WYLYE FLY FISHING CLUB

European Beaver *(Castor fiber)*

Background

The European or Eurasian beaver was once widespread in Great Britain but until recent reintroductions, has been absent for some 400 years. Beaver have not been recorded in Ireland.

In England and Wales, you must apply for a licence if you plan to release species listed in schedule 9 of the Wildlife and Countryside Act. Of those released under licence, monitoring has shown they can spread quickly once population pressures reach a certain threshold. However, both the pattern and rate of the spread of wild beavers indicates a relatively strong influence of unlicensed releases, a practice known colloquially as "beaver bombing".

Whether licenced or unlicensed, beavers are now protected by law as a European Protected Species in England and Scotland. This means it is now against the law to:

- deliberately injure, kill, capture or disturb beavers
- damage or destroy a beaver breeding site or resting place such as a burrow, lodge or associated dam
- keep a beaver or parts of a beaver you have taken from the wild
- transport a beaver
- sell or exchange, or offer a beaver for sale or exchange

Beavers are 'ecosystem engineers', and a keystone species, likely to enact significant changes to their environment. These changes can be beneficial, providing significant benefits for flow regulation, water quality, habitat diversity, and in many cases creating new and valuable wetland habitats. However, these changes also have the potential to cause conflict or even harm depending on the socio-economic and environmental constraints of their immediate environment. Impacts may include damage to trees, property or farmland, locally increased flood risk, and risks to fish passage. These issues are likely to be most acute where existing constraints, such as man-made river modifications, already present significant challenges.

The landscape of 400 years ago was quite different to that of 21st century Britain. Intensive agriculture, urbanisation and infrastructure have changed the hydrology of our catchments; fish passage is hindered by tens of thousands of man-made barriers; and hundreds of thousands of kilometres of river have been channelised, dredged, bunded or otherwise denuded of natural process and habitat. In some places, beavers may have vital roles to play in restoring our river ecosystems, reinstating natural processes, reconnecting floodplains and restoring long-lost wetlands. In other places, modified river environments may be inappropriate for beavers, lacking resources, space, or habitat, and requiring significant restoration before they can accommodate beavers. In some situations, the risk to local properties, infrastructure or even certain protected species/habitats may be too great to ever accommodate unmanaged beaver behaviour.

WFFC waters, like many chalk streams in the Wessex region, are situated within a mosaic of designated, heavily protected, and managed habitats. Some of the landowners within the Wylye Valley are actively exploring large-scale wetland restoration as part of a successful Landscape Recovery bid. Beavers may provide some ecological synergies to this endeavour. However, our landscape is also interspersed with a high number of historic mills, low bridges, and low-lying riparian properties. As such, it is likely that we will require a bespoke and localised approach to beaver management in. Maximising the potential benefits, and avoiding or mitigating the potential risks, will

likely require both reactive (alteration of beaver-made structures) and pro-active management (protection of at-risk trees, structures/building etc.).

The science

Several studies have examined the ecological impacts of beaver reintroduction. Those most relevant to England include:

- Paul S Kemp et al (2012). *Qualitative and quantitative effects of reintroduced beavers on stream fish.* Fish and Fisheries 13 158-181
- Beaver Salmonid Working Group (2015). *Final Report of the Beaver Salmonid Working Group*. Prepared for The National Species Reintroduction Forum, Inverness.
- NatureScot (2015) *Beavers in Scotland - A report to Scottish Government*
- Brazier, R.E. et al (2020). *River Otter Beaver Trail Science and Evidence Report*
- Cowx, I.G., (2021). *Review of the evidence of interactions between beavers and fish and fisheries in England and Wales*
- Needham, R.J., *The response of a brown trout (Salmo trutta) population to reintroduced Eurasion beaver (Castor fiber) habitat modification*. Can. J. Fish. Aquat. Sci. 00: 1–11

Conclusions vary between studies. However, a review of the literature undertaken by Wessex Rivers Trust noted the following:

- **Bias/ Data**
  - 95% of beaver literature is based on North America.
  - Positive impacts are cited more in the literature than negative ones.
  - Many studies emphasise impediment to fish movement as the main negative of beavers. However, of the studies looked at 74.8% of those were based on speculation rather than quantitative data.
  - Very few studies are based in the UK. Those that are, have short timescales not reflecting the time it takes few beavers to reach carrying capacity (up to 40 years).
  - All UK studies are so far based on relatively low beaver population densities.
  - No UK studies have been undertaken in urban or chalk stream catchments.

- **Conflict**
  - In both the United States and Europe, reintroduced animals continue to act as a source of conflict and in some cases are killed by opposing factions.
  - Financial impacts are currently borne on the landowner as there is no mechanism to delegate costs.
  - Ecotourism and the rural economy are over-represented compared to agricultural and private landowners.

The Wild Trout Trust has an excellent Beaver Resource Hub which explores the science, management, benefits, and conflicts associated with wild beavers. WTT's own analysis of the potential impacts of beaver dams on trout found more positive impacts than negative, but recognise that each case will be site-specific.

"In summary, the science shows that beavers are not wholly bad or wholly good for rivers, for trout, for flood management and wildlife generally. A great deal depends on where the beavers live, particularly the nature of the habitat and what management is undertaken to mitigate any problems."
https://www.wildtrout.org/content/beavers-and-trout

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Things to consider for WFFC waters

- Beaver dams are rarely constructed on main rivers and therefore we would see most impacts in headwaters and small streams.
- Currently the evidence suggests that beavers do not negatively affect European eels, lamprey, water voles or otters.
- Beavers are currently not considered to present any biosecurity or health risk to humans, livestock, and wildlife.
- The River Otter study did encounter beavers feeding on an adjacent maize fields. This could make Beat A attractive to them at certain times of the year.
- Beaver pools can create higher water temperatures and particularly effect species that are already at their upper thermal tolerance.
- Beavers exhibit a preference for making dams in low gradient systems (which chalk stream are), though depth is usually the greatest factor determining the behaviour.
- Beaver's dams can have significant effects on fish movement in low flow years.
- Systems that have poor lateral (floodplain) connectivity, due to modifications (such as historic dredging or bunding), result in beavers creating larger dams to overcome this.
- Management options are available, as is support from nearby licence holders.
- WFFC maintains excellent relationships with the WFA, Wiltshire Wildlife Trust and Wessex Rivers Trust, meaning professional help and support should be easy to access if required.