The City of Ottawa and the Beaver Institute Present:

Ottawa Beaver Management with Flow Devices

Michael Callahan, President
Beaver Institute, Inc.

My Background

Beaver Solutions LLC

Over 2,500 problems resolved in New England

Beaver Institute, Inc. – *Est. 2017*

Train professionals across U.S. and Canada

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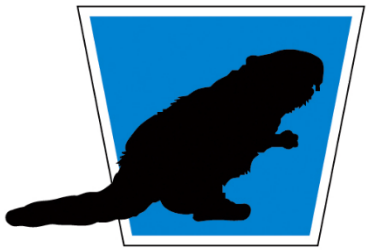

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www.BeaverInstitute.org
www.BeaverSolutions.com

Preview

- What are Flow Devices?
- Success Rates and Limitations
- Ottawa Site Assessments
- Q & A

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Types of Beaver Problems

- Road Flooding
- Structural Flooding
- Tree Damage
- Septic System or Well Flooding
- Agricultural Land Flooding
- Drainage Structure Blockage

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THE ARGYLE SWEATER BY SCOTT HILBURN

Beaver Control Options

- **Short-Term Solutions**:

  Dam Removal, Culvert Clearing

- **Moderate-Term Solution**:

  Trapping

- **Long-Term Solutions**:

  Water Control (Flow) Devices

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Flow Device Types

1. Pond Leveler Pipe

2. Culvert Fences

3. Fence and Pipe System

4. Decoy Dam

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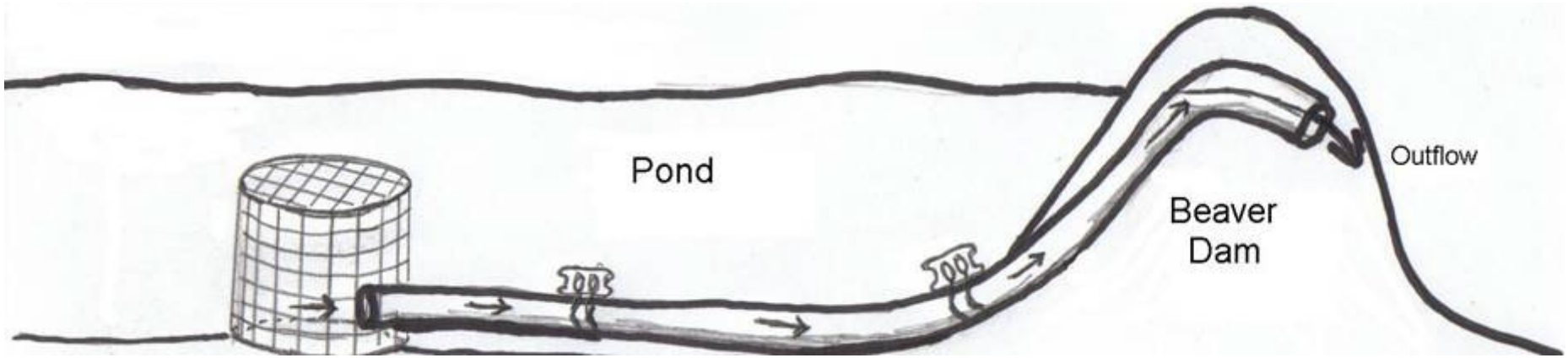
Pond Leveler Diagram



Note: Beavers are unable to detect the flow of water into the pipe.

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Pond Leveler Pipe


The height of the pipe in the dam determines the final pond level.


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8 Years Later
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Flow Device Types

1. Pond Leveler Pipe
2. **Culvert Fences**
3. Fence and Pipe System
4. Decoy Dam

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Protecting Road Culverts

A Blocked Culvert Can Cause Serious Damage

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Road Culverts

Nearly every culvert can be protected from beavers with a flow device.

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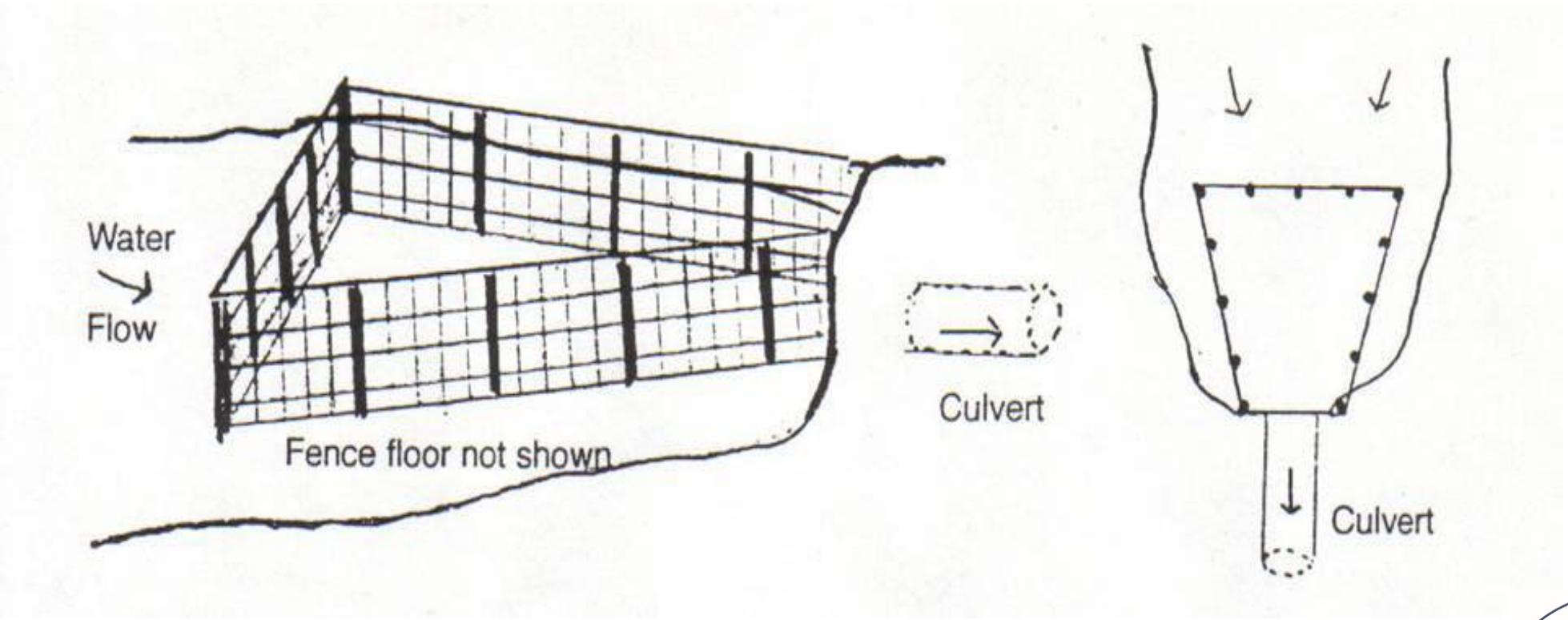
Keystone Culvert Fence



Make the culvert undesirable to dam

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Keystone Culvert Fence

Reason 1:

Large perimeter to dam

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Keystone Culvert Fence

Reason 2:
Damming forced away from culvert

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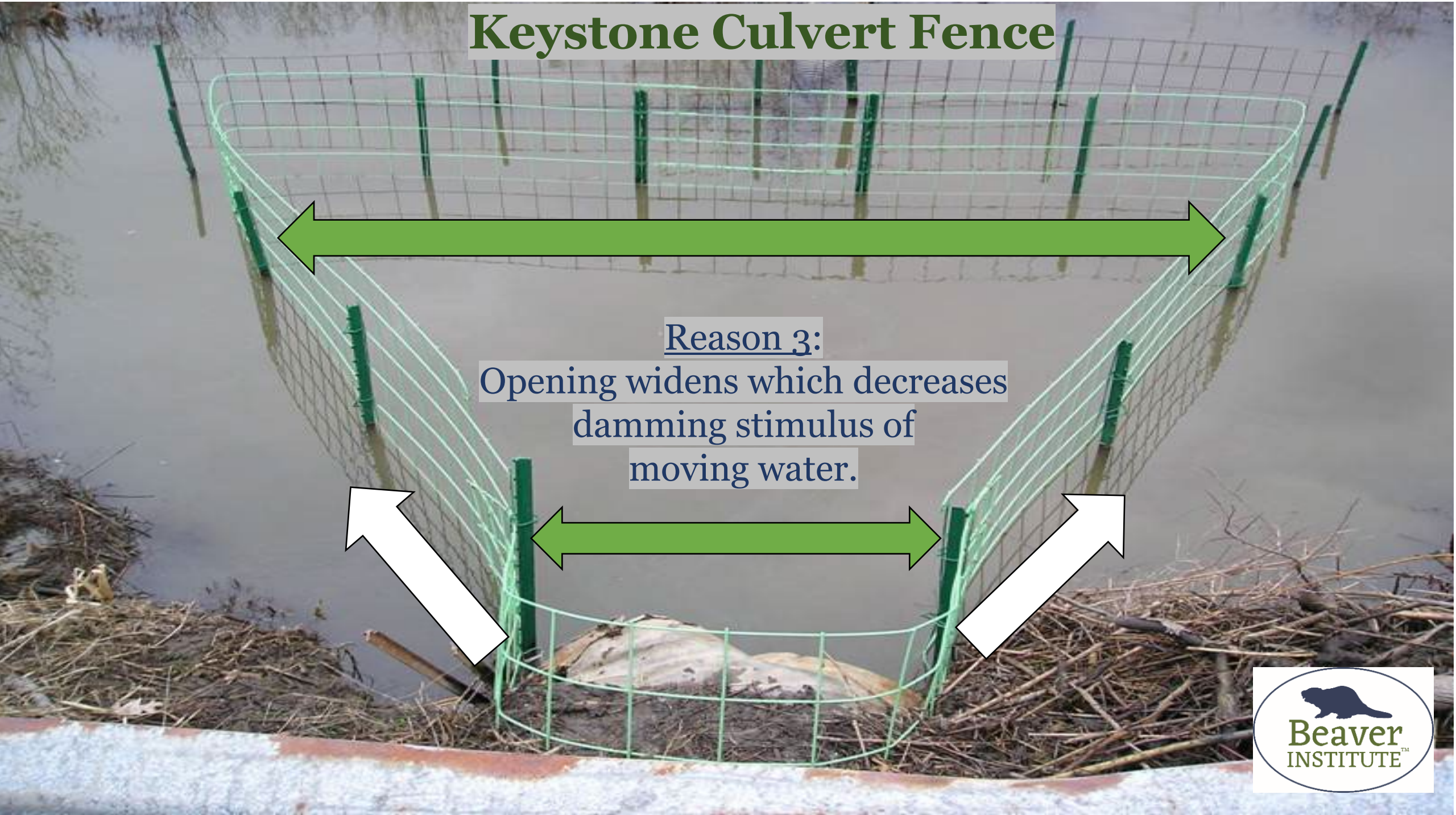
Keystone Culvert Fence

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Flow Device Types

1. Pond Leveler Pipe
2. Culvert Fence
3. **Fence and Pipe System**
4. Decoy Dam

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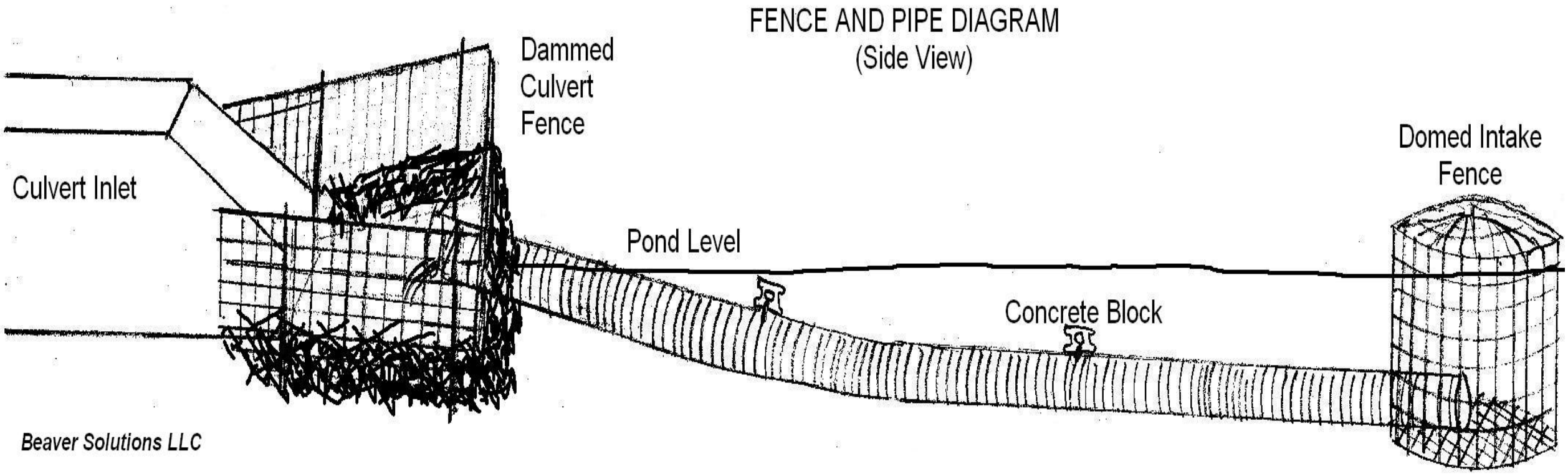
Fence and Pipe Diagram



Sometimes 2 or 3 Pond Leveler pipes are needed to handle large watersheds

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Flow Device Types

1. Pond Leveler Pipe
2. Culvert Fence
3. Fence and Pipe System
4. **Decoy Dam**

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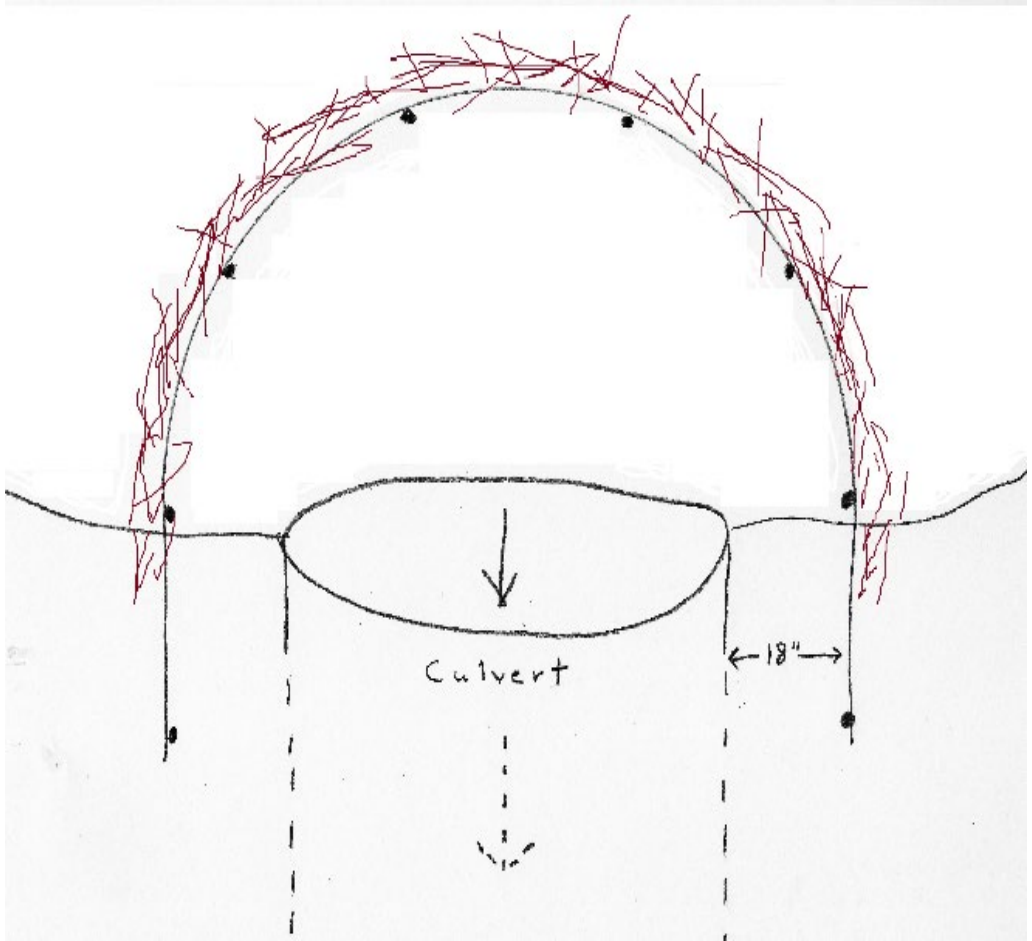
Decoy Dam



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Decoy Dam

Protects culvert
Allows upstream beaver pond

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Flow Device Maintenance

Maintenance checks 1x – 4x annually

Average total labor = 1 hour/year/site

We offer an annual Maintenance Plan with a Money-back Guarantee

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Understand Beavers to Successfully Manage Beavers

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Flow Device Feasibility Issues

Very high flow streams
Development in a floodplain
Drainage ditches or canals

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Success Rates

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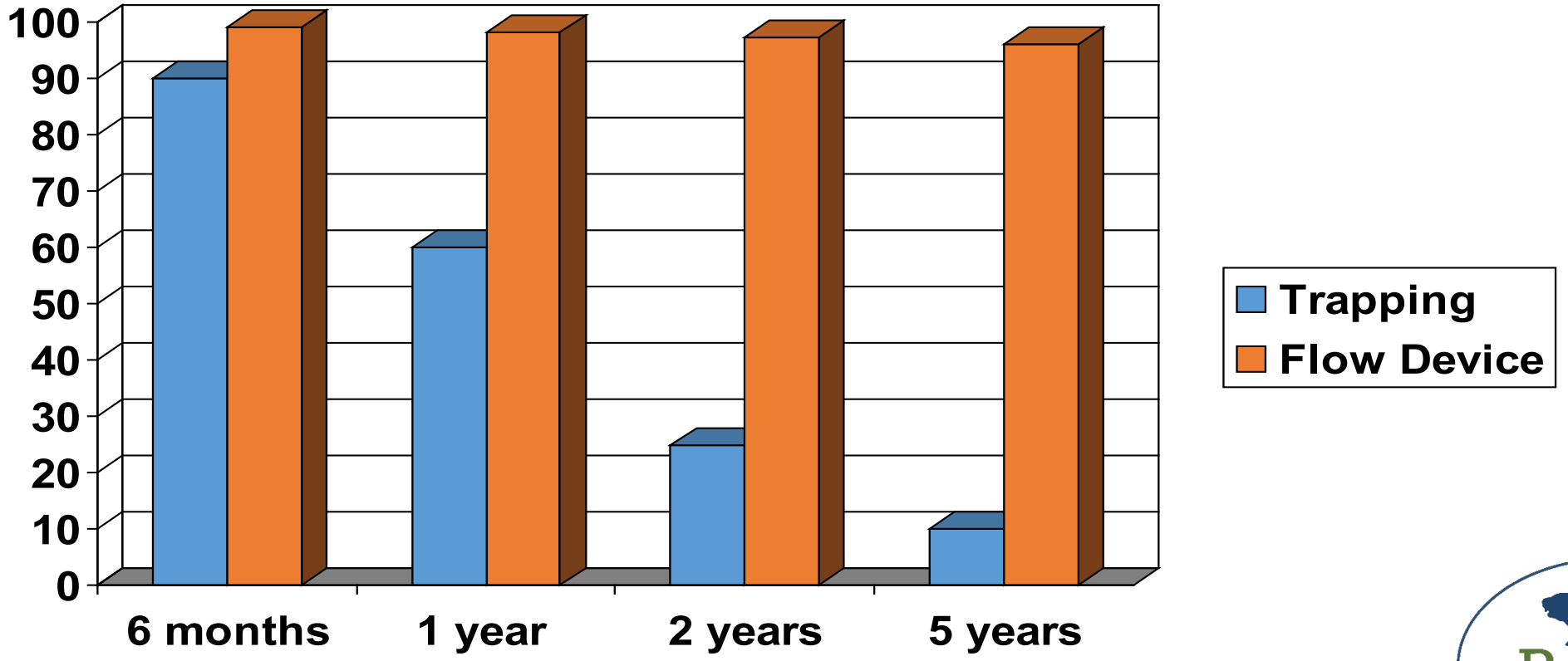
Trapping v. Flow Device Comparison



Sample Size – Over 1,000 total sites

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Billerica 20 Year Beaver Study

55 Conflict Sites

43 - Flow device sites = $229/year
12 - Trapping sites = $409/year

Flow devices save taxpayers $180.00 (44%) USD per site every year

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Flow Devices vs. Trapping

- ✓Cost-effective
- ✓Longer-Term Success
- ✓Environmental & Climate Benefits
- ✓Humane

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Stepwise Approach

1) Tolerance: Do Nothing
2) Dam Breaching
3) Flow Device Install
4) Trap: Lethal = Last Choice

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City of Ottawa
Beaver Site Assessments

12 Beaver Conflict Sites Assessed

Completed August 2025 by Anthony Nugent

(in collaboration with Mike Callahan)

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Site 1: Pagé Road, Orléans

Observations:

Drainage structure with water level control valves and periodic dams at the summer inlet.

Plan:

Install a Fence and Pipe device with two 450 mm dia. pipes

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Site 2: Sawmill Creek, Constructed Wetland Facility

Observations:

Presence of wetland drainage system with beaver activity.

Plan:

Install a Fence and Pipe device with two 450 mm dia. pipes

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Site 3: Helen Rapp Retention Pond

Observations:

A manmade retention pond, but area dry due to no infiltration occurring from the wetland.

Plan:

No beaver management needed. Monitor.

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Site 4: Findley Creek
(Wetland before Helen Rapp)

Observations:

Wetland flow diverted into an adjacent creek to accommodate beaver dams.

Plan:

Stop tunneling to retain water by building a Berm 6 m long and 60 cm high.

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Site 5: Glen Cairn

Observations:

A series of retention ponds. The problematic area contains a sloped grate inlet. Low water level.

Plan:

Due to the inlet type and low water levels, no flow devices are recommended. Trapping may be required.

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Site 6: Cranesbill

Observations:

Beaver dams have been periodically built on the outlet network. Currently removed.

Plan:

If beavers re-establish at the outlet creek, install a Pond Leveler device with a 200 mm pipe.

Site 7: Kanata Beaver Pond

(High Importance Area)

Observations:

This area has significant infrastructure and ecological importance.

Plan:

Install a Fence and Pipe device. Pipe capacity TBD with City engineers. Fence should be reinforced.

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Site 8: Trans-Canada Pathway

Observations:

1400 mm culvert present.

Plan:

If water retention is desired to protect the adjacent wetland, construct a Decoy Dam near the culvert.

If conflict persists, add a Fence and Pipe device.

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Site 9a: 950 Thomas A. Dolan Parkway – Western Dam

Observations:

Beavers damming along a ditch east of a subdivision. Two damming sites identified on either side of a wetland, with a baffle culvert crossing Thomas A. Dolan about halfway.

Plan:

Continue dam removal to prevent basement flooding. Trap if needed.

Site 9b: 950 Thomas A. Dolan Parkway - Eastern Dam

Observations:

Beavers dams in ditch east of a subdivision.

Plan:

Possible Fence and Pipe device
with a 200 mm pipe.

Site 10: Upper Dwyer Hill

Observations:

Beaver dam located in roadside ditch. Current water levels near minimum height.

Plan:

Possible Pond Leveler installation with 150-200 mm pipe if water levels rise in the future.

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Site 11: Upper Dwyer Hill
(Entrance)

Observations:

450 mm culvert currently dammed by beavers.

Plan:

Build a Decoy Dam to protect the culvert. Monitor, and if necessary, install a Fence and Pipe device.

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12 Sites Assessed

1 - Nothing Needed

2 - Trapping

2 - Decoy Dams

4 - Fence and Pipes

0 - Culvert Fences

2 - Pond Levelers

1 - Berm

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Beaver Dam Benefits

Water – Slow and store, removes toxins.

Floods – Decrease damage from large storms

Wildfires – Wet the land: decrease burns, refuge for species, decrease damage downstream, and speed recovery after fires

Stream Health – Cools, less erosion

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Biodiversity

Equal to
Coral Reefs and Rain Forests!

Source: U. S. EPA

https://www.epa.gov/wetlands/why-are-wetlands-important

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Summary

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Thank you, and the City of Ottawa

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Any Questions?

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nuggets

the Humble Beaver pauses to reflect upon the Infinite Mysteries of Life...

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