FRESHWATER PEARL MUSSEL PROJECT

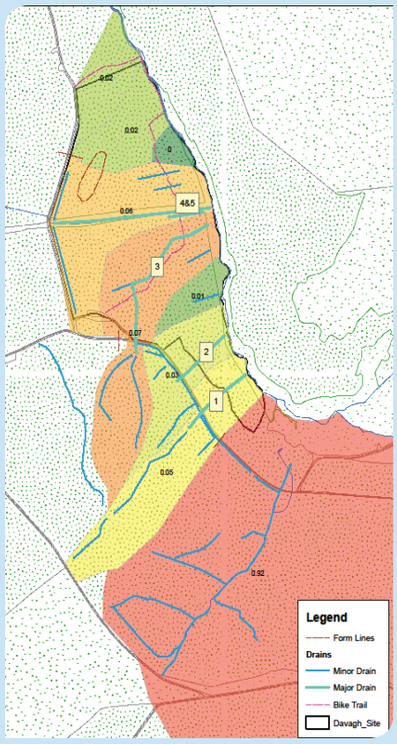
AUTUMN 2012 NEWSLETTER

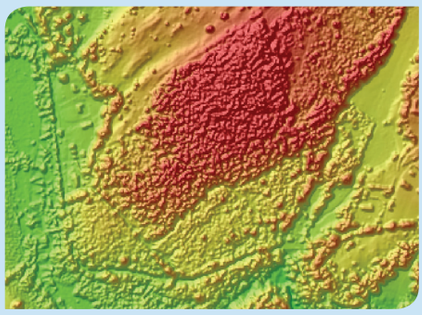
Donegal County Council, in partnership with Northern Ireland Environment Agency (NIEA) - grant aided under the European Union's INTERREG IVA Programme, as part of the Environment strand, under Priority 2.2

Project Update

The project continues to liaise with agencies north and south to promote pearl mussel conservation across a range of sectors.

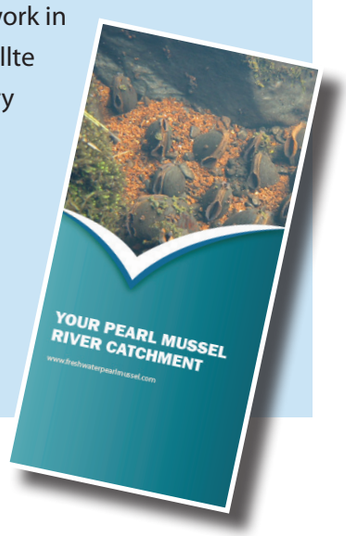
In Northern Ireland, DARD[1] Countryside Management Delivery Branch is taking the message to farmers, advising that the amount of fine sediment and nutrients entering rivers can be reduced by fencing to limit livestock access and the damage that stock can cause to gravel beds, and only spreading slurry under suitable conditions. Advice is being made available through local DARD offices. In collaboration with DARD Forest Service, the project is investigating a range of alternative methods to map the drainage system in forests before felling so that effective management measures can be put in place to prevent damaging sediment loss to rivers.





In the Republic of Ireland, DAFM[2] are engaging with us in regard to our sediment trapping work in agricultural catchments, and possible catchment approaches to drainage management. Coillte and Forest Service continue to support our work in a Coillte owned 4ha experimental forestry plot where we are investigating alternative approaches to forest management.

We have been talking to people on the ground over the summer too, and have carried out a survey of household water use in a pearl mussel catchment.



[1] Department of Agriculture and Rural Development
[2] Department of Agriculture, Food and the Marine

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Northern Ireland Environment Agency

An Agency within the Department of the Environment

Information pamphlets have been distributed in catchments where we are working to keep people informed, and we are now developing some material for schools for the next generation of pearl mussel lovers. We'll have more on this in our next newsletter.

And of course much valuable data is being accumulated from our eight telemetry monitoring stations. This is being supplemented by sampling at numerous points using automatic samplers, or grab samples taken by project staff. All this data is being compiled to provide a detailed picture of the places that pearl mussel lives and what it needs to survive. It will help us to prepare some guidelines – the DO'S and DON'TS for use in pearl mussel catchments.

The FPM project meets world experts

The FPM project has been represented at the 2012 International Meeting on Biology and Conservation of Freshwater Bivalves at Bragança, Portugal (4th – 7th September 2012). The project's two pearl mussel experts, Evelyn Moorkens and Ian Killeen both travelled for the meeting. The conference had delegates from over 35 countries and learned about exciting projects taking place from Thailand to Uruguay . The name Uruguay - we were told - means "River of shellfish", so there is an entire country called after its mussels! There were very interesting talks from our American colleagues, who are lucky enough to have around 300 species of freshwater mussels.

In spite of all the diversity of species across the world, half of the 64 papers presented were on the conservation of our own special species, the freshwater pearl mussel, now listed as critically endangered in Europe. Updates were given from a range of European pearl mussel projects taking place in Portugal, Spain, Luxembourg, Sweden, Finland, Norway, Germany and Austria. Ian presented results on ten years of monitoring pearl mussel sites in Ireland and England, and Evelyn demonstrated the usefulness of using a measurement called 'Redox Potential' in pearl mussel rivers. Redox is a way of assessing the quality of the river bed and its ability to allow oxygen movement to young mussels.

There were a range of very interesting posters and lively discussions took place at the poster sessions, not least at the poster representing our project. The poster provided details of the work the project is carrying out. There was great interest in the practical measures being undertaken for forestry and agriculture in the Leannan, Glaskeelan and Owenkillew catchments, and promises of ongoing interactions with other workers across Europe striving to conserve this important species.

Evelyn explains the project's practical measures to Marco Denic of the Bavarian coordination office for the protection of freshwater mussels

Saving the Ballinderry mussel from extinction

The FPM Project is not the only project concerned with saving the pearl mussel. In recent months we have been liaising with another group, Ballinderry Rivers Trust, who are focussed on one particular population of mussels.

The Ballinderry River, Co. Tyrone, is one of only six rivers in Northern Ireland that still supports a population of freshwater pearl mussel. The population is believed to be less than 1,000 individuals; most of which are 'hanging on' in some of the few largely undisturbed river stretches in the upper part of the river. Their presence led to the Upper Ballinderry River being designated a Specials Area of Conservation and an area of Special Scientific Interest in 2000.

Ballinderry Rivers Trust (formerly Ballinderry River Enhancement Association) has been carrying out conservation work across the catchment since 1984. The Trust runs a breeding centre which has been integral in restoring the native dollaghan trout population, supporting Atlantic salmon numbers and running breeding programmes for lamprey and white-clawed crayfish. In the late 90's the Trust secured funding to establish a breeding programme for the freshwater pearl mussel. This project, funded by SNIFFER and then the Northern Ireland Environment Agency and supported by Queens University Belfast, became the first project in Europe to successfully breed a large number of the globally endangered mussels in captivity.

A small number of isolated mussels (affectionately nicknamed the bachelors and spinsters), dispersed by floods in the river, were collected and placed in a tank which was plumbed into tanks of young dollaghan trout, hatched in the facility. The microscopic mussel larvae, known as Glochidia, wash out of the mussel breeding tank, through the tanks of fish, allowing the glochidia to attach to the gills of the young trout. Over the last 16 years, some of these fish, carrying their precious cargo, have been released back to the river, where the juveniles mussels fall off, whilst others have been moved to specially constructed gravel filled tanks for collecting the young mussels and for research purposes. It is from these special tanks that, to-date over 2,000 young mussels have been collected, twice as many again than the number thought to still be in the entire Ballinderry River.

Work by Queens University's PhD student Conor Wilson in 2011 has identified suitable locations to release 14-15 year old 'teenage' mussels to the river. However, conditions in the Ballinderry are still not good enough to for very young 0-5 year olds to survive due to high siltation levels, resulting in them becoming suffocated in the bed of the river. Conor concluded that if nothing is done to improve the situation for mussels in the Ballinderry River, they could be extinct in 30 years.

In a new project which aims to save the Ballinderry freshwater pearl mussel from extinction, Ballinderry Rivers Trust has secured funding from the Northern Ireland Environment Agency and is awaiting the final decision on funds from the Heritage Lottery Fund, which will see a three year project tackle the issues which are preventing juvenile mussel survival in the river.

The Ballinderry Freshwater Pearl Mussel Rescue Project will see the creation of a sanctuary site for mussels in the river; £100,000 worth of river improvement schemes to reduce siltation and pollution; further research into the release of captive bred mussels and in-river breeding success in a sustainable model population of mussels; and the employment of a dedicated learning and outreach officer to work with schools and the local community to raise awareness of the mussel and the importance of clean rivers.

Our FPM Project will liaise closely with the Ballinderry rescue project when developing strategies for catchment plans to ensure that the most complete information is available and that we do not replicate one another's work.

FURTHER INFORMATION / CONTACT DETAILS

The FPM project is being promoted by Donegal County Council (www.donegalcoco.ie) in partnership with NIEA (www.doeni.gov.uk/niea/), and delivery of the project is through a full time project coordinator and consultancy services provided by RPS (www.rpsgroup.com/). Further information is available through our website www.freshwaterpearlmussel.com where you may also wish to leave a comment or request information.

You can also contact the Project Coordinator:

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The Special EU Programmes Body is a North/South Implementation Body and is responsible for managing the INTERREG IV programme under which the FPM Project is funded. For more information on the SEUPB please visit www.seupb.eu

It is hoped that by building on the success of the Ballinderry freshwater pearl mussel breeding project, the significant leap can now be made to re-establish the Ballinderry River as a safe home for this rare and special species, allowing it to breed in the wild and bring the population back to sustainable levels.

For more information about the Ballinderry Rivers Trust or its work to conserve the freshwater pearl mussel visit www.ballinderryriver.org

Catchment Snapshot – Ballinderry

In keeping with the previous edition we again provide a brief description of one of our pearl mussel catchments. Given our article on the Ballinderry mussel in this edition, we thought it appropriate to describe the Ballinderry River in County Tyrone.

The Ballinderry River rises on the southern slopes of the Sperrin Mountains in a small lough called Camlough nestled between the peaks of Evishanoran and Craignagore Mountains. It flows eastwards through predominantly rural landscape to Cookstown, and thence into Lough Neagh, a distance of about 50 kilometers as the crow flies. It is a moderately large river, and the river valley is generally shallow and open, with a flood plain of varying width. The majority of the surrounding land is rough, with patches of woodland and marshy grassland, and improved grassland for sheep and dairy farming.

Weir on the Ballinderry River

In the past the river was relatively free from pollution except for run-off from lint holes used in the retting of flax for the linen industry. However, in recent years pressures from industry, farming and housing have enriched the river and increased the amount of silt. Although a large proportion of the Ballinderry system was dredged in past arterial drainage schemes, the natural sinuosity of the upper Ballinderry has been unaffected. All these changes have had an impact on the number of mussels in the Ballinderry river system.

The Ballinderry and its many tributaries are still important for salmon and trout. The native dollaghan trout are much prized by local anglers, some of whom still refer to the pearl mussel as 'Shliggans'.