

BEAVER HABITAT FEASIBILITY STUDY

This academic poster outlines how the habitat feasibility study for the reintroduction of Beavers in Lake Ennerdale was analysed.



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INTRODUCTION

Beavers lived in Britain up until the 17th century until they were hunted to extinction for their fur (Holmes et al., 2024). Beavers are ecosystem engineers by building dams which retain ponds. These ponds are full of nutrients, wildlife and plants which enhance biodiversity (Rosell & Campbell-Palmer, 2022). In 2020, a feasibility study for habitat suitability was conducted for Eurasian Beavers in Ennerdale in the Lake District (Brazier et al., 2020). A habitat feasibility study is the first step of a reintroduction project (IUCN, 2013). It analyses whether a habitat is suitable for the target species, assessing factors such as mortality risk, shelter and food availability. These studies are critical because without them, ecologists cannot determine whether a species would survive in the chosen habitat.

OBJECTIVE

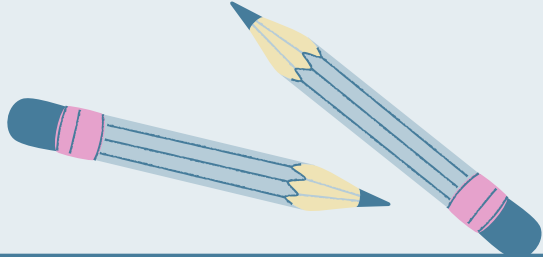
To evaluate the ecological thoroughness and suitability of the Ennerdale feasibility study for the reintroduction of Eurasian beavers.

METHODOLOGY

Several factors were investigated, including whether the study addressed all aspects of beaver ecology and how thoroughly each element was tested. Seven sites were assessed using a Beaver Habitat Index model, measuring vegetation, hydrology and dam capacity (Puttock et al. 2016). GIS mapping and ecological modelling were combined to produce suitability scores (Armstrong & Seddon, 2008).

RESULTS

The habitat feasibility study was very thorough in assessing whether Lake Ennerdale was suitable for beaver reintroduction. The study comprehensively tested each potential site for several ecological factors beneficial to beavers. The study found strong potential in the lower valley for a managed release due to stable water levels and wider watercourses. GIS was also used to analyse water catchments, contributing to a multidisciplinary approach that strengthened the evidence base.



ANALYSIS

A reoccurring challenge was livestock grazing. This was a problem because it reduced vegetation structure across multiple sites. As a result, there would be less forage potential for beavers. However, removing livestock would require consent from landowner which may or may not be approved. If it was to be approved, it would still be a gradual process which may delay the time for reintroducing the beavers. One of the sites that was deemed unsuitable was Ashcrag Holme due to this grazing issue but also flood risk. Overall, grazing pressure was the most consistent limitation across sites, directly affecting vegetation availability essential for beaver survival.

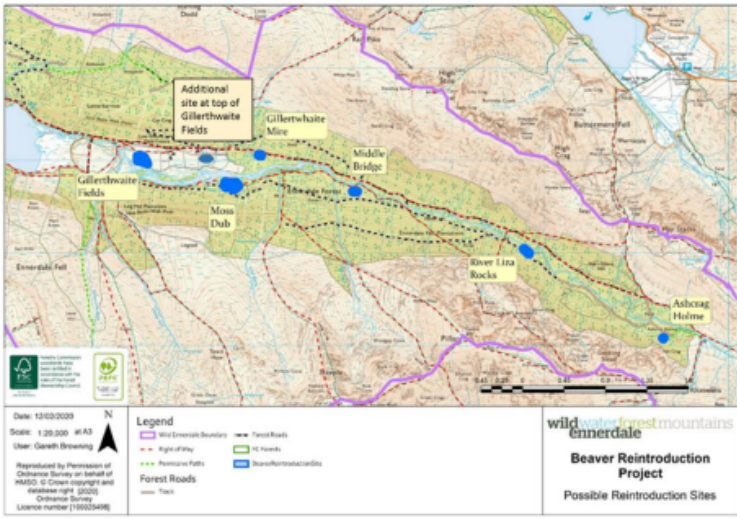


Figure 1: Sites identified for consideration by Forestry England (Brazier et al., 2020).



Figure 2: BHI model output for the wider area of interest.

CONCLUSION

In conclusion, the study thoroughly assessed habitat, hydrological and ecological factors. Most of the sites contained potential for reintroduction, with the main limiting factor being livestock grazing. The study concluded that future reintroduction is feasible, provided grazing pressures are managed.

References

Brazier, R. et al. (2020) Ennerdale: Feasibility for Beaver Reintroduction. Available at: <https://www.wildennerdale.co.uk/wp-content/uploads/2021/07/Wild-Ennerdale-Beaver-Ecology-Feasibility-Study.pdf>.

Holmes, G. et al. (2024) 'Eager about beavers? Understanding opposition to species reintroduction, and its implications for conservation', *People and Nature*, 6(4), p. 1525. Available at: <https://doi.org/10.1002/pan3.10674>.

Rosell, F. and Campbell-Palmer, R. (2023) 'Beavers: Ecology, Behaviour, Conservation, and Management', *Journal of Wildlife Management*, 87(6). Available at: <https://doi.org/10.1002/jwmg.22420>.

IUCN (2013) Guidelines for Reintroductions and Other Conservation Translocations. Available at: <https://portals.iucn.org/library/efiles/documents/2013-009.pdf>.

Puttock, A. et al. (2016) 'Eurasian beaver activity increases water storage, attenuates flow and mitigates diffuse pollution from intensively-managed grasslands', *Science of The Total Environment*, 576. Available at: <https://doi.org/10.1016/j.scitotenv.2016.10.122>.

Armstrong, D.P. and Seddon, P.J. (2008) 'Directions in reintroduction biology', *Trends in Ecology & Evolution*, 23(1). Available at: <https://doi.org/10.1016/j.tree.2007.10.003>.

