

Press release: Fish stocks boost for endangered pearl mussel

Thousands of sea trout have been released into rivers in Northumberland to stock rivers for anglers and help protect the future of a critically endangered species, the freshwater pearl mussel.

Pearl fishing and water pollution from industry have led to worldwide decline of the pearl mussel.

A healthy population of endangered freshwater pearl mussels is important for water quality – each mussel filters 50 to 70 litres of water. They improve the quality of the habitat, increasing the ecological diversity, which includes juvenile trout and salmon numbers.

The Environment Agency's Kielder Salmon Centre staff Richard Bond and Jess Anson have developed a technique to enable pearl mussel larvae to attach to the fish gills, replicating their natural life cycle in the wild.

The larvae will drop off the sea trout gills towards the end of May where they will settle on to the river bed. Given the right conditions, these juveniles could survive into adulthood and live for up to 100 years.



Close up of pearl mussel larvae (white dots) attached to the sea trout gills

Around 12,000 one-year-old sea trout, which have been bred at Kielder Salmon

Centre, were released this week into North Tyne tributaries of the River Tyne.

The larvae attached to them were harvested from 80 adult mussels which are cared for at the centre.

Kielder Salmon Centre breeds 360,000 salmon and between 10,000 and 20,000 sea trout every year to stock rivers.

Complex life cycle

Richard said:

The pearl mussel has a complex life cycle which begins as larvae. These larvae, called glochidia, requires salmon or sea trout to host them for the first stage of their development.

They attach to the gills of trout in the River Tyne between late July and early August, where they remain until the following spring when they drop off the fish's gills. They need clean water and gravel, and well oxygenated water where they continue to grow.

The survival rate for juveniles has declined over the years, which has led to an ageing population, with few mussels under 50 years old.

This means they are a critically endangered species with only around 30,000 adult mussels in the wild in the North Tyne area, and 500,000 across the country.

This work at the hatchery is to try to increase the numbers of juveniles in the river, boost future numbers, natural reproduction and survival rates in efforts to halt the population decline.



Water quality improvements

After considerable investment, water quality has improved dramatically across the UK and rivers in England are the healthiest they have been for 20 years.

The improvements in water quality of the River Tyne and its tributaries has been excellent, and along with the continued work of the Environment Agency and partners, has resulted in improved conditions for natural breeding in the rivers, and a flourishing ecology.

[Kielder Salmon Centre pearl mussel project](#)

Richard added:

In 2010 we first managed to successfully get freshwater pearl mussel larvae to attach to the gills of sea trout. Since then we have released sea trout every spring to the River Tyne tributaries.

Over the next two years we will be carrying out surveys, looking for the first of these juvenile mussels that were released to see if or where they have survived.

Even at 7 years old they will be less than 3cms long, most of which will be buried under the river bed. In another 7 to 10 years they should be old enough to breed.

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Guidance: Heat Networks Investment Project (HNIP) pilot scheme

Updated: The Sheffield District Energy Network project will now not go ahead.

The supported heat network projects provide heat to approximately 5,000 domestic customers and 50 non-domestic buildings. Of the domestic customers on the supported networks, approximately 2,500 will see bill savings against the counterfactual heat source and, of the non-domestic customers, 19 will see savings. A total of 216,324t CO₂ will be saved over the next 15 years, across all 9 heat networks. Total heat supplied annually by these networks will be around 85,000 MWh/year.

[Find out about more heat networks and other funding available.](#)

The pilot

The Heat Networks Investment Project (HNIP) pilot ran from October 2016 to March 2017. We are building the lessons from the pilot into the main scheme design and delivery approach.

Update: The Sheffield District Energy Network project will now not go ahead. [See the project update for further information.](#)

The main scheme

The £320 million HNIP capital investment programme is expected to support up to 200 projects by 2021 through grants and loans and other mechanisms and to lever in up to £2 billion of wider investment, reducing bills, cutting carbon and forming a key part of wider urban regeneration in many locations.

The main funding round will open and start receiving applications in autumn 2018, with first year funding to be allocated by March 2019.

Applications were limited to local authorities and other public sector bodies during the pilot phase. We expect the main scheme will have a wider scope. Eligible sponsors could include the private sector, community groups and not-for-profit groups.

[News story: Clean energy projects receive £24 million to keep towns warm](#)

The £24 million is spread across projects from Sheffield to Somers Town, which will soon help warm homes and businesses with low carbon energy.

This is the first round of funding from a £320 million pot set aside to support heat networks, which have been dubbed 'central heating for cities' and have the potential to reduce heating costs in some cases by more than 30%.

The networks remove the need for individual properties to have their own boilers by linking them to a single heat source.

Climate Change and Industry Minister Nick Hurd said:

This Government is committed to ensuring a clean, secure and affordable energy supply for communities and businesses across the country.

Energy innovations like heat networks can cut costs for households and reduce carbon emissions, as almost half of the energy we use goes towards heating our homes and buildings.

The £24 million in Government funding awarded to these projects will help deliver low carbon energy at competitive prices for local consumers.

Nine of the winning authorities will receive a share of just over £24 million of capital funding to support the building of their projects, with around £200K in early stage funding for a further four authorities to develop their plans. This will build a pipeline of high quality projects ready to compete for future rounds of capital funding.

Winning entries at the building stage include four projects in London, two in Manchester and one each in Sheffield, Crawley and Colchester. Support was won at the planning stage by projects in Trafford, Islington, Buckinghamshire and Middlesbrough.

Heat networks use technologies such as biomass boilers, heat pumps, energy from waste, combined heat and power (CHP) plants and even heat from deep below the earth's crust. They can also use recycled waste heat from places like factories, power stations and even the London Underground and pump it into homes and businesses to keep them warm.

The scheme will run over five years and is expected to enable up to 200 heat networks to be built, while leveraging around £2 billion of wider public and private investment.

Heat networks have already been used successfully in the UK, and are popular across Scandinavian cities for keeping homes warm in winter. The winners of this pilot will now begin to build their projects, with further funding available over the next four years to support hundreds more. The department aims to launch the main funding scheme by the end of 2017.

Notes to Editors

1. This initial funding was open to local authorities in England and Wales and public sector bodies who submitted applications last November. The total value of the fund over five years is £320m and in future years this will be opened up to a wider set of applicants. More information

about applying for the scheme.

2. The estimated 30% reduction in heating costs is sourced from AECOM (2015) Assessment of the Costs, Performance, and Characteristics of UK Heat Networks. It compares estimated heat price for a small flat (10.24p/kWh) with average heat price from heat networks studied (6.43p/kWh) – pp. 35-36.
 3. The nine winning projects will receive a share of just over £24 million, and will build networks using a variety of technologies:
 - Sheffield District Energy Network development- Energy from waste plant
 - Somers Town (Phase 2), Camden- Gas Combined Heat and Power (CHP) plant
 - Manchester Civic Quarter Heat Network- Gas Combined Heat and Power (CHP) plant
 - Colchester Northern Gateway- Heat pump
 - Wood Street South, Waltham Forest, London- Gas Combined Heat and Power (CHP) plant
 - Becontree, Barking & Dagenham- Gas Combined Heat and Power (CHP) plant
 - Church Street District Heating Scheme, Westminster- Gas Combined Heat and Power (CHP) plant
 - Crawley Town Centre Heat Network- Biomass boiler and Gas Combined Heat and Power (CHP) plant
 - St Johns Heat Network, Manchester- Gas Combined Heat and Power (CHP) plant
 4. An energy from waste plant burns refuse such as household and garden waste to generate electricity and/or heat.
 5. Combined Heat and Power (CHP) plants produce both heat and power simultaneously, often using reciprocating engines and water jackets to collect the heat. Combining generation of heat and power in this way can reduce carbon emissions by up to 30%.
 6. A heat pump takes heat from the environment (e.g. air, ground, water but in this case heat from ground water), boosts it with a pump and it is then circulated to buildings on the network.
 7. A biomass boiler burns sustainable wood product e.g. pellets or chips to create heat.
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[Press release: Opening of humanitarian corridor from Sudan to South Sudan](#)

The members of the Troika (Norway, the United Kingdom, and the United States) welcome the Government of Sudan's opening of the border crossing into Bentiu, in South Sudan, for the delivery of humanitarian food assistance to areas gravely affected by the conflict and suffering from famine and severe food insecurity. This border crossing will allow for a second access route for emergency food assistance, along with the already open Kosti – Renk river corridor. The Troika also recognizes the Government of Sudan's efforts to facilitate the flow of food assistance through Port Sudan.

The Troika notes Sudan has accepted over 365,000 South Sudanese refugees, including more than 60,000 South Sudanese who have entered Sudan in the first three months of 2017, and encourages the government to ensure continued humanitarian access to these refugee communities. The Troika also welcomes the Sudanese government's decision to donate food from their own food reserves to people in need in South Sudan.

The Troika calls on the Government of South Sudan to coordinate with the World Food Program and partners providing vital assistance. The Troika urges the government and all armed groups to allow full and safe humanitarian access to reach communities in need, and to ensure that food and other commodities are not diverted from the intended beneficiaries.

The Troika recommends the opening of additional land and water routes between Sudan and South Sudan so that communities in both countries can benefit from open trade and the efficient and swift movement of humanitarian goods and personnel.

Further information

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