

# Beaver mitigation

## Beaver dams

Beavers require a minimum water depth of approximately one meter around their lodge/burrow and will build dams in certain environments where the water level is below this, to raise water levels to ensure that the entrances to the lodge/burrow are submerged. Beavers may also dam to flood foraging areas, enabling greater access to food resources from the water. Once an initial dam is in place additional structures commonly arise to further expand water levels out into the wider environment.

### Dam draining device

Where water levels behind a dam are intolerable they may be reduced using a flow control device. Advice must be sought from SEPA before placing structures in a water course.

Flow control devices can provide a solution in certain circumstances;

- Where a depth of at least 80cm can be tolerated by the land owner. Any lower than around 80cm beavers are likely to repair the dam or create another dam in an alternative location
- When there is considerable area and amount of water to drain. Dams in very small water courses such as narrow drainage ditches cannot be successfully addressed using this technique.

To install a flow control device the middle section of the dam must be removed to allow the installation of a drainage pipe in a position which achieves the desired drainage level. Larger gauge piping is better at dealing with seasonal fluctuations in flow. The pipe inflow needs to be protected with a wire cage to prevent blockage from debris and from beaver activity. To deter beaver access the cage requires a wire floor and sides which stand 1m (4ft) above water level. 10cm (4inch) square weld or concrete reinforcing mesh is a suitable material for the wire cage. The sides of this structure must be joined with secure metal clips underwater (Gow *et al.*, 2014).

Regular maintenance will be required to keep the cage clear of debris and to avoid beavers attempting to block.

Please contact the Tayside Beaver Study Group for more detailed information and advice on installation.

### Dam removal

Beaver dams are not currently protected and may be removed by a land owner. Consideration should be given to animal welfare and the likelihood of a sudden drop in water level that may expose the entrance to a lodge or burrow especially during the birth and emergence times of beaver kits (April-August).

Any removed material can be left on the bank side as beavers are unlikely to reuse any old debris for reconstruction. The recreation of another dam with fresh material in the same location can be

discouraged by using electric fencing strung across the water course above water level (Gow *et al.*, 2014).

Advice should be sought from SEPA if machinery will be entering the water course to remove a dam.

#### Blocked drainage pipe/culvert

Metal grills can be used to prevent beavers accessing pipes and culverts. A frame with gaps of 10cm (4inch) between each metal pole will limit access to all beavers bar the smallest young. Any structure of this type must be securely fixed to ensure that it cannot be circumvented by burrowing, this can be achieved by setting into a concrete base or by using the main bars as rods which are inserted into the stream bed (Gow *et al.*, 2014).

#### Crop feeding

Electric fencing can be used to deter animals from crop feeding. To be effective against beavers two strands of electric fence placed at approximately 20cm (8inch) and 36cm (15inch) above the ground are required. Any fences of this type should be set across established feeding trails. Care must be taken to ensure any vegetation under the fence is cut or otherwise depressed to avoid loss of power (Gow *et al.*, 2014).

#### Tree protection

Small gauge wire mesh such as chicken or rabbit mesh can be used to create light guards to protect individual trees by deterring beaver felling activity. A more durable solution is to create rigid guards from 1cm (0.5 inch) square weld mesh to a height of 1m (4ft) which are closed with springs or cable ties. As the tree expands these come off and can be reinstalled to accommodate the wider girth (Gow *et al.*, 2014).

Anti-game paint such as Wöbrau (<https://www.fluegel-gmbh.de/de/suchergebnisse/?sq=biber&submit.x=0&submit.y=0>) can be applied to trees to a height of 1m (4ft). The grit is unpalatable to beavers and the Wöbrau brand is guaranteed for 15 years. Homemade solutions of sharp sand and exterior masonry paint (140g sand to 1lt paint) may also be effective but may require reapplication once a year ([http://www.beaversolutions.com/tree\\_protection.asp](http://www.beaversolutions.com/tree_protection.asp)).

Removal of trees to dissuade beaver colonisation or in an attempt to move on resident beavers is not advised as beavers may still set up residence/remain in an area with limited trees and forage further afield.

#### Clearing drainage ditches

Clearing of drainage ditches/bank vegetation may expose beaver burrows and lodges and remove winter food resources (food caches located outside lodges). This raises animal welfare issues and may result in increased levels of cutting to replace the removed materials.

Timing of any clearance should be taken into consideration from an animal welfare point to avoid disturbance during birth and emergence times of beaver kits (April-August).

**Please contact the Tayside Beaver Study Group for further advice and information regarding mitigation methods.**

**Advice must be sought from SEPA before placing any structures in a water course and permission is required for machinery to enter a water course.**

Reference:

Gow, D., Schwab, G., Rosell, F., Girling, S, Campbell-Palmer, R. (2014). *Management Manual for the Eurasian Beaver (Castor fiber) in Britain*. Unpublished.