River Otter Beaver Trial: Project Update 2020

Devon Wildlife Trust

River Otter beavers here to stay

On 6 August 2020, Environment Minister Rebecca Pow MP made the momentous decision that the River Otter beavers could stay*. This marked the first re-introduction of a native mammal to England.

The decision is a huge tribute to the community that live and work in the River Otter valley. The success of the River Otter Beaver Trial shows the importance of a community coming together to discuss sometimes complex issues. Where conflicts have arisen, they have been shown to been low in comparison to the level of inspiration and excitement generated by the beavers in the local area, and the many benefits provided.

Following a short extension of the Trial to consider the evidence presented, Defra concluded that the Trial had been a success, and that the beavers could remain and would be allowed to spread naturally to neighbouring river catchments. A similar decision was made in Scotland, following the end of the Scottish Beaver Trial in 2014.

**Although beavers are a native species, hunted to extinction in Britain around 400 years ago, they were not legally regarded as 'ordinarily resident' and cannot be released into the countryside without a licence.*

An adult female beaver living near Otterton provided amazing views for beaver watchers along the riverbank during the summer evenings. Photo Nick Upton.

The beavers' story

When Tom Buckley from Ottery St Mary first captured film of beaver kits on the River Otter in 2013, he had no idea where it would lead. The local wildlife expert had set his camera traps near to some characteristically felled willow trees, in order to confirm the very unlikely prospect that beavers were actually living wild on his local river. Not only did his footage confirm the presence of beavers, but that they were breeding. However, as the startling news spread, it soon caught the attention of government officials who decided to step in….

Because the beavers' origin was unknown, government vets raised questions about whether they could be harbouring a parasite found in mainland Europe. In 2014, they proposed removing the animals, but by this time the residents of Ottery St Mary had become very attached to 'their' beavers, and objected to this plan. A campaign grew; children from local schools wrote letters to their MP, and posters could be seen along riverside footpaths.

Meanwhile on the other side of the county, the Devon Wildlife Trust (DWT) had been running an Enclosed Beaver Project to study the impacts of a family of this native 'keystone' species on local ecosystems and watercourses. With the knowledge gained from this work, and an understanding of just how significant beavers are for healthy wetland ecosystems, DWT decided to enter the debate on whether East Devon's wild beaver population should stay. Eventually a solution with the Department for Environment, Food and Rural Affairs (Defra) was brokered. DWT would be allowed to establish a 5-year trial to understand the real-life impacts of the beavers in this productive lowland English landscape.

A partnership involving Clinton Devon Estates and the University of Exeter was established to run the Trial, with input from local beaver expert, Derek Gow. In February 2015, the beavers were trapped, disease-tested and given a clean bill of health by the Animal and Plant Health Agency. A licence was then granted by Natural England for their re-release. The River Otter Beaver Trial had begun.

The River Otter Beaver Trial published two key documents that outlined the findings of the Trial:

ROBT Science and Evidence Report

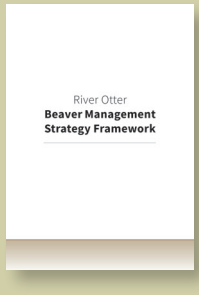
The research carried out during the Trial was co-ordinated by Professor Richard Brazier in his role as the chair of the Science and Evidence Forum. At the conclusion of the Trial, the Forum published a detailed Science and Evidence Report, which summarised the findings of many different aspects of the Trial, as well as a series of case studies. The University of Exeter also published a number of academic papers in peer reviewed journals, and these, along with a range of other supporting documents, were collated and presented as appendices on the University of Exeter website.

The findings of this report are summarised inside this 2020 Update newsletter:

www.exeter.ac.uk/creww/research/beavertrial/

Throughout the Science and Evidence Report, there are many links to video clips showing beaver behaviour and other things which help explain aspects of the Trial's findings. These have been collated as a playlist on the DWT YouTube page here:

www.youtube.com/playlist?list=PLSa195l9ns_iAGhm_ccfAA9k9UDAhwlO_



The Beaver Management Strategy Framework

As the Trial progressed, it became clear that the reintroduction of beavers would require there to be a framework in place for the ongoing interventions and management that are required to live alongside this natural water engineer. The Steering Group convened a specialist Working Group to develop the Beaver Management Strategy Framework for the River Otter which would outline how this could work in the event that the beavers were permitted to remain beyond 2020.

It proposes that management will be approached via a hierarchy of actions of increasing impact:

- Education,
- Risk avoidance,
- Mitigation,
- Trapping and removal

www.bit.ly/2GxYktE

The Beaver Management Strategy Framework and all its the supporting appendices, the five annual reports, and other background information can all be viewed on the DWT website here:

www.devonwildlifetrust.org/what-we-do/our-projects/river-otter-beaver-trial

Additional government decisions are needed

The members of the Steering Group feel that clarity is now required on the legal status of beavers in England, details of the governance and funding for future beaver management, and financial and other support for land and property owners, and other rural businesses.

A strategy is also needed to propose an approach to further reintroductions elsewhere, including where other wild populations currently exist on rivers like the Tamar, and the Stour in Kent.

We anticipate that a government consultation will soon be launched that will cover these and other questions.

What happens on the River Otter now?

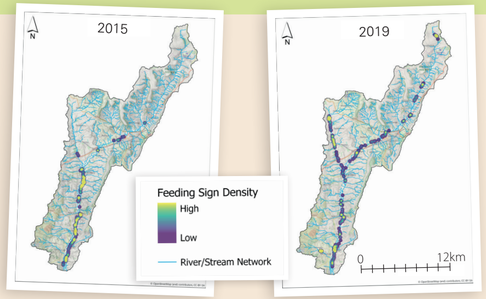
Until these decisions are made, and hopefully beyond, the support for landowners and other members of the local community continues. With interim funding from Defra now confirmed, Devon Wildlife Trust will continue to provide expert support to the people that live and work in the valley. This have proved instrumental in demonstrating that beavers and people can live successfully alongside each other.

If you are a landowner where beavers are living and would like advice and support, please contact River Otter Field Officer, Jake Chant on 07388 946022. JChant@devonwildlifetrust.org

For any other queries about the River Otter Beavers or DWT's other beaver work, you can email beavers@devonwildlifetrust.org

What the Trial discovered

The 5-year research programme, overseen by Professor Richard Brazier from University of Exeter has told us a lot about these amazing semi-aquatic rodents, and how they interact with their environment on the River Otter....



The River Otter is able to sustain a healthy, expanding beaver population

The beaver population has increased significantly from two founding family groups in 2015, to around 13 territories established by 2019. Only three mortalities were confirmed during the study period with the population dispersing throughout the main stem of the River Otter and its main tributary, the River Tale, as well as into some smaller tributaries.

Beavers are popular

Surveys conducted locally and nationally by University of Exeter researchers in 2017 found that 86% of 2,741 people supported beaver reintroduction. In 2019, repeat surveys found that 90% were supportive (386 people surveyed). When asked about legal protection if beavers were to be formally introduced, 75% felt there should be strong legal protection, 20% said limited legal protection and 5% said none in 2017. By 2019 this was 79%, 17% and 4% respectively.

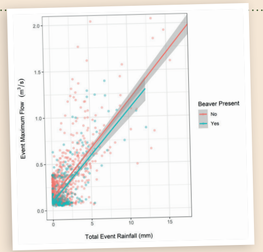

Photo: Steve Pease

Beavers don't build dams everywhere

Beavers are unable to build dams in larger more powerful watercourses. Beaver Dam Capacity (BDC) modelling by University of Exeter shows which watercourses are capable of sustaining beaver dams. A snapshot of all dams in October 2019 across the River Otter's catchment identified 28 dams in six of the beaver territories, with their locations in line with the findings of the BDC model. No dams have been constructed in the main stem of the River Otter, and dams in the smaller tributaries are more dynamic and temporary features due to the high stream flows. Of the 594 km of watercourse within the River Otter catchment a total of 1.9 km (0.3%) was impounded by beaver dams.

Beaver wetlands can reduce flood risks for people downstream

A sequence of beaver dams constructed upstream of a village with properties at risk of flooding has seen a reduction in peak flows as a result of beaver dams. Hydrologists from University of Exeter have used long term data from an Environment Agency gauging station to plot the height of flood events before and after beavers were present. (Each dot on this graph is a flood event.) The plots show a measurable reduction in peak flows as the beaver-created wetland slows the flow of water downstream.



Fish populations enhanced

Impacts of beaver dams on fish have been studied by experts from the University of Southampton who carried out detailed surveys in one area where beaver dams have been regularly built and washed away. Surveys found total abundance in a beaver pool was 37% higher than the other three reaches surveyed, with highest total fish biomass and more trout than in either the upstream or downstream control sites. The shallow, swift-flowing conditions created where a previous beaver dam had washed away, also showed evidence of successful spawning with abundant juvenile trout using the loose clean gravel beds. The number of minnow and lamprey were also markedly greater in comparison with the other reaches.

Some impacts on agriculture

Beaver activity in five sites has impacted land-drainage for agriculture on floodplains, necessitating the need for management interventions. The most significant financial impact was on 0.4 ha of organic potato crop where raised water levels restricted the farmer's machinery access. In three territories, beavers have been recorded feeding on maize, and appear to have built dams to access it when the crop is planted close to watercourses.

Few effects on water infrastructure

Monitoring of Environment Agency infrastructure has recorded no beaver related impacts. Beavers have become established in a water supply reservoir, and routine work by volunteers has been required to keep a spillway clear. Elsewhere, two small culverts have seen beaver activity, with one requiring regular low-level management.


Photo: David White

Great for other wildlife

The effect of beaver engineering and feeding has delivered significant ecological benefits with new areas of wetland habitat created and managed, with documented benefits for amphibians, wildfowl such as this teal, and water voles. The changes in scrub canopy structure and increased water levels have enhanced a wetland County Wildlife Site. There have been no measurable impacts on any statutory designated sites.

Occasional effects on highways and footpaths

There were three incidents of trees being felled onto footpaths, and these were all cleared quickly by the landowner, Clinton Devon Estates. One small country lane and another access track were flooded by adjacent beaver dams, requiring the height of the dams to be lowered periodically.


Photo: Ed Lagdon

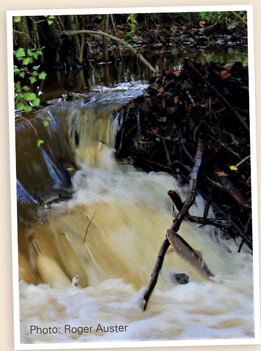


Photo: Roger Auster

Fish recorded jumping dams

With so few dams coinciding with salmon and sea trout migration, there were no opportunities to properly investigate the issue of migrating fish in this 5-year trial. Although large trout were seen and filmed jumping beaver dams in high flows, it's likely that during drier conditions, some dams could be an obstacle to the free movement of fish. However, the key question is whether any localised obstacles outweigh the huge potential that dams have to create the habitats for fish populations to thrive in.

Beavers healthy and thriving

Detailed health monitoring of the beavers by vets and zoologists took place at start of Trial and continued throughout. This concluded that the beavers present no significant risk to human, livestock, or other wildlife health. Routine checks of the health and physical condition of the beavers clearly shows they are healthy and thriving. During the Trial five additional beavers were introduced to enhance the genetic diversity of the population.

Catchment could support many more beavers

Work by University of Exeter scientists looked at the capacity of the catchment and concluded that maximum number of territories that the catchment could support was between 149 and 179. As the beaver numbers increase and start to approach this theoretical maximum carrying capacity, they manage their own numbers with dispersing 2-year olds being particularly vulnerable to attacks from other beavers. It is also likely that the beavers would be coming into greater conflict with different land-users before this ecological limit is reached.

Effects on trees and woodlands minimal

Throughout the Trial, annual winter surveys of beaver feeding on woody trees and shrubs showed that more than 70% selected by beavers were willows. The vast majority were on, or very close to the water's edge. There were no recorded impacts on any forestry plantations, but small riverside orchards have seen beaver feeding on both windfall apples and the trees themselves, and these need to be proactively protected to avoid damage.

Benefits outweigh costs

A summary of the overall costs and benefits of beaver reintroduction demonstrates that the ecosystem services and social benefits accrued far outweigh the financial costs incurred. However, it was shown that those who benefit from beaver reintroduction may not always be the same people as those who bear the costs.

The River Otter Beaver Trial was led by Devon Wildlife Trust working in partnership with The University of Exeter, the Derek Gow Consultancy, and Clinton Devon Estates. This Management Group are grateful to the following people who generously committed to sit on the Steering Group to guide the Trial through the five years.

Harry Barton, Devon Wildlife Trust (chair)
Sir Charlie Burrell, Beaver Advisory Committee for England (BACE)
Ann Maidment, CLA
Charles Fane Trefusis and John Varley, Clinton Devon Estates
Peter Chamberlain, Devon County Council
Sue Goodfellow, Devon Local Nature Partnership
Peter Burgess and Mark Elliott, Devon Wildlife Trust
Chris Woodruff, East Devon AONBs
Tim de Winton and Elly Andison, Environment Agency
Mike Swan, Game and Wildlife Conservation Trust
Michaela Barwell, Natural England
Prof Alastair Driver, Rewilding Britain
Paul Knight, Salmon and Trout Association
Roger Furniss, SW Rivers Association / Angling Trust
David Smith, South West Water
Paul Cottington, National Farmers Union
Prof Richard Brazier, University of Exeter
Prof John Gurnell, University of London / BACE

Expert independent advice was also provided throughout by the Royal Zoological Society of Scotland, Dr Roisin Campbell-Palmer and Gerhard Schwab.

We are also grateful to the members of the Community and Education Forum, The Fisheries Forum and the Science and Evidence Forum for their considerable expertise and guidance throughout the Trial period.

A significant part of the River Otter catchment lies within the Blackdown Hills Area of Outstanding Natural Beauty (AONB). In September 2020 DWT was awarded a grant to continue our work with landowners and communities in the area, increasing the capacity of the community to live alongside beavers once again.

Supported by the Blackdown Hills AONB Sustainable Development Fund

Blackdown Hills Area of Outstanding Natural Beauty

defra

The River Otter Beaver Trial has been supported by The Peter De Haan Charitable Trust, The Royal Society of Wildlife Trusts, Garfield Weston Foundation, Wellcome Trust, Natural Environment Research Council, the Tale Valley Trust.

Plymouth City Council have also contributed to the socio-economic work, and the Environment Agency and Wessex Water have funded the installation of monitoring equipment.

Funding from the Department for Environment, Food and Rural Affairs (Defra) was provided to extend the Trial so that a government decision could be made. This support is continuing to provide time for wider decisions to be made about future funding and management models.

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