Agenda Item 16

TOWN OF RICHMOND HILL

COMMITTEE OF THE WHOLE
April 28, 2003
SRSPRC.03.28

Parks, Recreation and Culture
Parks Development and Design

SUBJECT: BEAVER MANAGEMENT POLICY - (SRPRC.03.28)

PURPOSE:

To establish an economical, humane and effective wildlife management policy responding to human-wildlife conflicts involving beavers on Town owned or managed lands.

RECOMMENDATIONS:

a) That the Beaver Management Policy attached as Appendix A be adopted;

b) That the Parks, Recreation and Culture Department be directed to implement the Beaver Management Policy

Contact: John Nemeth
Manager of Environmental Services

Submitted by:

per Lynton Friedberg
Commissioner of Parks, Recreation and Culture

Approved by:

C.D. Weldon
Chief Administrative Officer

BACKGROUND:

Hunted to the brink of extinction from the 1700's until the decline of the fur trade in the mid-1970's, the North American beaver (*Castor canadensis*) was once the subject of strict conservation measures in some parts of Canada. However, beaver populations have now made a remarkable recovery. The species is no longer on any protection lists, and the lodges and dams of this large rodent (they can grow to be 1.2 m in length and weigh up to 30 kg) have once again become a familiar sight across Southern Ontario.

In the Town of Richmond Hill, urbanization has resulted in the destruction of the habitats of the natural predators of beavers. Accordingly, uncontrolled beaver populations within the municipality have found our open space and valleyland systems ideal places to live. Since 2001, evidence of beavers has been observed in the Lake Wilcox outflow channel, Beaver Creek in Bayview Hill, German Mills Creek in Langstaff, and the Rouge River tributaries in Bayview North.

There are a variety of issues associated with the presence of beavers on Town land. The construction of dams and lodges by beaver families has the potential to destroy vegetation, disrupt the normal flow of watercourses, interfere with stormwater management facility functions, and necessitate the expenditure of municipal funds to implement damage control. While beavers do not generally contract rabies they can spread a disease called giardiasis, or "beaver fever" to humans who consume waters impacted by beavers carrying the disease. Like any other animal, a cornered or threatened beaver could exhibit aggressive behaviour (e.g. scratching, biting).

In order to manage beaver issues effectively, the Town requires a comprehensive wildlife management policy, which responds to human-wildlife conflicts caused by beavers on Town owned and managed lands. This policy will ensure that the residents of Richmond Hill can benefit from the presence of these animals with minimal risk to property damage and human safety in the Town of Richmond Hill.

The Ontario Fish and Wildlife Conservation Act (S.O., 1997) and associated regulations provide the basis for beaver management. In addition, staff have contacted other municipalities, the Ontario Ministry of Natural Resources (OMNR) and the Toronto and Region Conservation Authority (TRCA) for assistance with development of this policy.

FINANCIAL/STAFFING/OTHER IMPLICATIONS:

It is expected that the attached Beaver Management Policy can be implemented effectively by

current staff. In specific circumstances, additional funds beyond normal operational allocations may be required for the implementation of necessary prevention and exclusion methods or for the trapping of beavers and/or the restoration of areas that have been impacted by beaver-related activities.

RELATIONSHIP TO THE STRATEGIC PLAN:

The Town of Richmond Hill Beaver Management Policy is written to be consistent with the Corporate Strategic Plan. It aims to balance *"preserving and restoring the Town's unique natural features"* with efforts to *"enhance community safety"*. In addition, the Town's policy was developed in consultation with the TRCA and the OMNR, demonstrating that the Town is *"working with other levels of government to ensure preservation and proper management of our natural environment"*.

CONCLUSIONS:

Due to a rise in the local beaver population and the potential risks related to the presence of beavers within the municipality, staff recommend the adoption of a beaver management policy which describes the procedures to be followed to resolve beaver activity issues. The recommended policy, presented as Appendix "A" of this staff report, is consistent with Provincial legislation and regulation, Ministry of Natural Resources policies and recommendations, and the Toronto and Region Conservation Authority's Policy for the Management of Human-Wildlife Conflicts on Authority Lands.

APPENDIX A - TOWN OF RICHMOND HILL BEAVER MANAGEMENT POLICY

Town of Richmond Hill

Beaver Management Policy

114

Environmental Services Section
Parks Development and Design Division
Parks, Recreation and Culture Department

April 2003

Table of Contents

1.0 Background

Hunted to the brink of extinction from the 1700's until the decline of the fur trade in the 1970's, the North American beaver (*Castor canadensis*) has now made a remarkable recovery. Beavers have recolonized much of their native territory and once again lodges and dams are becoming a familiar sight in Southern Ontario. This time however, the species is not only establishing colonies in its traditional wild and rural habitats, but it is also finding that the green spaces of urbanized municipalities can provide adequate living environments. The presence of beavers within urban areas has given rise to both interest and concern, and therefore, municipalities are finding it increasingly necessary to implement policies which respond to human-wildlife conflicts involving beavers.

Beavers are large rodents that can grow to be 1.2 m in length and weigh up to 30 kg. They are characterized by features adapted to their aquatic environment such as: webbed feet, dense underfur, valvular ears and nose, and lips which close behind their large incisors. Beavers mate for life and live in family units called colonies (a single beaver lodge could be occupied by as many as nine beavers). Each year a mated pair of adult beaver, with an established lodge and stabilized water supply, will produce two to five young, called kits. Kits are born in the spring (May to June) and generally do not move from the lodge for a period of one month. At approximately 2 years of age a beaver reaches sexual maturity and will migrate along streams or across country until it locates a mate and suitable habitat to start a family. Dispersal migrations can vary from just a few kilometres up to 250 kilometres.

Beavers are nocturnal creatures that do not hibernate. They are most active during the fall, working to store enough food (piled outside the lodge) to sustain them throughout the winter. Their diets include the bark of trees (they favour poplar, willow, cottonwood, aspen, beech, alder, hickory, and birch trees), water plants (pond lilies and cattail roots), shrubs, saplings, grasses, herbs, leaves and fruits. Their eating habits change with the seasons according to what food sources are plentiful at that time of year. A family of five or six beavers may require in excess of one half hectare of dense poplar trees for its winter food supply.

Beavers construct living areas, called lodges, in lakes or rivers. A lodge consists of a single room with a floor above the water surface and an underwater tunnel for access. Though beaver lodges are remarkable structures themselves, it is the construction of dams, which earns beavers their notoriety. Beavers build dams for two reasons: to expand the size of the water pool around their lodge so they can access food sources (trees on the shore) more easily and safely (they are excellent swimmers but are slow and awkward on land, making them more vulnerable to predators), and to maintain pools of water deep enough to not freeze to the bottom in winter (so that the lodge can be accessed all winter).

The construction activity of beavers can be beneficial, but it can also cause problems. The positive effects of beaver dams include: the creation of important wetland habitats for waterfowl and other wildlife, the regulation of high flow conditions in streams during storm events, and the reduction of downstream bank erosion. In urban areas, the proximity of beavers

to humans offers recreational and educational opportunities. Beaver activity in urban areas, however, also has the potential to cause serious damage and create hazardous situations. Damming activities may weaken engineered structures, or flood roads, trails, or basements. Girdled, cut and felled trees may topple other trees or utility poles, or cause precarious overhangs that could fall onto public pathways and roadways. In addition, residents may be troubled by aesthetic damage caused by the removal of trees from parklands and their property.

In order to ensure that the residents of Richmond Hill can benefit from the presence of this species with minimal risks to property, human health and safety, the Town of Richmond Hill has prepared this document.

2.0 Goal

To establish an economical, humane and effective wildlife management policy for responding to human-wildlife conflicts involving beavers on Town owned or managed lands.

3.0 Legislation

Castor canadensis is considered a furbearing mammal under Schedule 1 of the Ontario Fish and Wildlife Conservation Act (S.O., 1997). In Section 8 the Act states that:

> "(2) A person shall not intentionally damage or destroy the den or habitual dwelling of a furbearing mammal, other than a fox or skunk, unless the person holds a licence to trap furbearing mammals"; and
>
> "(3) A person shall not damage or destroy a beaver dam unless the person holds a license to trap furbearing mammals."

but that the above restriction

> "(4)...does not apply to a person, or agent of a person, who damages or destroys a beaver dam to protect the person's property."

In Section 31 the Act permits the protection of property as follows:

> "(1) If a person believes on reasonable grounds that wildlife is damaging or is about to damage the person's property, the person may, on the person's land,
>
> (a) harass the wildlife for the purpose of deterring it from damaging the person's property; or
>
> (b) capture or kill the wildlife."

"(4) A person who harasses, captures or kills wildlife under this section shall not harass, capture or kill more wildlife than is necessary to protect the property."

Section 133 of the Fish and Wildlife Conservation Act Regulation 665/98 also declares that:

"(1) A person who captures but does not kill live wildlife under clause 31 (1) (b) of the Act shall, not later than 24 hours after capture,

(a) release the wildlife as soon as possible into the area in close proximity to the capture site unless otherwise directed by the Ministry; or

(b) deliver any wildlife that is sick, injured or immature to a wildlife custodian described in section 44 of the Act. O. Reg. 665/98, s. 133 (1)."

"(2) A person shall not release wildlife under subsection (1) on private property without the permission of the owner. O. Reg. 665/98, s. 133 (2)."

Ontario Ministry of Natural Resources (OMNR) staff advise that the legal intent of the phrase "in close proximity to the capture site" is the territory of the captured animal. The OMNR policy is to prohibit relocation of beavers more than 1 km from the capture site.

4.0 Beaver Management Principles

a. Town response to beaver-related issues should be efficient, fiscally responsible, ecologically sound and humane.
b. Residents who report damage caused by beavers, or the presence of beavers in their neighbourhood, should be provided information regarding beavers and the options for their control.
c. The Town's Beaver Management Policy will be consistent with the Ontario Fish and Wildlife Conservation Act, recommendations of the OMNR and the policy of the Toronto and Region Conservation Authority (TRCA).
d. The Town will cooperate with other levels of government, agencies and organizations in order to best address beaver management issues.

5.0 Beaver Management Policy

5.1 Reporting Issues

Resident reports and inquires about beavers, as well as Town staff observations of potential beaver-related issues, should be directed to the Parks, Recreation & Culture Department, Environmental Services Section. Upon receiving information regarding a beaver-related issue

Environmental Services staff will start a Beaver Incident Form (Appendix A) by recording the name, telephone number and address of the resident who called (or the name and extension number of the Town staff who observed the beaver activity), the location and nature of the beaver activity, and the reason the activity was reported (e.g. tree cutting, flooding).

Should the complaint be related to dam construction or tree cutting, staff of the Environmental Services Section will:

a. Inspect the site promptly
b. Decide on a course of action
c. Call the resident back to report on the situation and any management activity to be undertaken.

If the concern is related to an injured or unhealthy beaver, orphaned kits, or odd behaviour of a beaver, staff should direct the call to: Wild Care at (905) 832-8952 or Toronto Wildlife Centre at (416) 631-0662.

5.2 Site Investigations

Upon notification of dam construction or tree cutting, Environmental Services staff will promptly conduct a site inspection to assess the situation and evaluate the need to undertake management activity. In order to maintain a consistent methodology for site specific analysis of problems, the Beaver Incident Form (Appendix A) should be taken to the site and completed. At the initial site investigation, the following information should be documented on the incidence form: the exact location, general site conditions, the type and severity of any beaver activity observed, the inspectors evaluation of the problem, and the management response recommended by the inspector. Subsequent resident calls, correspondence, site visits and management undertaken at this site should be recorded on the same form.

5.3 Responses to the Presence of Beavers

When a beaver inhabits Town-owned or managed lands, there are five basic management options:

1. Monitoring
2. Educate and inform the complaintant
3. Implement prevention/exclusion measures
4. Dam Removal
5. Beaver Removal

In most circumstances some combination of these five options is needed to deal most effectively with the beavers, its dam and lodge. Each situation is different and knowledge and good judgment are needed to decide the best course of action. The descriptions of each option provided below will assist staff in determining which action(s) should be taken.

5.3.1 Monitoring

Beavers are not a nuisance in all situations and their presence does not necessarily preclude the need for responsive action on behalf of land managers. In circumstances where the presence of beavers is discovered, but the animals are not causing any significant damage or threat to safety, the beaver(s) is best left alone and the site monitored to ensure that a dangerous situation does not develop.

5.3.2 Education

Education of residents about beavers should be undertaken if there is a resident complaint regarding beaver activity. Education should commence when the resident first calls to voice concern(s). In many instances promoting awareness of the beaver and its habitat, can eliminate the resident's perceived need for additional action (depending on the environmental changes and extent of damage that the beaver has caused). In some situations, complexity, lack of willingness to learn and accept, severe property damage, or threats to health, safety or property may inhibit the usefulness and effectiveness of this option. However, regardless of whether other actions are undertaken, education is an important component of any wildlife management strategy and should be incorporated into resolutions as much as possible.

5.3.3 Prevention / Exclusion Measures

Prevention/exclusion measures (sometimes called harassment techniques) are used to discourage beavers from occupying a particular area or to get a beaver that has already occupied a particular area to move to another location. These measures are most useful when a beaver is causing a minor nuisance which threatens to escalate in scale. Prevention / exclusion measures are considered to be very humane and are generally publicly accepted, but they have varying degrees of success, they cost money and they may transfer problems to other areas. If used, they should be implemented in late summer when the beaver is first starting to stock for the winter and there is still time for it to move to another place before the water freezes. They should not be carried out in the fall or winter when the beaver is relying upon its preparations in the area for survival.

The following are some of the prevention and exclusion measures which can be undertaken to resolve beaver problems:

a. Tree Protection - The easiest prevention/exclusion method involves protecting trees. If the beaver is unable to utilize the tree supply in a particular area it will be forced to move on to find another source of food and building material. A single shrub or tree can be protected from damage by encircling it with securely fastened wire mesh 0.75-1.0 m high (Appendix B). Tree wrapping is most useful when the beaver is otherwise causing minimal problems (i.e. no threat of flooding) but there are valuable trees in the vicinity which people would like to see protected. Tree protection may also be an effective way to encourage beavers to move from a specific place where there is a potential for flooding and the area is dominated by

conifers (which the beavers will not use) with some deciduous trees interspersed (that could be protected, therefore limiting the beavers food supply).

b. Tubular Culvert Protectors - Tubular culvert protectors confuse beavers, therefore preventing them from creating a dam. A protector can be constructed from two lengths of concrete reinforcement wire extending from the outside of the culvert and rounded closed at least 2.5 m from the end of the culvert. Light rods should be fixed inside the mesh to further hold the protector in place and in a cylindrical shape (Appendix B). The tubular protector requires only periodic maintenance, but may need major repairs if damaged by ice in the winter. Tubular culvert protectors should be used to prevent beavers from colonizing or recolonizing an area that is known to be favourable habitat. Site conditions will dictate whether a culvert protector or a water level control pipe is more appropriate for a specific location.

c. Water level control pipe - Like the tubular culvert protector, the water level controller (or Beaver Baffler as it is sometimes called) confuses the beaver, preventing the construction of a dam, and hence encouraging the beaver to move on in search of a better living location. A baffler is made of a piece of PVC pipe with a minimum length of 3.0 m and a diametre adequate to carry the appropriate flow for the watercourse. A wire cage is fixed around one end of the pipe which is placed upstream of the dam. The other end is inserted through the dam and conducts water entering at the caged end across the dam (Appendix B). This device is most suitable in situations where a small pond is desirable or acceptable. The use of beaver bafflers is limited to instances where the flow that is required to prevent major flooding can be accommodated by one or more pipes.

5.3.4 Dam Removal

Partial or full dam removals should only be undertaken when there is a flooding risk, and they should be followed by the implementation of a prevention/exclusion method or trapping of the beaver. Though dam removal has been attempted as a harassment technique, it has been demonstrated to be an ineffective means of trying to make the beaver move from a particular location and generally results in frantic beaver tree cutting activity to restore its constructions. In addition, it causes significant deposition of harmful suspended sediments in the downstream watercourse, increases the risk of downstream flooding, and can threaten the survival of the beaver.

5.3.5 Beaver Removal

Control of beaver populations can be attempted by trapping using a 330 CONIBEAR trap, which kills the beaver instantly, or a HAVAHART trap, which catches the beaver so that it can be humanely euthanized. Relocation of beavers is regulated under the Ontario Fish and Wildlife Conservation Act and is generally not an acceptable option because relocation transports the problem elsewhere, transmits disease amongst beaver populations, and usually results in suffering and/or death of the beaver which has been relocated to unfamiliar territory.

Trapping must be undertaken by an OMNR licensed trapper. A list of all licensed trappers in the area can be obtained from the OMNR. Any trapper hired by the Town will be issued a letter of authorization restricting trapping activities to a certain area. The liscenced trapper will be required to provide information regarding the number, age and sex of the animals removed to Town Environmental Services Section Staff.

Trapping beaver is expensive, leaves habitable areas vacant for new beavers to colonize, and may not be very well accepted by the public. Therefore, it should be used only as a measure of last resort when other preventative measures have failed and the beavers activities are threatening property or human safety. Prevention/exclusion methods may be implemented in any area from which a beaver is removed in order to prevent that area from being recolonized by another beaver.

5.4 Follow-up and Monitoring

Staff will follow-up on each beaver issue involving Town owned or managed lands by conducting inspections, contacting the complaintant, and documenting the type, time and location of any action taken, or to be taken, on the incidence form (see Section 5.2). In addition, staff will also:

a. Monitor sites that are otherwise being tolerated and left alone, by conducting an inspection at least monthly to ensure that a problematic situation does not develop.
b. Inspect prevention and exclusion measures which have been put in place monthly to see that they are in working order and to evaluate their effectiveness. Ongoing maintenance actions will be required for culvert protectors and beaver bafflers. If a beaver is removed from an area, measures should be taken to ensure that the same site is not recolonized by beavers in the future.

5.4 Resident Notification

In all cases, staff will contact any residents that have been involved with a particular beaver incident (in addition to the origninal complaintant) to inform them of any actions that the Town has taken. In addition, in the event that there are any safety or property issues associated with the beaver activity, or beaver management action(s) undertaken, any impacted residents will be informed of the situation by mail or hand delivery of a notification.

5.5 Emergency Situations

In some cases it may be necessary for the Town of Richmond Hill to respond to emergency beaver situations in which there is an immediate risk to an individual's health or safety (e.g. where an animal is exhibiting unusual aggressive behavior).

The procedure for dealing with emergency beaver problems will be as follows:

a. Staff available at the time of the occurrence will evaluate the situation and make any necessary decisions including calling for animal services (or if Animal Services is unable to respond in a reasonable amount of time, the Region of York Hill Police Services).
b. If necessary the animal will be captured in the most humane way possible while maintaining public and staff safety at all times.
c. Animal Services will decide whether the animal needs to be euthanized immediately, or if its condition needs to be further evaluated, in which case Animal Services should transport it to the closest wildlife rescue or rehabilitation centre that will accept the animal:
   Wild Care (905)832-8952
   Toronto Wildlife Centre (416)631-0662
d. Information related to the occurrence and any actions taken will be documented using the standard incidence form and reported to the TRCA's Environmental Services Section.

These procedures are for emergencies only, and will not be applied to recurring nuisance beaver situations.

References

Canadian Wildlife Service. 2001. Hinterland Who's Who; Beaver. http://www.cws-scf.ec.gc.ca.

City of Toronto. 2001. DRAFT City of Toronto Beaver Management Policy.

Gosselin, H., Johnson, B. 1995. The Urban Outback - Wetlands for Wildlife, Adopt-a-Pond program, Metro Toronto Zoo, Toronto, Ontario, pp. 32.

Government of Ontario. 1997. Fish and Wildlife Conservation Act, S.O. 1997, Ch. 41, Amended 2002.

Ontario Ministry of Natural Resources. Extension Notes: Options for Controlling Beaver on Private Lands. Queen's Printer: Toronto.

Saskatchewan Parks and Renewable Resources. 1985. Nuisance Beaver Control, Saskatchewan Parks and Recreation: Regina.

Toronto and Region Conservation Authority. 2001. Policy for the Management of Human/Wildlife Conflicts on Authority Managed Lands.

Appendix A - Beaver Incident Form

Site Inspection

Inspector(s): _____

Description of exact location:

Diagram of site:

Description of Damage/Situation & Comments:

Recommended Actions:

Record of Action:

Date	Action

Appendix A - Beaver Incident Form

Beaver Incident Form

Incident Number (Year-#) _____

General Information:

Date of Initial Notification: _____

Location of Beaver Incidence: _____
(including closest major intersection)

Reason for Notification: _____

Primary Contact Information (Resident/Staff Involved in Initial Notification)**:**

Name:	
Phone #:	Address:
Original Contact Date & Discussion:	
Follow-up Contact Date & Discussion:	

Other People Involved:

Name	Phone Number	Address	Involvement

Tree Protection

Occasionally, beaver from a nearby stream will enter a yard site to cut down or feed on trees. This usually occurs at night, in absence of a watch dog.

A single tree or shrub can be protected from damage by encircling it with securely fastened wire mesh. Stucco wire or other stiff products are preferred as common chicken wire, unless well-staked, is usually too light to do the job.

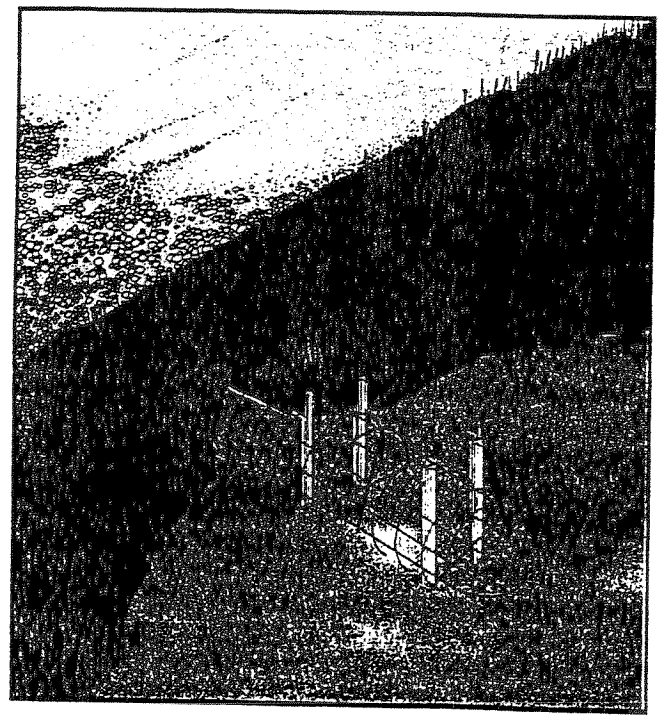
The wire must be at least 75 centimetres (30 inches) in height and no larger than five centimetres (two inch) mesh wire.

This method is suitable if only a few trees or shrubs need protection. It is too costly or impractical to use for large areas. When entire shelterbelts are under attack, the removal of beaver is often the only solution.

Wire Mesh Culvert Protector

This protector can be made from two lengths of concrete reinforcement wire. The wire is rolled and fastened together to extend at least 2½ metres (12 feet) from the end of the culvert. It is important to place the mesh **over** the end of the culvert and not inside; this prevents beaver from flattening this end.

Light rods should be fixed at two positions, one metre (three feet) and three metres (nine feet), inside the mesh to further hold the protector in a cylintrical shape. The end in the pond is wired closed to prevent beaver entry. Four metal stakes hold the device in place.



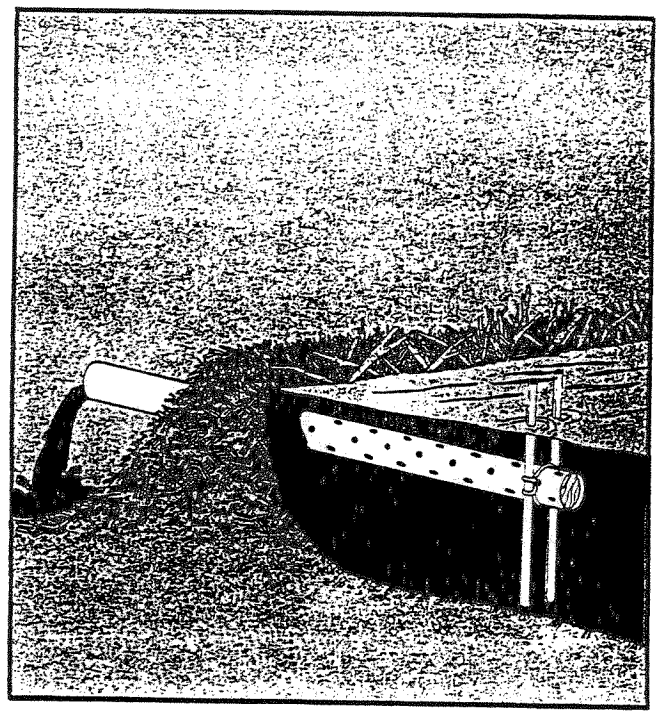
Only periodic maintenance is needed to keep it working. If pond water levels are high in fall and this device freezes into the ice, it many not withstand the pressures of ice breakup in spring.

Reference: Saskatchewan Parks and Renewable Resources. 1985. Nuisance Beaver Control, Saskatchewan Parks and Recreation: Regina.

Water Level Control Pipe

The water level control pipe is used when beaver are needed to maintain a water supply but their pond size must be regulated to prevent excessive flooding. This device is simple to build and can be used for many years with little maintenance.

Plug one end of a polyethylene pipe, six metres (18 feet) in length and 20 centimetres (eight inches) in diameter, with a fitted piece of wood. Drill large holes two to three centimetres (three-quarter inch to one inch) in a series along 2½ metres (eight feet) of the pipe from the end that is plugged.



This pipe can then be set through the dam so that it drains excess water. The perforated end of the pipe should extend well into the deep water of the pond. A one metre to two metre (four foot to six foot) extension beyond the dam on the downstream end is usually adequate. The desired pond level is regulated by the vertical positioning of the perforated end of the pipe. Extensions can be added to the pipe if necessary.

Two or more pipes can be used if desired. This device is most suitable to the small pond situation, as a small pipe lacks the capacity to handle water from a major creek or river.

Reference: Saskatchewan Parks and Renewable Resources. 1985. Nuisance Beaver Control, Saskatchewan Parks and Recreation: Regina.