

## PIP GB - Pearls in Peril

**Project name and LIFE code:** PIP GB - Pearls in Peril - securing the future of the freshwater pearl mussel in Great Britain, LIFE11 NAT/UK/000383

**Background:** 'Pearls in Peril' is a Life+ Nature project co-funded by 22 organisations across Scotland, England and Wales. The aim of the project is to safeguard important populations of the critically endangered freshwater pearl mussel (*Margaritifera margaritifera*) in Great Britain. The project runs from September 2012 - March 2017. A total of 21 rivers across Britain are involved, all of which are Natura 2000 sites and are designated as Special Areas of Conservation (SACs).

In Scotland, these are the Rivers Dee, South Esk, Spey, Evelix, Naver, Borgie, Oykel, Fionaven, Abhainn Clais an Eas, Allt a'Mhuilinn, Ardvar & Loch a'Mhuilinn Woodlands, Inverpolly, Moidart, Kerry, Glen Beasdale, Ardnamurchan Burns, Rannoch Moor, North Harris, Moriston and Mingarry Burn on Mull. In England, the project includes work on the River Ehen in Cumbria and in Wales, the Afon Eden in Snowdonia.



Upper River Dee small tree enclosures, Pearls in Peril LIFE

The project is implementing a wide range of conservation actions. In particular these focus on restoring and maintaining habitat and water quality suitable for freshwater pearl mussels. The project has established riparian woodland over 100km of riverbanks.

These will help stabilise riverbanks, provide valuable shade to guard against high summer water temperatures, and provide leaf litter and woody debris to improve conditions for pearl mussels and salmonids. The project is also working with land managers, farmers and foresters to reduce diffuse pollution from surrounding land use. This is being done in key catchments and sub-catchments that have already been identified as being at particular risk from diffuse pollution and will gradually help provide the very high water quality required by pearl mussels. This is being done by introducing buffer strips, relocating stock watering, blocking forest drains and building silt traps. An unusual threat to the population of pearl mussels living in the Afon Eden in Snowdonia has been run off from a local trunk road. Work is underway to remove the heavy metals and other contaminants that come from the road drains by installing special interceptors in the road drains that will capture contaminants and clean up the water draining from the road.

The project is also improving riverine habitat by removing relic structures such as weirs, fishing platforms, and bank protection works. Such structures interfere with the natural patterns of sediment erosion and deposition that otherwise maintain the gravel beds required by pearl mussels. To date over 5 km of river have been restored by removing such structures, re-introducing boulders to rivers to help stabilise gravel beds, and using willow spiling to create and maintain more natural riverbanks. This has led to some very surprising findings, including over 20 rusty cars being extracted (and sustainably disposed of) from behind some old bank protection near Braemar on the River Dee.

Elsewhere the project has been helping to kick start the early stages of a pearl mussel's life cycle. Pearl mussels live harmlessly on the gills of very young salmon or trout during the first year of their life. In North Harris, the River Moriston and the River Ehen local fishery biologists have refined a technique for collecting the larval stage of the pearl mussels, collecting young fish at the same time, and introducing the pearl mussel larvae onto the fish's gills. This has maximised the number of pearl mussels that are able to successfully complete the first year of their life and, thereby, contribute to the success of the overall population.

Unfortunately the pearl mussel remains at risk from illegal persecution. Such is the threat that the species is a UK wildlife crime priority, alongside raptors and other well known wildlife species. The project has been working with local police forces across all 21 rivers in Scotland, to raise awareness of the threat posed by persecution and introduced local 'riverwatch' schemes to improve vigilance and encourage the public to report any suspicious activity.

Raising public awareness of the species is a key part of the project. The main means by which the project is managing this is by providing a "Pearls in the Classroom" programme for schools in the catchments of Natura 2000 sites. The project provides resources, which tell children about the pearl mussels in their local rivers, its long lifespan, relationship with local fish populations and history. So far 'Pearls in the Classroom' has been delivered to over 4000 children.

### **How does the project anticipate its sustainability once funding has stopped?**

The actions to raise awareness of wildlife crime will be sustained by the work being integrated into the work plan of the UK group that coordinates action on freshwater pearl mussels at risk from wildlife crime.

In rivers where work is being done to improve habitat, landowners, farmers and forest managers have signed management agreements that they will maintain the relevant changes for at least 5 -10 years after the project finishes.



White Water, River South Esk, restored section of river with bank protection removed, Pearls in Peril LIFE

The project website will be maintained for at least 5 years after the project and continue to host an array of guidance and information to support pearl mussel conservation. This will include the “Pearls in the Classroom” information that can therefore be used by others to continue raising awareness of the species amongst our young people.

### Key lessons learnt:

- Provide sufficient opportunities to exchange information with other project and partners across the UK and Europe (e.g. visiting other projects, hosting conferences and workshops).
- Work with credible, local partner organisations to maximise the opportunity to effectively engage with local landowners, farmers, foresters etc.
- Dedicated project officers are vital to ensure sufficient time is devoted to implement conservation actions.
- Ensure sufficient administrative support is provided within the project, particularly to support a project’s reporting requirements.
- Ensure that project outputs are available on the PIP website for wider dissemination
- Working with partners has facilitated an exchange of skills and experience through delivering physical restoration action. This experience can be used by project partners to deliver further river restoration schemes after the PIP project.

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