

A positive future for beavers in Scotland

On 24 November 2016 a decision that had been long-awaited by conservationists was announced, when the Scottish Government recognized the European beaver (*Castor fiber*) as a native species in Scotland (Scottish Government news, 2016). This gave official approval for the populations of beavers at Knapdale in Argyll (from the Scottish Beaver Trial: Iason *et al.*, 2014; Harrington *et al.*, 2015) and on Tayside to remain as wild and free animals in the country. It was especially significant as it confirmed the reinstatement of the first of Scotland's missing mammal species – previously only birds such as the sea eagle and red kite had been officially reintroduced. It also means that Scotland has taken a positive step towards fulfilling both its formal responsibilities under the EU's Habitats Directive (whereby member states are obliged to investigate the feasibility and desirability of reintroducing extirpated species) and the moral imperative of redressing the eradication by humans of one of the country's native mammals.

As a keystone species in freshwater aquatic and riverine systems, the beaver has been shown to provide tangible ecological benefits for a whole host of other species. The ponds and pools created by its small dams provide ideal breeding sites for a range of aquatic invertebrates, which are eaten by fish, amphibians, bats and predatory insects such as dragonflies. Those in turn are food for various birds and mammals including the European otter (*Lutra lutra*). The felling of trees such as willows (*Salix* spp.) and aspen (*Populus tremula*) by beavers stimulates the growth of new shoots through natural coppicing and suckering respectively, bringing a renewal of growth to riparian woodlands while simultaneously creating a source of

dead wood, which is the habitat for many specialist decomposer organisms.

Beavers play a crucial role in the regulation of water flow in rivers and streams, and their absence in the UK for several hundred years has compounded the problems of flooding that have been caused by widespread riparian deforestation. Beaver dams slow down and reduce the flow of water at times of heavy rainfall, while during periods of drought the water held in the ponds and pools provides a sustained flow that would otherwise be much less. This reduction of the peaks and troughs of water flow also potentially reduces the need for expensive flood mitigation measures downstream (Elliott *et al.*, 2017).

While it's great news that beavers are here to stay in Scotland, their longer-term future still needs to be secured. The population at Knapdale in Argyll is small and geographically isolated, with no opportunity for expansion of its range from there. Given the few animals in the founding population, it is not genetically viable for the long term, and additional beavers need to be brought in, to broaden the genetic base. Similarly, the population on Tayside has grown from a very small number of individuals and its enhancement with animals from different sources is necessary.

Beyond that, to ensure that beavers have a viable future in Scotland, further populations need to be established in other parts of the country. These will help to create a broader genetic base for the species in Scotland. They'll bring the ecological benefits to more of the country's river basins and catchments, and will also provide the back-up of additional colonies in the event that anything disastrous were to happen to the existing populations.

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About the author

Alan is the Founder of, and visionary behind, Trees for Life, a charity based in Findhorn, UK.

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Keywords

Rewilding; species reintroductions

In their announcement last November, the Scottish Government made no reference to further possible licensed reintroductions of beavers, so it is uncertain what their thinking is about the ecological future of the species here. Trees for Life plans to test the waters by preparing an official application for a reintroduction of beavers to the Highlands north of the Great Glen – a region that it would take the existing populations a long time to disperse into – and is currently running an appeal to raise funds for this, which can be supported here: <https://is.gd/4Jd3uM>. By bringing beavers back home to the Highlands, we will be helping to create a positive future both for the species itself in Scotland, and for our riparian and freshwater ecosystems. Those habitats and beavers

have co-evolved together over long periods of time, and reuniting them again now will benefit both. ■

References

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Fundraising effort

Trees for Life plans to test the waters by preparing an official application for a reintroduction of beavers to the Highlands north of the Great Glen, and it is currently running an appeal to raise funds for this, which can be supported here: <https://treesforlife.org.uk/support/donate>

by **Priyanka Jena**

Higher-resolution version: <https://is.gd/ecoartwork>

Original: A textile piece based on slow stitch.

About the work: On the theme of rewilding Britain, this work illustrates the difference between a region with excessive unnaturally high grazing pressure, which has been reduced to simple grassland, and a region where more natural habitats have developed from ecological restoration through the reintroduction of keystone predators.

