GWCT welcomes new study showing that beavers benefit fish by building dams in Scottish rivers

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A new study, part-funded by the Game & Wildlife Conservation Trust, has found that modification of river habitat by Eurasian beavers helps fish in small upland streams. The project was led by the University of Southampton, in collaboration with the GWCT, Salmon and Trout Conservation, and NatureScot.

Dylan Roberts, Head of GWCT Fisheries, said 'We welcome the results of this much needed UK based published work to inform what is currently a very topical debate."

The research shows that by building dams in shallow streams, the beavers create deeper pools that increase availability of suitable habitat and abundance of food – benefiting brown trout, which are a commercially and ecologically important species.

As a result of beaver activity, the trout tended to be larger, having grown well throughout the year, with the largest and most mature fish, that are of greatest interest to fishermen, being much more abundant. In beaver modified habitat, the trout also benefit from the provision of sanctuary from predators.

The research, conducted by scientists at the University of Southampton, and published in the Canadian Journal of Fisheries and Aquatic Sciences, monitored the fish that inhabited two Scottish streams that flow into the same loch. One stream was modified by beaver activity through the construction of five dams, while the other was left unaltered, providing a unique opportunity to compare the influence of beaver habitat modification on fish.

PhD student Robert Needham, from the International Centre for Ecohydraulics Research at Southampton, explained: "There has been a great deal of concern about the possibility of beaver dams blocking the upstream and downstream migration of Atlantic salmon and trout as they move to and from their spawning grounds, as well as impacting habitat quality. This study explored how brown trout respond to beaver activity."

Beavers were once common throughout the UK until they were hunted to extinction around the 16th Century. As is the case in many countries in Europe, beavers have recently been reintroduced to the UK, with the first trial reintroduction taking place in Scotland in 2009. Today they are once again considered a natural component of the Scottish fauna and are now protected. However, as they have been absent from the UK landscape for so long, there is a paucity of data on how they may affect other fauna and flora, including economically important freshwater fish.

The University of Southampton's Professor Paul Kemp, the project lead, said, "This is the first published research of its kind conducted in the UK. Most of our understanding of beaver-fish interactions is based on North American studies which involves a different species of beaver, and different species of fish. The results of this study are important because it is hoped that they will allay fears expressed by some representatives of fisheries interests that beavers may be damaging to fish stocks."

The study's findings are significant because reintroductions and natural recolonisations are gaining pace in Scotland, England and Wales.

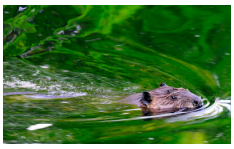
The GWCT's **Dylan Roberts**, continued**:** "The fact that numbers of larger trout responded positively to pools created by the beavers is good news. However, there is still much to learn to see if their dams impede the upstream migration of adult salmon and trout on their way to spawning grounds and the downstream migration of juvenile fish."

Dr Martin Gaywood, NatureScot's Species Projects Manager, said: "We continue to work with stakeholders, including fishery groups, to identify the many complex ways beaver interact with our environment, make the most of the many benefits beavers can bring to nature and us, and explore ways to mitigate problems when necessary. This research is an important contribution to this process."

The paper 'The response of a brown trout (*Salmo trutta*) population to reintroduced Eurasian beaver (*Castor fiber*) habitat modification' is published in Canadian Journal of Fisheries and Aquatic Sciences.

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Notes to Editors

1) For more information or interviews, please contact Peter Franklin, Media Relations, University of Southampton. Tel 07748 321087 Email: p.franklin@southampton.ac.uk . For enquiries relating to the Game & Wildlife Conservation Trust (GWCT) please contact Kate Williams at kwilliams@gwct.org.uk .

2) Robert Needham was funded by the NERC SPITFIRE Doctoral Training Partnership (DTP) hosted at the University of Southampton. SPITFIRE creates an innovative multi-disciplinary experience for the effective training of future leaders in environmental science, engineering, technology development, business, and policy.

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3) Game and Wildlife Conservation Trust: Providing research-led conservation for a thriving countryside. The GWCT is an independent wildlife conservation charity that has carried out scientific research into Britain's game and wildlife since the 1930s. We advise farmers and landowners on improving wildlife habitats. We employ 22 post-doctoral scientists and 50 other research staff with expertise in areas such as birds, insects, mammals, farming, fish and statistics. We undertake our own research as well as projects funded by contract and grant-aid from Government and private bodies. The Trust is also responsible for several Government Biodiversity Action Plan species and is lead partner for grey partridge and joint lead partner for brown hare and black grouse. www.gwct.org.uk

4) The University of Southampton drives original thinking, turns knowledge into action and impact, and creates solutions to the world's challenges. We are among the top 100 institutions globally (QS World University Rankings 2022). Our academics are leaders in their fields, forging links with high-profile international businesses and organisations, and inspiring a 22,000-strong community of exceptional students, from over 135 countries worldwide. Through our high-quality education, the University helps students on a journey of discovery to realise their potential and join our global network of over 200,000 alumni. www.southampton.ac.uk

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