Tree Protection:

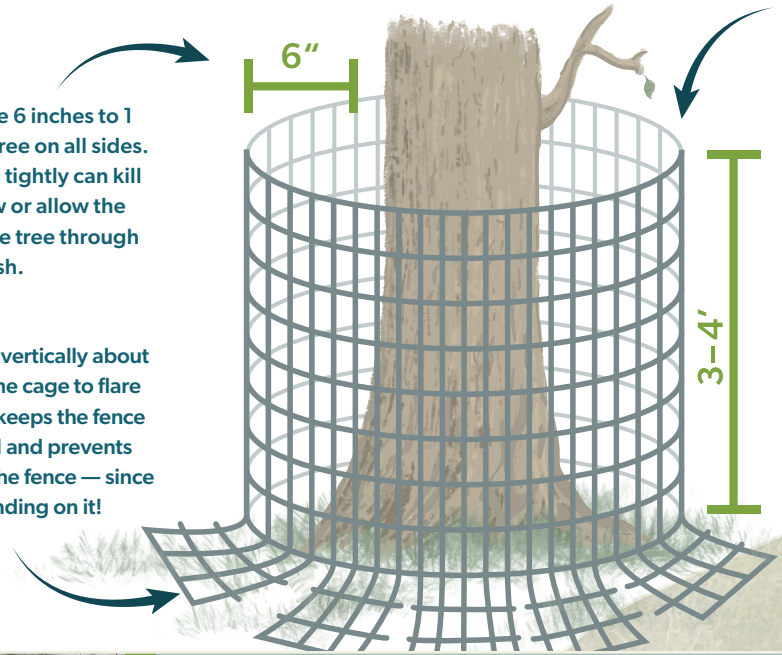
A beaver coexistence tool

Beavers provide many ecological benefits, but it can be frustrating when they cut trees that are special to us. Tree wrapping with wire mesh cages is an immediate and cost-effective solution that can protect mature trees along waterways while allowing beavers to remain in their habitat.

The specifications for wire mesh cages can vary, but all involve wrapping a heavy gauge wire around mature trees to prevent beavers from accessing the trunk. The goal of tree wrapping is to block access to certain trees and should not be used to stop beavers from taking any trees at all. Wrapping too many trees can deprive beavers of enough food to survive the winter, resulting in death, abandonment of the site, or more persistent attempts to get past the cages.

Innovative new approaches

Tree wrapping is not the only tree protection method available. Alternative approaches involve coating the lower portion of the tree trunk with either a sand paint or sand adhesive. Although these methods are generally less reliable, they can be more aesthetic. Use only paints or adhesives that aren't toxic to life.



The cage should be 6 inches to 1 foot away from the tree on all sides. Wrapping trees too tightly can kill them as they grow or allow the beaver access to the tree through the mesh.

Make 8–12 inch cuts vertically about every foot around the cage to flare out its bottom. This keeps the fence flush to the ground and prevents beavers from lifting the fence — since they will be standing on it!

A 2 x 4 inch welded wire (10–14 gauge) is typically used. Choose a wire mesh small enough to keep beavers from poking their heads through but stiff enough to prevent them from chewing it. A beaver can chew through chicken wire!

The cage should be 3–4 feet tall. Anticipate that deep snowpacks or flood waters could allow beavers to access the tree above the mesh.

Will tree wrapping work for you?

Tree wrapping works best in places near water sources where a few large, key trees are prioritized for protection. Certain tree species, like willows and aspen, have co-evolved with beavers. They are well-adapted to being cut and quickly regenerate, often sending up many new shoots in response. For the best chance at success, wrap only a selection of large trees with a focus on ornamentals or species that do not regenerate easily. For situations where every tree requires protection (like in orchards), refer to the crop protection infosheet.

For more information and references visit: projectbeaver.org

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Crop Protection:

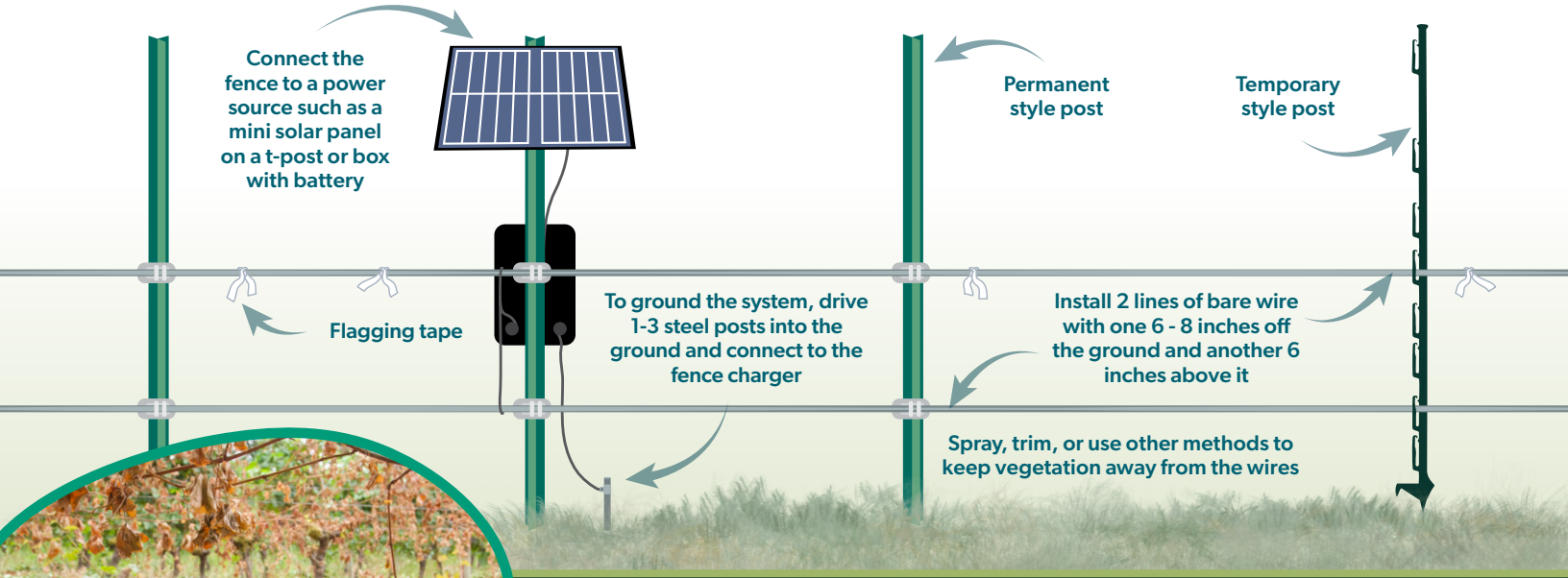
A beaver coexistence tool

Beavers provide many ecological benefits but can be frustrating for landowners if they start feeding on nearby crops. Crop protection using electric fencing is an immediate and cost-effective solution that can protect crops near waterways while allowing beavers to remain in their habitat.

Electric fences can be installed temporarily using step-in posts with built-in insulators or permanently using a system of t-posts with plastic insulators. They require both a simple grounding system and a power source—and will function well on either car batteries or a solar panel if AC power is not available.

Understand the risks!

- The low-laying wire can be a trip hazard to people, livestock, and other wildlife. Tie white flagging tape along the top wire to increase visibility.
- During hot and dry summers, electricity can easily start grass fires. Ensure that grass is well trimmed during these periods or consider turning off the fence during active fire bans.
- Consider whether solar panels have a high risk for theft in your area and plan accordingly.



Will crop protection work for you?

Crop protection with electric fencing works very well. In many cases, beavers will not try and return after a single encounter with the fence. Temporary fences can be used for rotating crops or to protect restoration planting. Permanent fences are recommended for orchards and vineyards. Steel mesh fences are also effective at excluding beavers from crops, though more costly. For situations where only certain trees require protection, refer to the tree protection infosheet.

For more information and references visit: projectbeaver.org

PROJECT BEAVER

Pond levelers:

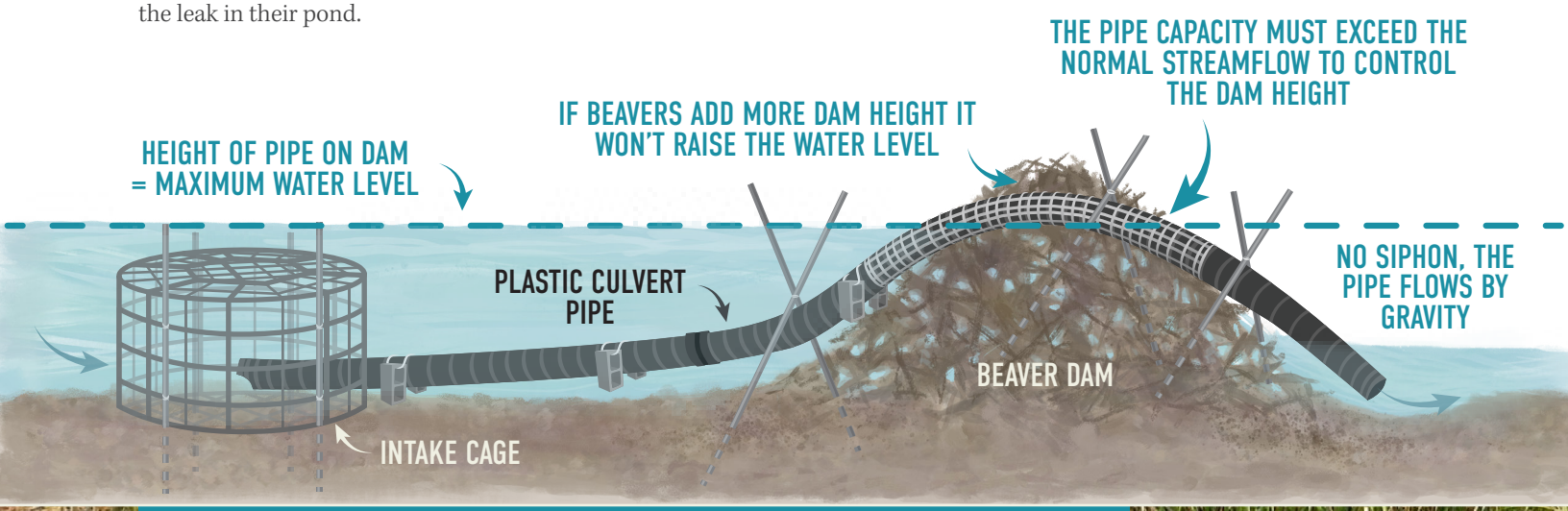
A beaver coexistence tool

The many benefits of beaver ecosystems are harder to appreciate while their dams are flooding roads, crops, homes, or other infrastructure. With coexistence tools, human property can be protected while allowing beavers to remain on the landscape. Pond levelers are an immediate and cost-effective solution that prevent flooding by controlling the maximum water height of the beaver pond. During high flows, excess water moves downstream but during low flows or drought, water is stored in the pond.

The goal of a pond leveler is to set a maximum water height for the pond while minimizing disruption to the beaver family and their habitat. Pond leveling devices use a plastic culvert pipe to create a permanent leak in the dam. The pipe is linked to a caged intake located upstream within the beaver pond. A cage around the intake of this pipe keeps beavers at arm's length, so they do not sense the leak in their pond.

Why use a pond leveler?

- **Cost:** The installation and maintenance of a pond leveler can be less expensive than repeatedly removing dams and trapping beavers.
- **Ecosystem benefits:** Beavers and their dams improve watershed health and are important for numerous other species including many fish and birds.
- **Longevity:** Pond levelers can last 5-10 years or longer if properly maintained.



Will a pond leveler work for you?

Every site with beaver activity is unique. Pond leveler designs can be adapted for different situations, including shallow or narrow sites. However, in all situations, pond levers are most effective when every effort is made to keep the beaver pond as big as possible. Capping the water level too low will force the beavers to move out and create a new beaver dam. For more information, access the *Best Management Practices for Pond Levelers and Culvert Protection Systems: A guide for using flow devices to coexist with beavers* on the Project Beaver website.

For more information and references visit: projectbeaver.org

PROJECT BEAVER

Culvert protection systems:

A beaver coexistence tool

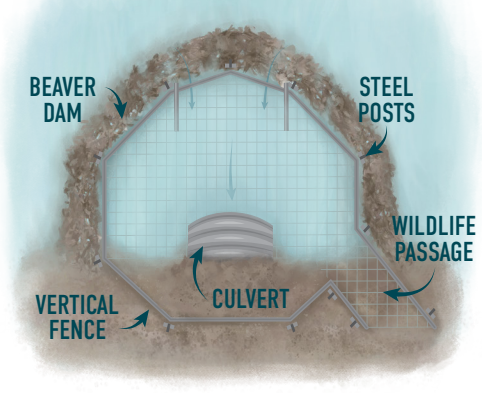
The many benefits of beaver ecosystems are harder to appreciate while their dams are flooding roads, crops, homes, or other infrastructure. With coexistence tools, human property can be protected while allowing beavers to remain on the landscape. Culvert protection systems are immediate and cost-effective solutions that can be used to prevent beavers from blocking culverts.

Beavers are attracted to culverts because they are easy to dam. Culvert protection systems can either physically exclude beavers from the culvert or make other damming locations more appealing. They allow beavers to still use the stream as habitat while ensuring the culvert can continue to function normally. Some common designs include the trapezoidal culvert fence, anchor fence, and anchor dam.

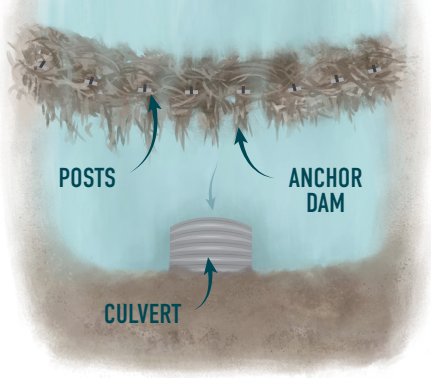
Why use a culvert protection system?

- **Cost:** Can save money over time compared to repeatedly cleaning blocked culverts and trapping beaver.
- **Ecosystem benefits:** Beavers and their dams improve watershed health and are important for numerous other species including many fish and birds.
- **Longevity:** Culvert protection systems can last 5-10 years or longer if properly maintained.

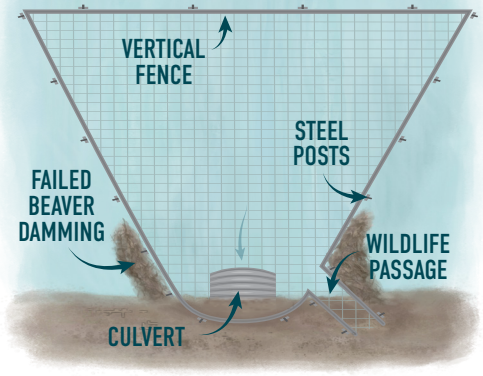
An anchor fence prevents beaver from damming the culvert directly but still allows them to dam along the fence.



An anchor dam involves starting a beaver dam at a controlled location, inviting beaver to continue building on it instead of at the culvert.



The trapezoidal culvert fence works by making the culvert a difficult place to dam, promoting beaver to choose a different location.



Will a culvert protection system work for you?

Every site with beaver activity is unique, and culvert protection designs can be adapted for many different situations. In situations where dam height also needs to be controlled, the anchor fence and anchor dam systems can be paired with pond levelers. Depending on the ecology of the location, designs may need modification to facilitate the safe passage of fish and wildlife. For more information, access the *Best Management Practices for Pond Levelers and Culvert Protection Systems: A guide for using flow devices to coexist with beavers* on the Project Beaver website.

For more information and references visit: projectbeaver.org

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