittent run-off of agricultural slurry has taken place in the past.

#### **6.0 Recommendations**

Habitat quality in the River Robe was variable with some sections of good habitat for all lifestages of brown trout interspersed with long sections of rather deep, featureless water only offering habitat for adult trout. A number of simple recommendations are made below that if adopted should help to improve the instream habitat quality for brown trout:

- Fencing should be erected to exclude stock from the river banks. The maximum width possible (ideally in excess of 5m) 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. Where fencing is presently located very close to the bank top, it should be moved back to create a wider buffer strip, helping to reduce bank erosion
- The run-off from the forestry ditch is likely to be carrying significant amounts of sediment into the main river. Ideally, a review of the local drain network should be made by OPW with a view to attenuating flood flows and the associated sediment loading
- 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 ground anchor. In the event of a failure of the fixings, the cable prevents the LWD being washed away
- 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
- There was a large amount of stone and gravel present on the RB immediately upstream of Crossboyne Bridge. It is understood that this might be available for introduction into the river subject to the necessary consent of IFI/OPW. If this is the case, it could be used to construct riffles/rubble mats or for the construction of stone deflectors (see below). The gravel and stone recently removed from the river could also be re-introduced to the river to re-create some of the riffle areas lost during the dredging.
- Similarly, there was a very extensive raised bund on the LB downstream of Coffin Bridge. This was formed from material previously dredged from the river. Subject to consent from OPW/IFI, it could potentially be excavated and re-introduced to the river to create series of rock ramps/riffles for spawning and juvenile trout habitat.



**Stone/gravel piles on RB upstream of Crossboyne Bridge**

- Increased amounts of cover and bed variation can also be provided by the use of stone deflectors. Good examples have already been installed by IFI. Similar designs could be used elsewhere.



**Alternating and paired deflectors installed IFI with downstream rock ramp**



**Paired stone deflectors and rock ramp installed by IFI**

- Alternatively, a series of large boulders can be arranged into a rough upstream facing 'D' shape in the centre of the channel where there is some gravel present. (see photo below). The boulders do not need to span the full width of the channel and act by increasing water velocity locally, creating scour and cleaning fine sediment away from potential spawning gravel.
- To protect fish stocks from over-exploitation, it is important that a general presumption in favour of catch and release of trout is adopted. Fish stocks in rivers such as the Robe can easily be damaged by even relatively low levels of removal by anglers.
- The humane control of mink should be continued to protect both fish stocks and birds/small mammals in the river corridor.



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

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- 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 important to develop a robust set of data regarding the invertebrate populations in the River Robe and hence its water quality. A system known as Small Stream Risk Score (SSRS) is used in Ireland to monitor water quality of rivers by monitoring macroinvertebrates. A training manual for SSRS can be found at [http://www.westernrbd.ie/PDF/SSRS-Training-manual\\_11\\_01\\_06.pdf](http://www.westernrbd.ie/PDF/SSRS-Training-manual_11_01_06.pdf). A perhaps simpler and more angler friendly alternative for members of the fishing club who are interested in the water quality and fly life of the river, would be to contact the Riverfly Partnership <http://www.riverflies.org/> who are able to provide information on monitoring

invertebrate populations in rivers. If there are one or two enthusiastic volunteers in the co-operative, it would be worth contacting the partnership for further advice and information. It is possible that the Riverfly partnership may be able to assist co-operative members to become familiar with the requirements of SSRS.



#### **Riverfly monitoring undertaken by anglers**

- LWD provides excellent habitat for riverflies to deposit eggs on. Further habitat for egg laying flies can be provided by using fly boards. These are simply pieces of wood cut into a rough boat shape that are attached by a rope to a tree or other fixed point and then floated on the water. Flies land on them, crawl underneath and deposit eggs that are then safe from most predators. A few of these dotted about on the river would make valuable additional nursery sites for river fly eggs
- 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 top quality rod could be provided at cost to the River Robe 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 Ben Tyser [projects@wildtrout.org](mailto:projects@wildtrout.org)
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