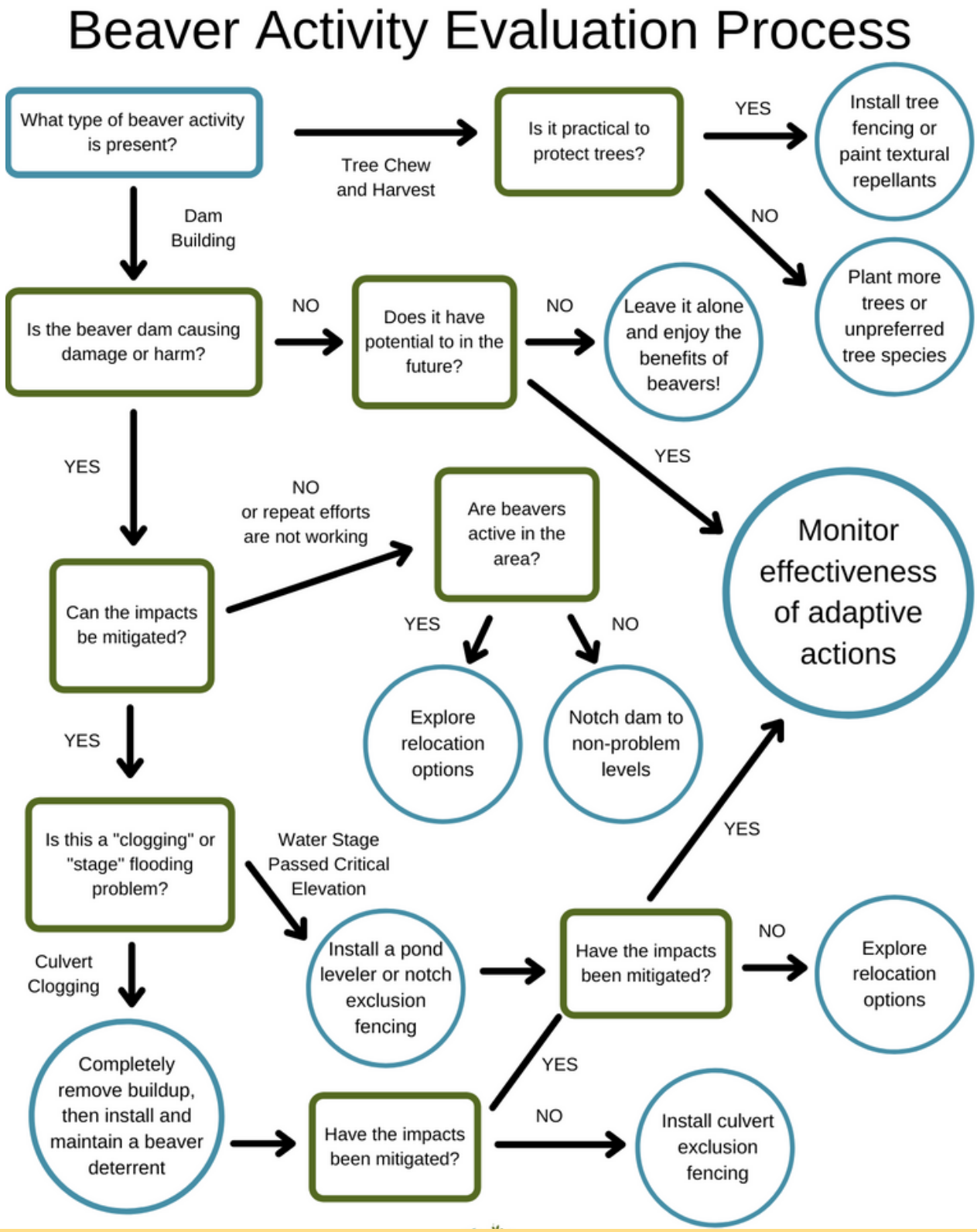
Beaver Management: Guide & Strategies

This document is designed to support those working to manage beavers with coexistence infrastructure. This flowchart directs the decision-making process when beavers colonize a new area. This document also details strategies that are recommended in the flow chart. Please note that a Hydraulic Project Approval (HPA) is required by the state of Washington for any work that occurs in streams including notching beaver dams or installing flow control devices.



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DAM NOTCHING

Dam notching is the act of partially removing a dam. This is typically done to gradually equalize the water level between the upstream and downstream sides of a dam while maintaining the dam's basic integrity. Dam notching should be done incrementally to limit erosive flows and the release of sediment downstream.

However, notching is only a temporary solution, and beavers are likely to rebuild the dam. Notching can be used as an interim solution to resolve flooding while other options are pursued. If the dam you're managing poses a major risk to infrastructure, then consider the following options:

CULVERT EXCLUSION FENCING

Beavers tend to build dams at the mouth or inside of the upstream end of culverts. In such cases, an alternative to frequent dam removal is the installation of culvert exclusion fencing around the mouth of the culvert.

By creating a wider perimeter around the upstream end of the culvert, these devices keep beavers farther away from the sound and feel of water and also make it more difficult for them to fully block flow through the culvert.

Culvert exclusion fencing is traditionally trapezoidal in shape and typically extends 15-20 ft out from the culvert to create a wide perimeter that is difficult for beavers to build around, however, the general shape is dependent on site characteristics. In order to ensure that fish passage is maintained, fencing should be constructed using 6" x 8" welded wire fencing. These device also require regular maintenance to ensure that debris does not build up on the fence.

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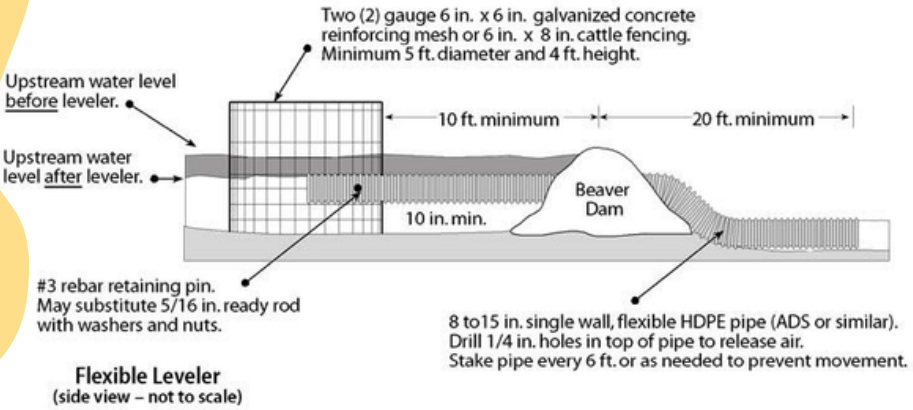
NOTCH EXCLUSION FENCING

A similar technique to culvert exclusion fencing can be used at freestanding dams to alleviate flooding concerns. After notching the dam, exclude the beavers from the notch by building a fence around it. The fence should be at least two feet wide and extend 10-15 feet upstream of the dam and 5-10 feet downstream of the dam. The fencing can be secured with t-posts. In order to ensure that fish passage is maintained, fencing should be constructed using 6" x 8" welded wire fencing. These device also require regular maintenance to ensure that debris does not build up on the fence. These devices are a fairlly new strategy and development of best management practices for design and installation is ongoing. This is the currently accepted practice by WDFW for Type F streams.

POND LEVELERS

Another flow device that can alleviate flooding from free-standing dams is a pond leveler. By notching the dam and placing a large flexible pipe into the notch, you create a channel of flow that is unaffected by the beavers working on their dam. In order to ensure that the beavers cannot build inside the pipe, use fencing to protect the upstream opening. The inlet of the pipe should be placed in deep water 10-20ft upstream of the dam. The pipe and cage should be secured in place with crossed t-posts or rebar.



Flexible Leveler
(side view – not to scale)

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TREE PROTECTION

When trying to prevent beavers from chewing down trees you want to protect, fencing often helps to direct harvesting activity. Using welded wire garden fencing that is 4 feet tall, wrap a layer of fencing around the tree, leaving room for the tree to grow but not so much space that a beaver could still crawl inside and continue chewing. In doing this, you create an obstacle that can discourage harvest.

It is important to fasten the fencing to the ground with landscaping or gardening staples, wooden stakes, or fence posts. If a tree has already been chewed by beavers, but some bark remains, fencing trees can guard them against further harm. Assess individual trees for likelihood of survival before fencing. If there are too many trees to fence in a reasonable amount of time, or site topography makes it impractical to wrap them all, textural repellent can be applied to trees. Abrasive paint can be applied onto trees to deter chewing behavior due to their taste and texture. The repellant is a mixture of 20 ounces of sand per gallon of exterior latex or acrylic paint. This mixture is applied from the base of the tree to a height of four feet and must not be used on saplings less than six feet in height, as continued sapling growth will limit the longevity and effectiveness of the applied repellant. This method works best with smooth-barked trees as less paint is required

If deterring beavers is not feasible, or you are planning a new planting consider planting beaver-resistant trees in the area to lessen the impact of beaver chewing. Beaver resistant trees have a tendency to re-sprout if chewed after roots are well established. Some species are less preferred food sources for beaver making them less likely to be chewed.

Beavers Low Preference Food

- **Sitka spruce**
- **Oregon ash**
- **Elderberry**
- **Cascara**
- **Osoberry**
- **Ninebark**
- **Twinberry**

Beaver Resistant Plants

- **Willows**
- **Salmonberry**
- **Nootka rose**
- **Red osier dogwood**
- **Spirea**

WHO TO CONTACT

For new beaver activity: Acting Seattle Parks and Recreation IPM and Wildlife Coordinator Bridget Kelsh bridget.kelsh@seattle.gov

For HPA permits: https://wdfw.wa.gov/licenses/environmental/hpa

For technical assistance: Beavers Northwest https://beaversnw.org/ **OR** info@beaversnw.org

For more information, visit the full Seattle Parks and Recreation Beaver Management Plan.