

A “Tail” of Two Neighbors: Beavers and YOU!



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Icebreakers

- Name, Community represented
- What interested you about this workshop?
- What do beavers mean to you?



Where We're Headed

1. The vital role of beavers in our natural environment
2. Challenges presented by beavers
3. Ways that we can co-exist with beavers



Thinking like a beaver...

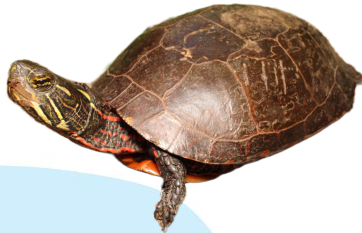
- Physical traits
- Life cycle
- Habitat
- Food
- Historical and current presence in our watersheds









Why Beavers Matter

Wildlife Habitat

- Keystone species
- Moving & slow-water habitat
- Create wetland ecosystems
- Increase biodiversity
- Fish, amphibians and aquatic insects
- Birds, waterfowl, reptiles, mammals



Best suggestions

	Louisiana Waterthrush <i>Parkesia motacilla</i>	▼
	Tufted Titmouse <i>Baeolophus bicolor</i>	▼
	Yellow-billed Cuckoo <i>Coccyzus americanus</i>	▼
	Acadian Flycatcher <i>Empidonax vireescens</i>	▼
	Blue-gray Gnatcatcher <i>Poliptila caerulea</i>	▼
	Carolina Chickadee <i>Poecile carolinensis</i>	▼

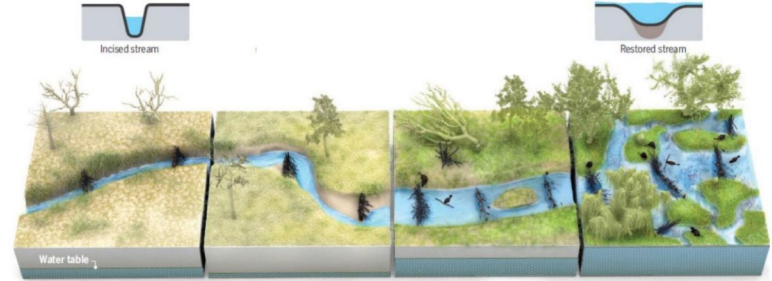
Why Beavers Matter

Hydrology

- Replenish unconfined aquifers
- Recharge & elevate the water table
- Regulate & restore stream base flow
- Drought-proof the landscape
- Dams & wetlands reduce peak flows



Process!



ian

Why Beavers Matter

Water Quality

- Slow it down, spread it out, soak it in
- Dams trap large amounts of material
- Reduce suspended sediments
- Wetland plants uptake nutrients
- Ponds serve as sinks for contaminants



Why Us?

- Anne Arundel County DPW Bureau of Watershed Protection & Restoration
 - Beavers align with the Bureau's core goals of
 - Improving water quality: nutrient and sediment capture
 - Slowing stormwater surges, reduces flash flooding
 - Creating wildlife habitat: herons and other waterfowl, amphibians, otters, turtles, and a variety of insects
 - Supports Chesapeake Bay restoration goals
 - Interest in lower maintenance costs
 - Reduction in annual trapping operations
- Center for Ecosystem Recovery
- MD Beaver Working Group
- BeaverCorps

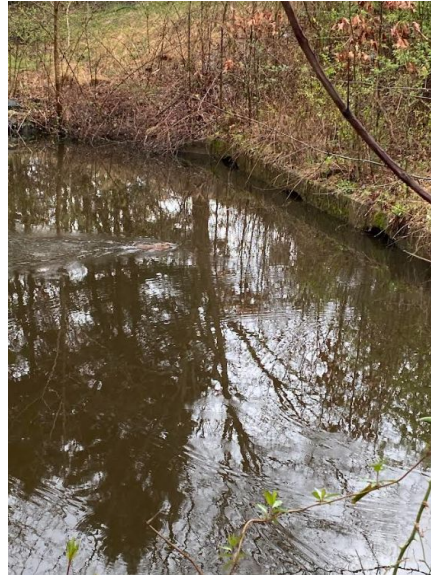


DPW and Beavers...

Flooded Roadways



Inundated Culverts (before and after)



DPW and Beavers...

Flooding impacts to our pumping stations



Sanitary Manhole water intrusion and inundation

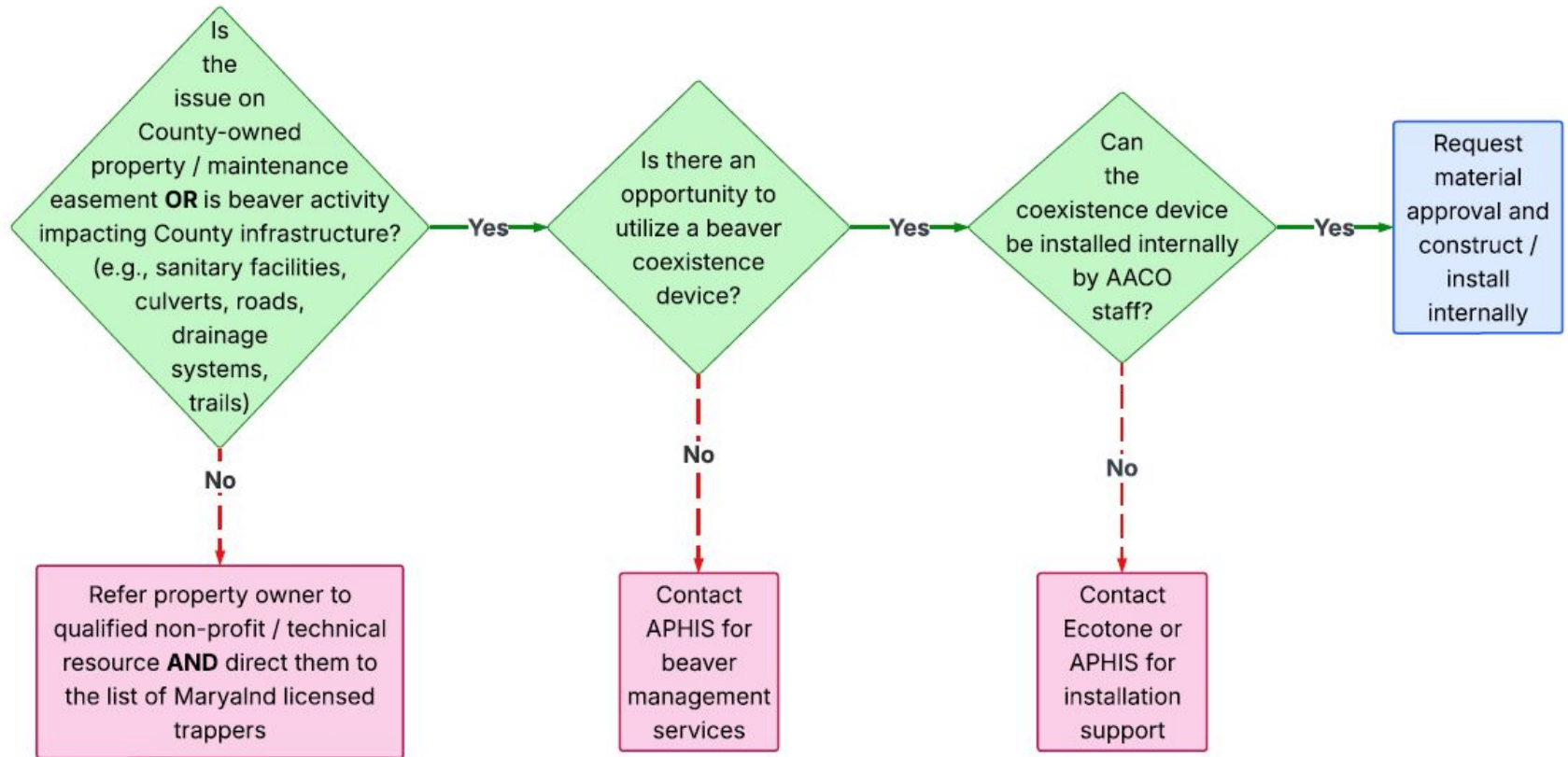


DPW and Beavers...

Ponds holding more water than design was intended for. Causing potential structural failures and safety concerns.



Beaver Management/Coexistence Decision Tree



Why You?

- 60% of land in the County is privately owned
- Private community representatives manage many areas where beaver activity occurs:
 - Landscaping
 - Stormwater facilities
 - Floodplains and stream corridors
- You set the tone for your community:
 - Education vs Reaction
 - Tolerance vs Complaints
- A well-informed community reduces:
 - Conflict
 - Misinformation
 - Repeated emergency calls



The 2 Main Issues - Tree Felling & Flooding



Beavers teach
us to embrace
change!



How to coexist (+ maintain)

- Tree protection
- Flow devices
- Exclusion fencing
- Dam notching



Tree Wrapping

How to Wrap Trees

Materials:

- 14 gauge welded wire fencing (at least 4ft tall) with 2in x 4in mesh
- Landscape pins/staples
- Wire cutters/pliers

1

Select priority trees you want to protect and gather materials.

2

Cut enough fencing to leave ~12in between the trunk and the fencing around the entire circumference.

3

Secure fence around the tree and bend the cut wire edges to secure the seam. Secure the base with landscape pins.



www.coexistwithbeavers.org



Flow Devices

- Flow devices to regulate pond levels, and prevent culvert blockages

Notch exclusion device



Pond leveler device

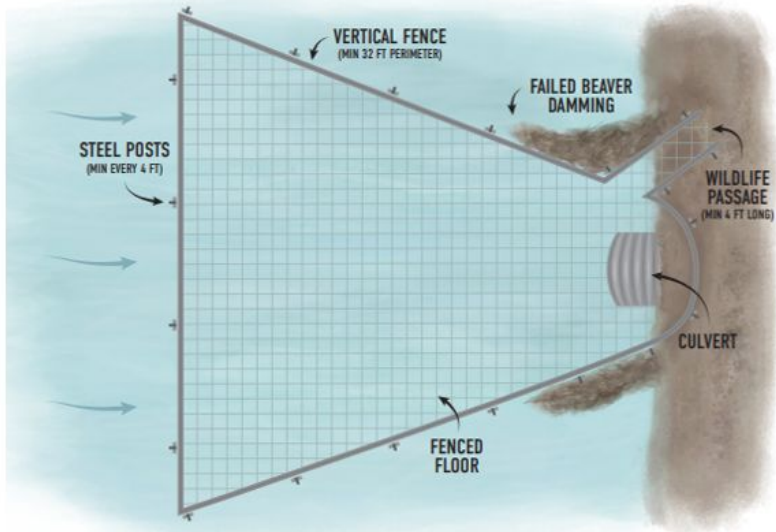


Culvert protection device



Flow Devices

Culvert fence



Trapezoidal culvert fence.

Pond levelers

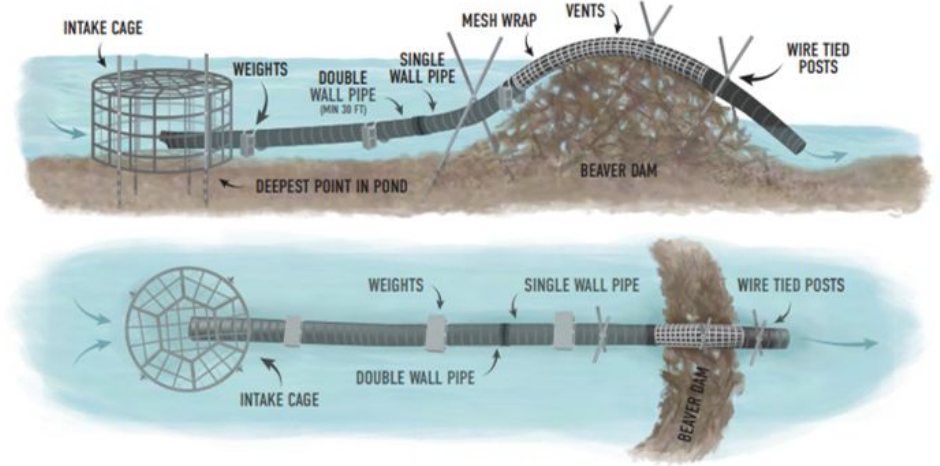
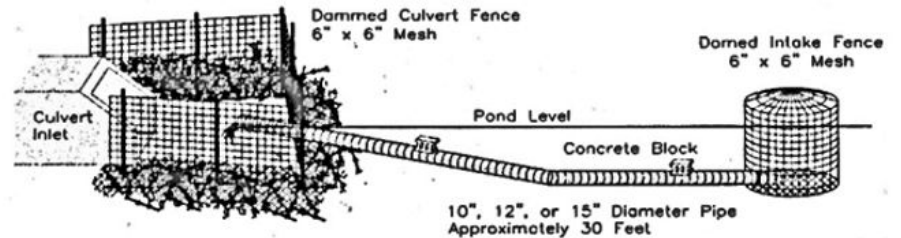
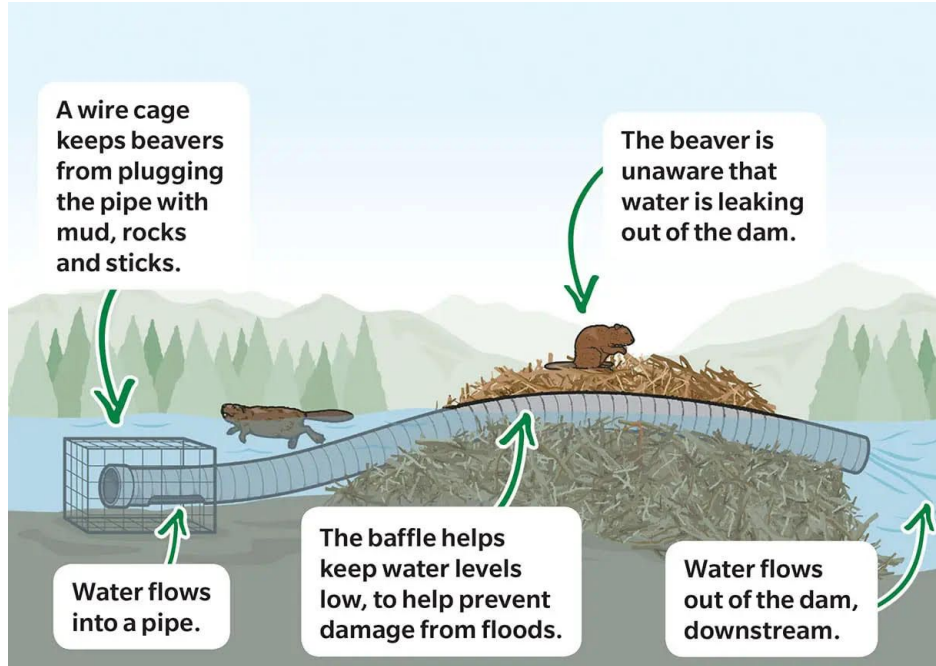


Figure 1. Standard pond leveler with no modifications.

Fence and pipe



How Flow Devices Work



Pond leveler devices work best when maintaining a permanent pool depth of greater than 3ft.

Dam Notch Exclusion Fencing



- This device works well when wanting to keep the beaver at the site with a minimum permanent pool depth of 1.5-2ft.
- Place a notch in the dam to desired pool elevation, typically in line with the existing stream channel. Then place fencing around the notch and extend both upstream and downstream to protect from future blocking.

Comparing Coexistence to other Methods

PROBLEM: Tree-chewing (in Virginia)

	Legal	Humane	Effective short-term	Effective long-term	Affordable
Lethal trap	Yes	No	Yes	No	Yes
Relocation	No	Yes	Yes	No	No
Accept tree loss	Yes	Yes	No	No	Yes
Fence/paint/wrap trees	Yes	Yes	Yes	Yes	Yes

PROBLEM: Flooding (in Virginia)

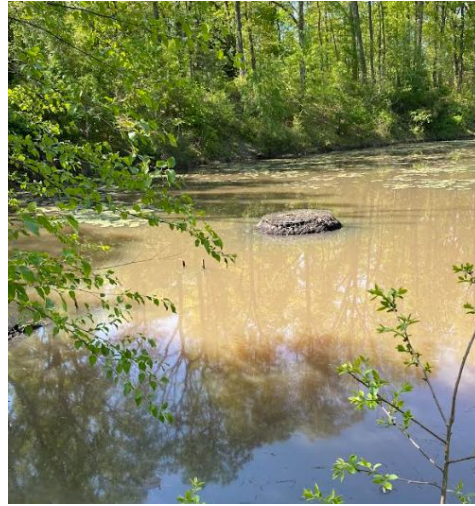
	Legal	Humane	Effective short-term	Effective long-term	Affordable
Lethal trap	Yes	No	Yes	No	Yes
Relocation	No	Yes	Yes	No	No
Accept flooding	Yes*	Yes	No	No	Yes
Remove dam	Yes	Yes	Yes	No	Yes*
Install flow device	Yes	Yes	Yes	Yes	Yes

DPW and Beavers...this time it's good!

Debris catch fencing installed by DPW being used as a foundation for a beaver dam.



Coexistence Device Maintenance



- Should be inspected annually ensure they are functioning properly.
 - Tree cages should be checked and adjusted in perimeter to allow for tree growth.
 - Flow devices (culvert protection, pond levelers, exclusion fencing) should be inspected that they are maintaining proper flow, and not blocked by debris.

Help Spread the DAM Word!



GET TO KNOW YOUR NEIGHBOR... THE BEAVER!

Anne Arundel County is committed to protecting and restoring critical native beaver habitats in your area, working cooperatively with the community. Beavers provide a host of water quality and wildlife benefits to both the areas they inhabit and downstream.

Do you have questions or concerns about living with beavers?
Visit our website to learn more, or drop us a line!

Visit www.AARivers.org > Education & Outreach > "Living with Beavers"

You may also contact BWPR's Outreach
Coordinator, Sally Albright at
410-222-0136 or pwalbr00@aacounty.org



“Who ya gonna call?”

- “Living with Beavers” webpage
<https://www.aacounty.org/public-works/bwpr/education-outreach/understanding-stormwater/living-beavers>
- Flow chart
- If you see a beaver, let us know! (410) 222-4240
- Maryland DNR Nuisance Wildlife page for list of trappers
https://dnr.maryland.gov/wildlife/Pages/plants_wildlife/nw.aspx



“Who *else* ya gonna call?”

Mission: To educate the public about the benefits of coexisting with beavers and to provide resources and financial support to address human-beaver conflict using nonlethal management strategies.

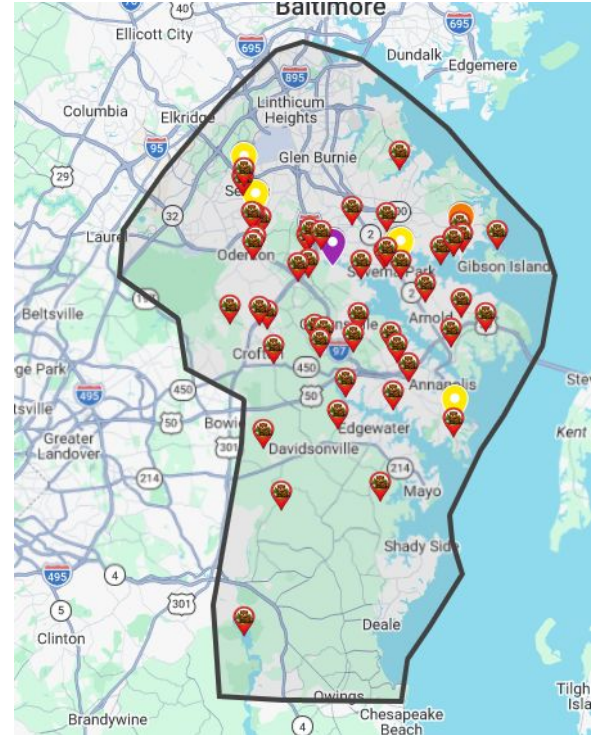
Geographic focus: Virginia, West Virginia, Maryland, Washington D.C.

Website: www.coexistwithbeavers.org | **Email:** azak@coexistwithbeavers.org



If you see a beaver, let us know!

- BWPR keeps a log of all beaver activity seen and reported within the County.
- Call [\(410\) 222-4240](tel:4102224240) to report beaver activity in your area.



Contact Us

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Website: www.aarivers.org



How to Coexist with Beavers



DON'T trap beavers



DO wrap trees



DON'T destroy dams



DO install a pond leveler



DON'T repeatedly unclog culverts



DO install a culvert fence



DON'T curse a beaver

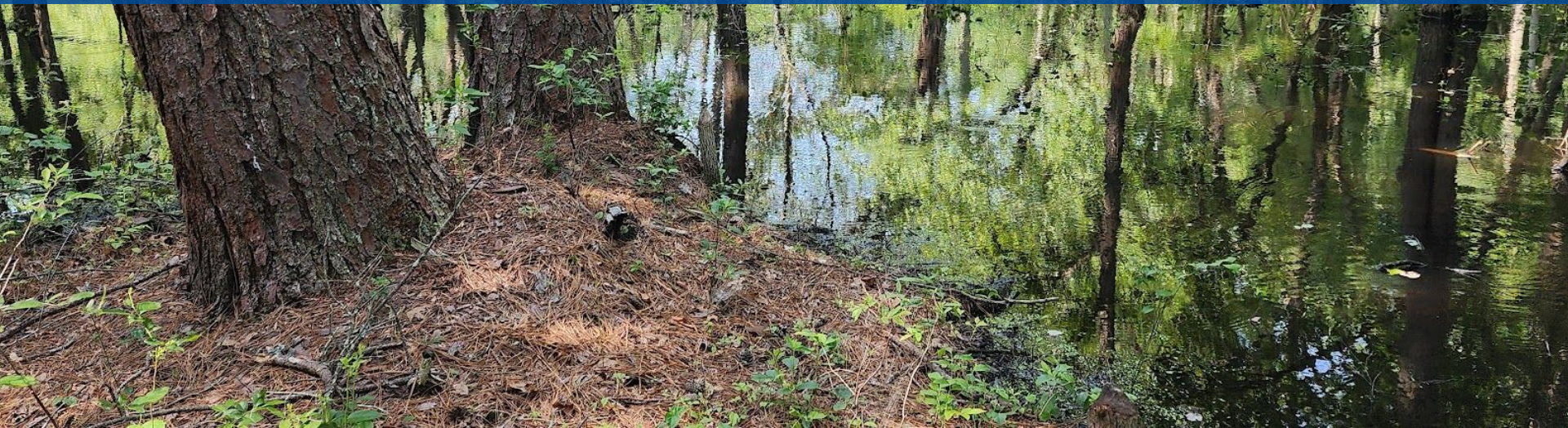


DO thank a beaver





Comments and Questions?



Check out all the wildlife at the “Dam Cam”!

