
ENVIRONMENTAL Fact Sheet



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The Effects of Beaver Activity On or Near Manmade Dams

By their nature, beaver frequently build dams in order to create a habitat conducive to their existence. This poses a continuing nuisance to dam owners, upstream and downstream abutters and other property owners throughout the state. The NH Department of Environmental Services Dam Bureau has the responsibility of dams as defined by RSA 482:2 II, which does not include beaver dams. Therefore, dam owners are responsible themselves for monitoring and remediating problems caused by beaver activity. These activities include:

Clogging outlets. Spillways, stoplog bays, and drop inlets are susceptible to blockage through the action of beaver. The presence of debris can act to reduce the discharge capacity of a dam, raise the pond, or produce sudden high outflows should the debris obstruction fail.

Raising the height of a dam. Beaver activity along the crests of certain dams (i.e., those whose spillways constitute the entire length of the dam or earthen embankment type dams) can increase the pressure exerted on the dam structure because of a higher head, or can lead to the dam being overtopped. Generally, earthen dams are not designed to withstand the effects of overtopping, and most dams regardless of their construction should not be subjected to more stress than that exerted under normal operating conditions. Both the overtopping of unprotected dams and the increasing of lateral or hydro-static pressure on the dam structure can lead to serious problems or even failure.

Damming the flow upstream or downstream of a dam. Beaver can also affect the operation and safety of dams by building upstream or downstream of the structure. Beaver activity upstream of dams can act to reduce, or even halt, flow to the dam. The beaver dam will also provide a constant supply of floating debris that can block the dam's outlets. Also, if the beaver dam is large enough, there is a potential that its failure could cause major damage or even failure of the downstream dam.

Beaver activity downstream of a dam can be equally disruptive to the operation of the dam. If the tail-water elevation at the dam increases, then its discharge capacity will likely decrease. It is also probable that a higher tail-water will facilitate erosion of the downstream toe of the dam or other appurtenant works.

SOLUTIONS

To combat or eliminate the detrimental effects of beaver activity, dam owners can employ various methods. A few of these are outlined as follows.

Beaver pipes. These pipes can also be referred to as boxes depending on their cross-section (i.e. round or square). They are usually installed through the dam at or near the crest and are designed to provide continuous outflow to deter beaver. If the beaver cannot raise the water level, then further activity usually ceases. The pipes are not foolproof, however, as beaver can sometimes render them inoperable. Therefore, it is important that they are periodically checked.

Floating debris booms. These usually consist of long floating logs that are fastened end-to-end and strung upstream of turbine intakes, spillways, gates, etc. They act to catch the majority of the floating debris that makes its way toward the dam.

Periodic maintenance. The most elementary way to ensure against the detrimental effects of beaver debris is to perform regular inspections and maintenance of susceptible areas. Although this is an effective method of ensuring the dam's safety, it doesn't eliminate the problem (i.e. the beaver activity).

Taking of beaver. When attempts to deter beaver activity through physical modifications at the dam have failed, it may become necessary to address the problem at its source. Under RSA 210:9 Section II, "... a landowner, his employee, tenant, or caretaker, or any town or municipal or state official or employee, may destroy beaver or beaver dams on property under their control to protect property, public highways, or bridges from damage or submersion with the permission of the owner of the lands affected, if applicable." Prior to any action, however, all persons should contact the New Hampshire Fish and Game Department at (603) 271-3421 for information and requirements relating to the action.

Before removing a beaver dam, check with the DES Wetlands Bureau at (603) 271-2147, as some beaver dams may be removed when certain requirements are met. A beaver dam should not be removed by an individual unless it is on their property. An individual should not remove a dam from another person's property unless they have the owner's permission. When a beaver dam is removed, it should be removed in such a way that there is a slow release of water not causing a large release downstream that could cause damages.

For more information relative to the design, construction, maintenance and operation of dams, please contact the DES Dam Bureau at (603) 271-3406 or email damsafety@des.nh.gov. General information is available at <http://des.nh.gov/organization/divisions/water/dam/index.htm>. You may also visit our office at 29 Hazen Drive, Concord, NH.