

Consultation:	Species Reintroduction: Call for Evidence		
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Species Reintroduction: Call for Evidence

Response by ADA (Association of Drainage Authorities)

Introduction

About ADA

1. The Association of Drainage Authorities (ADA) is the membership organisation for drainage, water level and flood risk management authorities throughout the United Kingdom, including internal drainage boards (IDBs). IDBs are public bodies that manage water levels in lowland areas where there is a special need for drainage. Today, there are 112 IDBs in England whose districts cover 1.2 million hectares (9.7% England's landmass).
2. ADA is primarily concerned with the sustainable management of water levels, flood risk and water resources. Many parts of the UK are reliant on careful management to prevent flooding or water logging of soils which can increase subsidence to properties and infrastructure. Lowland areas, such as the Fens and Somerset Levels; are dependent on thousands of kilometres of watercourses, from large embanked rivers, that may be perched several metres above the surround lowland, to smaller drainage ditches that are critical to conveying water to pumping stations and outfalls.

Reasons for submission of evidence

3. We are responding to this call for evidence to highlight the potential consequences to the management of flood risk and water levels from species reintroductions within the UK. In ADA's view any such reintroductions must be accompanied by adequate long-term framework of guidance, robust regulation, support from those communities whose land, property and infrastructure will be impacted, and funding for the management and mitigation of those impacts. Consequently, ADA's evidence herein focuses upon the reintroduction of the Eurasian beaver (*Castor Fiber*) that poses specific risks to lowland water level management and flood risk.
4. ADA does recognise that in the right places and with the right safeguards beavers do have the potential to play a part in natural flood management, helping to attenuate more frequent lower consequence rainfall events and improving water quality, hydromorphological diversity, and biodiversity. This is particularly applicable within the upper reaches of our catchments where there are minimal or no flood risk or water

management structures and where negative consequences downstream from woody debris and beaver activity can be adequately mitigated.

5. However, extensive lowland areas in England, such as the Fens, which contain a multitude of artificial and heavily modified watercourses and flood defence infrastructure and embankments are likely to face the greatest negative consequences from the introduction of beavers.

Evidence regarding Eurasian beaver and their impact to lowland watercourse and flood risk management infrastructure

6. ADA is concerned about the activity of beaver to dig in the banks of watercourses, creating tunnels and large voids that could undermine embankments, resulting in piping and embankment collapse or slumping, especially during heavy rainfall/high flow events. This can result in blockages to watercourses, or more significantly the failure of flood embankments. In a lowland catchment this can put extensive areas of land at risk of flooding, impacting: people, businesses, agricultural production, environment and infrastructure. This is already a risk for existing burrowing mammals (e.g. badgers), but made more complicated with beavers owing to their size and their ability to dig tunnels from below the waterline, making their presence harder to detect.
7. ADA is also concerned about other risks posed by beavers in lowland catchments such as the risk of large woody debris becoming dislodged and floating downstream damaging flood defence and water control assets such as pumping stations, sluices, and blocking culverts, bridges, etc and also to other infrastructure such as damage to railway embankments and the six million trees along 16,000 miles of railway in England and Wales.
8. Consequently, ADA considers that beaver populations in a number of England's lowlands could risk significantly increasing the costs of those Risk Management Authorities and riparian owners managing flood and water level management infrastructure. Beavers are known to target earth structures close to water in creating their lodges/dens. Burrowing by reintroduced beavers in lowland areas in Europe and Scotland, has led to increased erosion and bank collapse, and dam building and felling activity can obstruct watercourses.
9. Damage to watercourses and flood embankments in lowland areas has the potential to cause extensive flooding in these areas without close monitoring, prevention, management and repair. Any threat to the integrity of lowland embankments and watercourses could have adverse consequences to people, communities, infrastructure and the local environment and economy if an embankment breach or pumping station failure were to occur.
10. In Wainfleet, Lincolnshire, an embankment failure as a consequence of intense rainfall and high river flows in June 2019 resulted in flooding to ~550 hectares of agricultural land, ~130 properties, and the evacuation of ~590 people. It resulted in a major multiagency emergency response to prevent further inundation of other lowland critical

infrastructure by IDBs, fire and rescue services, the Environment Agency, and the Royal Air Force.

11. As well as containing the majority of England's most versatile and productive agricultural land, internal drainage districts in England contain over 880,000 properties, 40 caravan/leisure parks, around 70 major industrial premises, 40 of England's major electricity generation sites, which equate to around 50% of England's installed electricity generating capacity, 400 SSSIs, hundreds of water treatment and sewage works, 210km of motorway, and 1,450km of railway.

Consideration of long-term impacts

12. To date ADA is concerned that the proposed approach to beaver reintroductions has not sufficiently considered the long-term management of beavers within the landscape, especially within extensive lowland areas.
13. Any beaver reintroduction should look at the full impacts of the spread of the species out of reintroduction areas. ADA considers that this needs to be considered over a longer timeframe than the initial reintroductions (beyond twenty years), to ensure that sufficient guidance for preventing, mitigating and repairing beaver damage is available for water managers. Management and guidance must sit within a suitably enabling regulatory framework that enables quick, cost-effective response options to Risk Management Authorities and riparian owners where unacceptable levels of damage are occurring.
14. Where the presence of beavers presents a new burden to public authorities, such as IDBs, the government needs to consider how beaver impacts can be properly funded in the long term. IDBs have no spare capacity within their existing budgets to be able to finance the repairs of damage caused by beavers to watercourses and flood and water level management infrastructure, especially if they are to meet the growing challenges being raised by our changing climate. IDBs could be ideally placed to manage any consequences of beaver damage in lowland areas if they were to be provided with a funding mechanism to support such work. This could be linked to longer term benefits of revenue funding and grant support for enhancing the environment. Currently IDBs are not centrally funded for environmental work, nor are they typically eligible as public bodies for grant funding for the agricultural or environmental sectors.
15. Once introduced it is likely that beavers will spread and naturalise throughout river catchments, including downstream lowlands. Natural England's recent study (A review of the evidence on the interactions of beavers with the natural and human environment in relation to England [NEER017]) highlighted that the economic cost from conflicts caused by beaver reintroduction is most likely to be higher on lowland arable agricultural land, and that such lowland regions in England will require the greatest management of beaver impacts. Specifically, it highlights areas with high proportions of Agricultural Land Classification Grades 1 and 2 land, such as Cambridgeshire, East Riding

of Yorkshire and Lincolnshire. Further research is therefore required to look further at the impacts beavers pose to lowland water level management in other parts of Europe.

16. In circumstances where beavers have escaped from existing enclosures in England (e.g. River Stour, Kent) we understand that there has been limited success in re-capturing or controlling these populations. Therefore, ADA is concerned that any further future reintroduced populations would also be difficult to control or capture if they spread into unfavourable lowland areas. ADA suggests that wider engagement with a geographically broader group of stakeholders is needed prior to any reintroductions, especially those further downstream involved in managing the water environment (e.g. all Risk Management Authorities within the wider catchment), to ensure that suitable mitigation and management plans are put in place.
17. Direct experience of the effect of beaver reintroduction has been felt by one of ADA's members, the Pow of Inchaffray Drainage Commission in Strathearn, Perthshire. Evidence of the problems encountered there by the Commissioners can be read on page 20 of the Spring 2021 ADA Gazette (available from <https://www.ada.org.uk/communications/gazette/>).
18. Beavers are known to breed rapidly, populations in the Netherlands have spread across most of the country since being reintroduced in the Biesbosch nature reserve in 1988. Within a relatively short period of time, beaver populations in England could reach a point where their disruption to peoples' lives, the economy and the wider environment could be significant in some areas. There is emphasis upon short term engagement, consultation and management within the proposals over only five to ten years and ADA would propose a longer-term engagement horizon to mitigate longer term impacts as any new beaver populations spread.

Ensuring a framework for long term management

19. ADA considers that the detailed framework for the long-term management of beavers should be drafted with the close collaboration of all interested parties, notably Risk Management Authorities and agriculture, at the earliest opportunity and before any further legislation regarding beavers is prepared and enacted.
20. We need to develop a rapid and low-cost regulatory approach that enables Risk Management Authorities to intervene and mitigate these impacts. This means guiding RMAs to undertake management measures broadly in line with the management hierarchy proposed, but ensuring that licensable activities can be undertaken swiftly where necessary and without excess bureaucracy and cost that has been seen with other protected species licences. There must be a recognition that the extensive landscape and hydrological impacts that beavers can present may require a different approach to be applied to existing protected species within the British Isles.
21. In the Netherlands, beavers are increasingly settling in urban areas and polders. Evidence there is showing that their presence also increasingly leads to damage or risks: dikes are undercut and dams in ditches cause flooding.

22. The Dutch Water Boards have the responsibility to limit these risks. In order to do this as well as possible, taking into account the protected status of the beaver within the Netherlands, a Beaver Protocol has been established by flood and water managers and conservation experts (<https://www.waterschaprivierenland.nl/flysystem/media/beverprotocol.pdf>). This beaver protocol describes how the participating water managers deal with beavers if activities of one or more beavers cause a conflict with the primary duties and responsibilities of water managers.
23. The Protocol describes the method and the measures; they start small and increase in impact. From the removal of vegetation, making an area unattractive for the beaver; to the excavation and sealing of tunnels in dikes or the removal of dams. Where damage is repaired, preventive measures are also taken, such as burying stone or mesh against new excavation by beavers. Although the killing of beavers is not excluded in the Protocol, it is stated that all alternative measures should be tried first.
24. Based on the Beaver Protocol, the water boards across the south of the Netherlands have sought an exemption under the Dutch Nature Conservation Act in order to be able to intervene in a responsible manner in the event of damage or risk caused by beaver activities. By agreeing to use the Protocol water boards across each province have been granted the necessary exemptions, removing a great deal of regulatory bureaucracy for water managers whilst maintaining safeguards for beavers.
25. ADA considers that a similar approach to that applied in the Netherlands should be considered rather than a more bureaucratic and costly licencing regime, particularly for Risk Management Authorities, but also other sectors facing substantial adverse impacts from beavers such as Network Rail, Canal and Rivers Trust etc.
26. Regardless of the regulatory approach chosen to enable the management of beavers in England, it should be:
- of low cost to applicants,
 - enabling to a range of public organisations, including smaller public authorities such as internal drainage boards, and
 - facilitate swift proportionate interventions to mitigate the impact of beavers where this threatens damage to infrastructure, watercourse embankments, and increased flood risk to land and people.
27. Further useful guidance on the careful and proportionate management of beavers can be found at <https://www.kenniscentrumbever.nl/> a knowledge sharing partnership supported by the Dutch government, water boards, and conservation bodies.

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