

What Did You Do to My Stream??

How to Effectively Communicate Stream Restorations to the Public

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Dept. of Public Works, Stormwater Planning

A Fairfax County, VA Publication



August, 2023

What Are We Talking About Today?

- Who is WEO?
- Why Signs?
- How to Make Signs
- How to Make Better Signs



Who is WEO?

Chris
Mueller



Dionna
Bucci

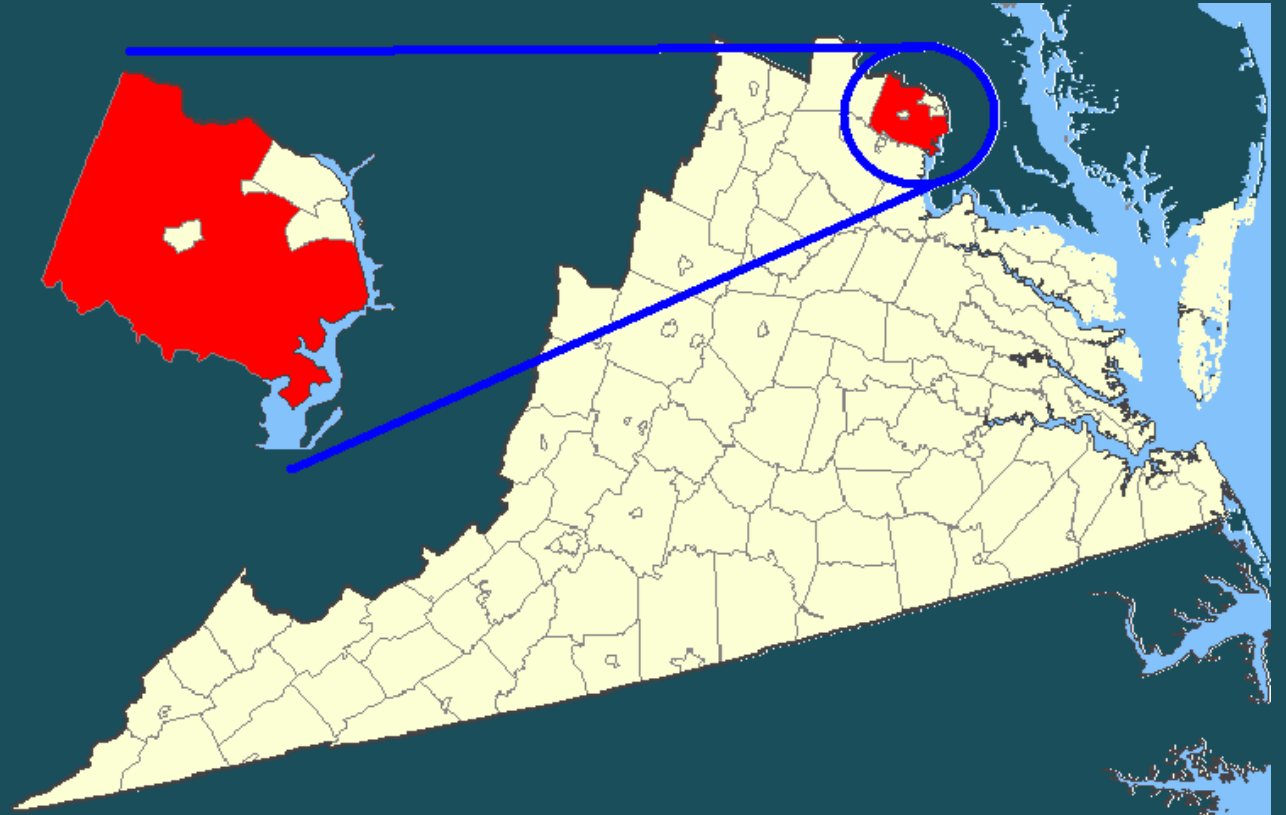
Danielle
Wynne

Eric
Collins



Where are WE(O)?

- Fairfax County, VA
 - Land area of approximately 400-square-miles
 - Population of >1.2 million residents
 - 30 watersheds, >800 miles of streams





Where are WE(O)?





How is Fairfax County Helping our Watersheds?



Structural



Non-Structural





Why Signs?







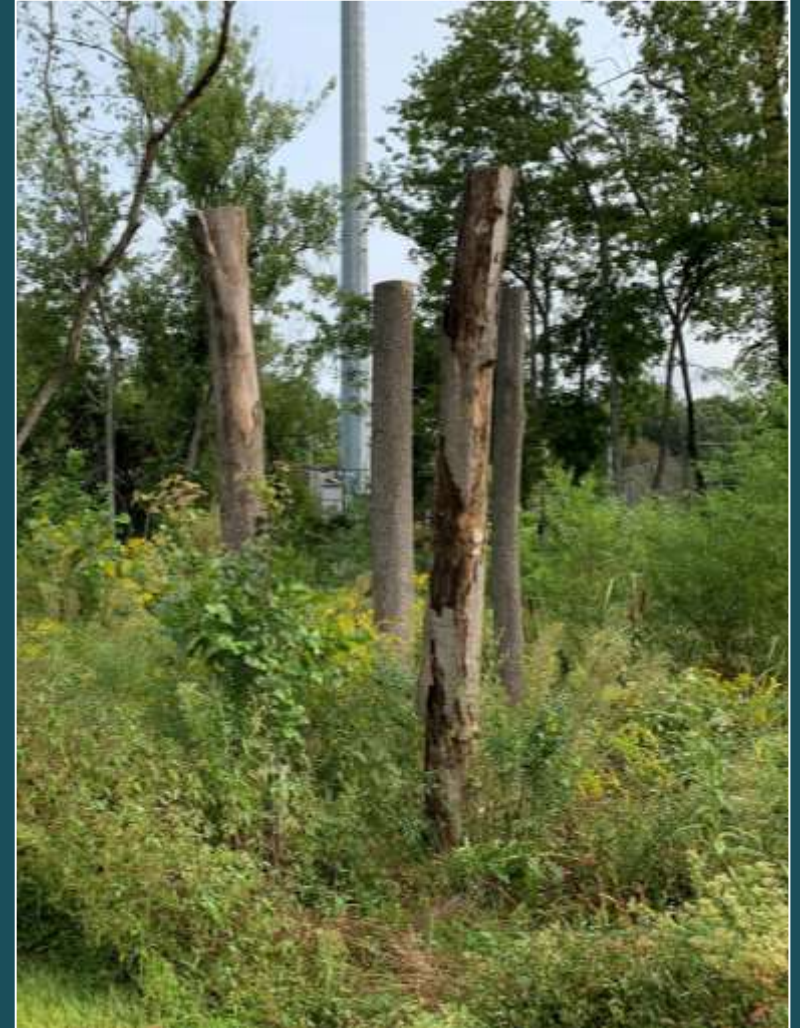
What Did They Do To My Stream?

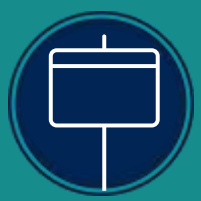


“Why did they leave those trees? It looks ugly.”



Stream Restoration Techniques





How to Make Signs: Site Walk





Identified Locations

Mason District Park P...
Dionna Bucci

3 views
Published 5 hours ago

SHARE

Sign Locations

- Forest Snag Sign
- Rock and Roller Sign
- Pocket Wetland Sign
- Cross Vane Sign
- Pollinator Meadow Sign

Mason Park field
Playground
Tennis Court
Amphitheater
The Traveling Shepherd Coffee (Annandale...)
Mason District Park
Local park with trails & picnic tables
Pudge Rodriguez Field
Unleashed Abil Coaching Peop
Sleepy Hollow Rd
Breezewood Ln
Sleepy Hollow Rd

Google My Maps
Map data ©2023 Google Terms 100 ft
Keyboard shortcuts



How to Make Signs





ROCK N' ROLLER



What is a ROCK N' ROLLER?



When trees fall into shallow waters the fallen logs create riffles, the part of a stream with shallow, turbulent water. **Rock n' rollers**, or log rollers, are used in stream restorations to mimic these natural riffles.



By "crisscrossing" logs down the channel, water in the stream gets "rolled" back and forth, stirred up, and directed toward the center of the stream.



This increases the amount of **dissolved oxygen** in the stream, which is necessary for aquatic life, and provides habitat for aquatic species like fish. Slowing the water down and keeping it away from the edges of the stream also **reduces erosion**.

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Aquatic insect larva, like stoneflies and mayflies, and fish, like stone rollers, require highly oxygenated water to survive.



The insects and fish that thrive in log roller habitat serve as food for larger animals like the great blue heron and painted turtles.





CROSS VANE



What is a CROSS VANE?



The structure in the stream in front of you is called a **cross vane**. It is a stream restoration design that uses rock, wood, or a combination of both, to create a u-shaped structure that redirects the flow of water to the center of the stream. This **reduces erosion** on the sides of the channel.



These structures have two "arms," one along each side of the channel, that are buried in the streambank. The "sill" crosses the stream and looks like a small waterfall.



Cross vanes also create riffles upstream and pools downstream of the sill, providing a range of habitat for wildlife; some aquatic species like to live in fast moving water called riffles, while others prefer slower pool habitats.

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The trees planted along the streambank reduce erosion by holding the bank together with their roots and shade the stream with their branches and leaves.

ARM

SILL

ARM



Sunfish prefer slow moving water, like pools, while dace prefer fast-moving water, like riffles.





FOREST SNAG



What is a FOREST SNAG?



While walking through this restored stream area, you may have noticed multiple large, dead trees left standing. These dead trees have been left standing on purpose to serve as important **habitat**.



Decaying wood provides nutrients for a variety of **decomposers** like fungi, insects, and invertebrates. These decomposers, in turn, become food for many species of birds and mammals.



Forest snags also provide key habitat for woodpeckers, who use their powerful beaks to drill cavity nests in the softer dead wood. Woodpeckers also create the majority of habitat for **secondary cavity nesters**, such as bluebirds and tree swallows, who take over the cavity nest once the woodpeckers move out.

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These trees are cut off at the top for safety reasons, otherwise the tops may break and fall off while the tree decomposes.



Some woodpeckers have a non-verbal form of communication called Drumming, beating their beaks against hard hollow surfaces in patterns unique to each species.





POCKET WETLAND



What is a POCKET WETLAND?



Pocket wetlands are constructed areas designed to hold water for weeks or months at a time. These small wetlands create habitat for wildlife and reduce flooding.



They support both aquatic and terrestrial life, providing the perfect environment for certain water-loving plants like skunk cabbage. This unique plant produces one of the earliest spring flowers, providing much needed food and shelter to many critters like bees, flies, and spiders.



Pocket wetlands help reduce flooding by acting like sponges and slowly absorbing and holding water when it rains. Some of this water drains into the ground while some is used by the roots of plants.

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Through a chemical reaction, skunk cabbages produce heat, allowing the plant to maintain a temperature of 72F regardless of how cold it is outside.



Spring Peeper frogs, a predator of mosquitos, require wetlands to complete their life cycle from egg to tadpole to adult.





FLOODPLAIN



What is a FLOODPLAIN?



When it rains a lot, our streams overtop like water overflowing a bathtub. When this happens, excess, fast-moving water spills out of the stream and into nearby flat areas called **floodplains**.



While floodplains may look messy and muddy, they are very important for keeping our streams healthy. These large flat areas spread the water out, causing it to slow down and drop things it picked up like soil, sticks, and even litter. This helps keep our streams clean.



The dropped nutrient-rich soil feeds unique and diverse plants in the floodplain. These plants, in turn, provide food and habitat for many different species of animals, making floodplains an important part of our community.



Some plants, like the cork oak, require floodwater to spread their seeds.







How to Make Better Signs



- We should rewrite these signs with more interpretive language.
- NAI defines interpretation as "a purposeful approach to communication that facilitates meaningful, relevant, and inclusive experiences that deepen understanding, broaden perspectives, and inspire engagement with the world around us."

Tammy Schwab – Outreach and Education Manager, Fairfax County Park Authority



- Signs should have a **REASON**
 - Signs should have supporting information on **WHY** this is important
 - *So what??*
 - To make someone care about the thing, you need to connect your reader to **tangibles, intangibles, and universals**
-

Yosemite has many different types of rocks

Theme Statement: The rocks (tangible) of Yosemite tell many stories of beauty, danger, and mystery (intangible).

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Aquatic insect larvae like stoneflies, mayflies, and fish stone rollers, require highly oxygenated water to survive.

RESTORING HABITAT

Why were these zigzagging logs placed here?

Using human engineering to mimic a natural stream, these **logs** placed in the water keep our streams healthy for humans and animals.



When trees fall into shallow waters, the fallen logs create **riffles**, the part of a stream with fast moving, choppy water. **Rock n' rollers** are logs placed in the stream to mimic these healthy, natural riffles.



By zigzagging logs down the channel, water in the stream gets "rolled" back and forth and stirred up. This increases the amount of **oxygen** in the water and **provides habitat** for stream critters like fish and bugs.



These logs also act like a speed bump, slowing down water, and **reducing stream erosion**.

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Pocket wetlands help reduce flooding by acting like sponges and slowly absorbing and holding water when it rains. Some of this water drains into the ground while some is used by the roots of plants.



Spring Peeper frogs, a predator of mosquitos, require wetlands to complete their life cycle from egg to tadpole to adult.

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RESTORING HABITAT

Why does it look swampy here?

These small **wetlands** protect people and property from flooding and restore vital habitat for unique plants and animals.



Pocket wetlands are built to hold water permanently or seasonally. They recreate naturally occurring wetlands that support a diverse range of **unique water-loving plants and animals**, including birds, insects, and amphibians.



Many amphibians, like Spring Peeper frogs, a predator of mosquitos, require wetlands for their entire life cycle from egg to adult.

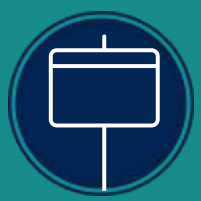


Pocket wetlands help **reduce flooding** by acting like sponges, slowly absorbing and holding excess water when it rains. Native wetland plants also help to **improve the health of our water** by filtering out pollutants.

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Now What? Instillation!





Placement is Important





Audio Options - DEI





Dynamic QC codes can tell us:

- How many people scan the QR Code
- When did they scan it
- Where did they scan it
- Which device did they use to scan the QR Code
- Which browser did they use to see the encoded content
- What is the operating system of the device



What Did They Do To My Stream?



“Wow! Look at those snags.”



WE(O) Would Like To Thank You For Your Time Today!

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