

## Beaver Pond Leveler

The pond leveler is a combination of a beaver guard and a water level control device. Unlike other devices the leveler does not require removal to restore water levels. Changing the direction of the outflow pipe enables the device to reduce or increase water levels. It requires much less maintenance than other water control devices and is being used extensively in the Lower Mainland. This device requires much less maintenance and is an inexpensive option.

## Beaver Removal

It is recognized that in some situations the hindrances of beavers outweigh the benefits and a landowner may opt for beaver removal. Beavers are classified as furbearers under the Wildlife Act and may be trapped in-season by a registered trapper. Removing a beaver and/or dam is a short-term control method and should be considered as a last resort. If you choose removal, it is important to adopt the Damage Control Techniques outlined in this fact sheet as a way of making the area less inviting to prevent new beaver occurrences.

Manual removal of dams is difficult work and requires continual maintenance, as beavers will often rebuild dams, resulting in further damage to riparian vegetation.

The following guidelines are recommended if a beaver dam is to be removed.

- Removal should occur during the normal instream work window. Typically, this window is between July and August. Contact your local Ministry of Environment office for the precise time frame.
- Instream work should be done manually.
- Dam material should be removed slowly and sequentially.
- Large deposits of silts and organic debris should be left in place.
- Dam material should be taken off-site.
- The trapping of the beaver should be coordinated with dam removal.
- As previously noted, a permit issued from the Wildlife Branch is needed to remove beaver dams or houses.

It is illegal to remove wildlife species without a permit; therefore, landowners should not attempt to trap a beaver themselves and instead should contact a local registered trapper. Water flow devices and alternative methods are the most economically and environmentally feasible methods used to resolve human-beaver conflicts.



South Okanagan-  
Similkameen  
Stewardship Program

# Living in Nature Series

## A LANDOWNER'S GUIDE TO CO-EXISTING WITH BEAVERS



### Introduction

Throughout history, the beaver has served many positive purposes. It has been a source of food and clothing and a catalyst in the European exploration of North America. Today, it is one of Canada's leading national symbols. The beaver also plays an important role in helping to maintain healthy waterways and wildlife habitat. However, beavers and their activities can become a nuisance in areas where they frequently come into conflict with property owners. This fact sheet is designed to provide landowners with several options for positive co-existence with beavers.

### Identification

The beaver (*Castor canadensis*) is the largest rodent in North America. It is rounded and compact, measuring up to 1.3 metres (3.5 feet) long. It has thick, dark brown fur, webbed feet and a paddle-shaped tail covered with leathery scales and sparse coarse hair. The beaver is readily recognized by its strong incisors that enable it to gnaw through wood.

Beaver territory can be identified by dams and lodges in waterways. Beaver cuttings and characteristic broad tooth marks on trees and stumps are also evidence of beaver presence.

### Benefits and Hindrances

Beaver habitat is often rich in plant and animal life, making beaver ponds excellent sites for observing nature. Dams are an integral part of beaver territory and provide significant benefits to wildlife habitat and stream quality. Beaver dams and the associated downed material:

- create ponds that contribute to the stabilization of water tables;
- reduce rapid rain runoff by trapping water;
- reduce soil erosion and improve water quality by reducing the amount of silt;
- increase landscape diversity;
- increase the amount of downed material or deadfall in the water which provides important shelter and food for fish and wildlife; and
- provide social benefits such as human enjoyment and educational opportunities.

*Beaver and beaver dam removal are short-term control methods. Beavers will return and rebuild dams creating more disturbance and damage to trees*

### Project Partners:



Text by: Lisa Scott and Dallas Plensky

Reviewed by: Michelle Kam (City of Kelowna), Bruce Harrison (Ducks Unlimited Canada),

Gary Bowden and Kathy Reimer

Edited by: Kathy Holm and Kristina Robbins

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Beaver activity can also have negative consequences by affecting soil fertility, water chemistry and plant succession. The construction of beaver dams and removal of riparian vegetation can:

- damage or destroy important wildlife trees;
- damage buildings and power lines from felled trees;
- destroy agricultural crops and delay planting;
- cause extensive flood damage;
- detour or restrict water flow in streams;
- plug drainage ditches, drain pipes and culverts; and
- restrict access to creeks for spawning fish.

Landowners should determine what type of problem the animals are causing, and then apply an appropriate method to prevent potential damage. There are many ways landowners can modify habitat to exclude or discourage beaver activity. This type of habitat manipulation is simple and inexpensive for the landowner and ensures no harm to the beaver.

## Damage Control Techniques

### 1. Tree Protection

Beavers can cause serious damage to dead and deteriorating wildlife trees, as well as living trees, all of which provide essential food, nesting and shelter opportunities for many wildlife species.

*Wrapping the base of tree trunks with wire mesh can prevent damage from beaver activity.*



Individual trees can be protected from beaver damage by encircling the bottom 1.5 metres (4 feet) or more of the trunk with chicken or page wire. Fencing should be flush with the ground or for extra support buried 3 to 4 inches deep. Use wire with openings no larger than 1 inch across. Allow for some space between the trunk and the wire for annual tree growth (8 to 10 inches).

### 2. Fencing

Beavers are not good climbers. For large treed areas it may be possible to exclude beavers by enclosing an area of land with a low metal fence at least 1 metre (3 feet) high and buried 0.5 metres (1.5 feet) below ground. If the beaver cannot get a foothold, it will not be able to climb the fence. This method may be expensive.

The use of an electrical fence may also deter beavers. Electric fences, similar to those used for cows and dogs, or a single wire suspended about 30 cm (1 foot) off the ground, can be effective. Beavers receive a mild shock when they touch the fence, but they are not injured and will learn to avoid the area.

### 3. Repellents

Spraying rodent repellents and bittering mixtures on trees trunks can reduce specific tree damage when the beaver has alternative sources of food nearby. The disadvantages of using repellents are the cost and the need to reapply every couple of months, especially during the spring and summer when beavers are most active.

### Flooding Control

Beaver dams can usually be altered to produce desired water levels, consequently reducing flood damage. However, a permit under the Water Act is required to divert or make any changes in or about a stream. If a beaver dam or house will be removed, a permit must first be issued from the Ministry of Environment Wildlife Branch. A permit from Fisheries and

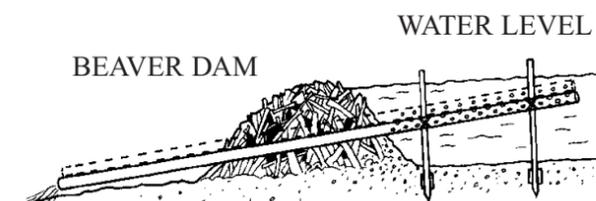
Oceans Canada is needed if there is going to be any alteration of fish habitat or depositing of deleterious substances (silt), as a result of a beaver dam or house being removed. Contact your local Ministry of Environment office for more information.

In some situations, the use of a water level control pipe is the best solution. The existing beaver dam is an essential part of this control method. The device allows water to drain from the flooded area without destroying the dam, and the beaver cannot plug it. This method usually provides long-term control of the water level.

Construct the device by fitting two plastic sewer pipes together, making a longer pipe at least 6 metres (18 feet) long. The diameter of the pipes can be 4, 6, 8 or 10 inches, depending on the volume of water in the stream.

Perforate one end of the pipe. Dig a hole in the beaver dam in line with the original stream channel. Set the pipe at almost any level in the dam, extending the perforated end out into the pond (see Figure 1). A weight should be placed on the end of the pipe. Allow about one quarter of the pipe to extend on the downstream side of the dam.

**Figure 1 Water level control drainpipe in beaver dam (Control of Beaver Damage, Alberta Agriculture, Food and Rural Development.)**



To be effective, a water level control pipe requires monitoring and some maintenance.

- Check the pipes every spring and fall, and remove any debris blocking the drain holes.
- Ensure that the normal flow of the stream does not exceed the flow capacity of the pipe.

- Check that the water depth is at least 0.5 metres (1.5 feet) or deeper and the size of the area must be adequate to install pipes properly.
- Ensure that the device is not preventing the beaver from maintaining the dam.

## Blocked Culverts

Beavers may see culverts as an easy way to make a dam and will plug up the hole resulting in back flooding. There are several options for preventing beavers from blocking culverts. One method is to insert a U-shaped wire mesh fence on the upstream side of the culvert. Debris will collect along the fence and must be cleaned regularly.

Wire mesh beaver guards are also an alternative. Insert a wire mesh cylinder with the same diameter as the culvert in a horizontal or vertical position (see Figure 2). The length of the cylinder should be about twice its diameter. Secure the cylinder with heavy metal stakes and fasten it to the culvert.

**Figure 2 Wire mesh beaver guards (Control of Beaver Damage, Alberta Agriculture, Food and Rural Development.)**

