

Watershed Restoration Program and Purpose of the Sherwood Forest Stream Restoration Project



Stream Restoration Community Walk

May 21st, 2013

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Project website www.montgomerycountymd.gov/restorationprojects

Click Northwest Branch, then Sherwood Stream Restoration



Introductions

- Jennifer St. John and Paul Bogle
 - Montgomery County Department of Environmental Protection (MCDEP), Watershed Restoration Program staff:
 - Provide public outreach, real estate, and in-kind services, partial money for project
- Claire O’Neill and Carol Ohl
 - U.S. Army Corps of Engineers (USACE), Project & Design Managers:
 - Manage construction & design contracts; Primary POC between sponsors
- Bob Palmer
 - Rummel, Klepper & Kahl (RK&K), Design Engineer
 - Provide final design for project and engineering services during construction
- Maryland National Park & Planning Commission (M-NCPPC)
 - Caretaker and regulator for projects on parkland
- Angler Environmental
 - Contractor performing work

Stormwater 101



- Impervious (hard surfaces)
= Increased runoff & pollutants
- Reduced groundwater recharge
(infiltration)

- Storm drain systems convey heated, dirty water directly to streams



- Degraded aquatic habitat & water quality



Stormwater 101

- Increased storm flows and decreased base flows



- Streams eroded, incised

- Infrastructure threatened

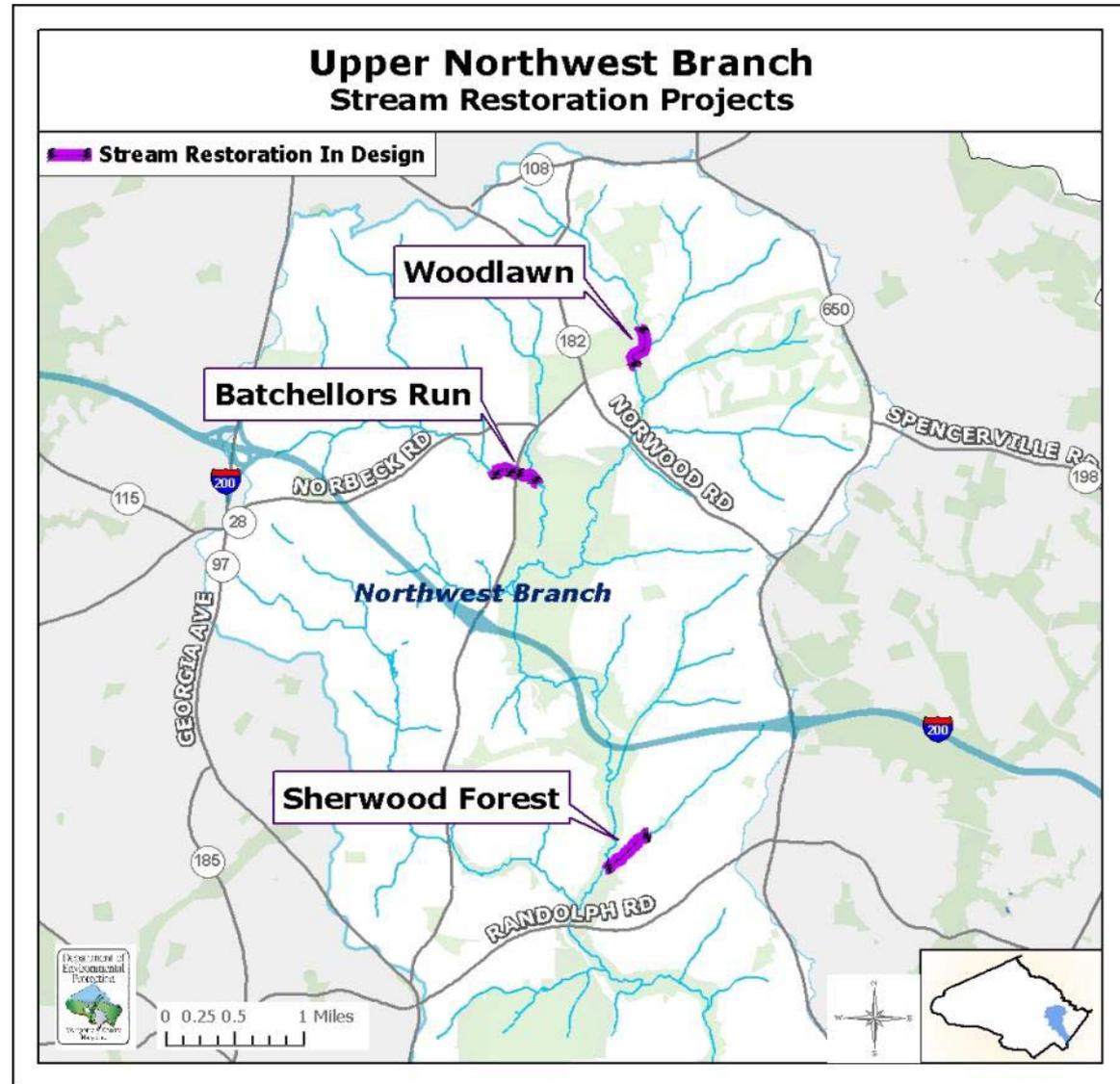


Background on Project Selection

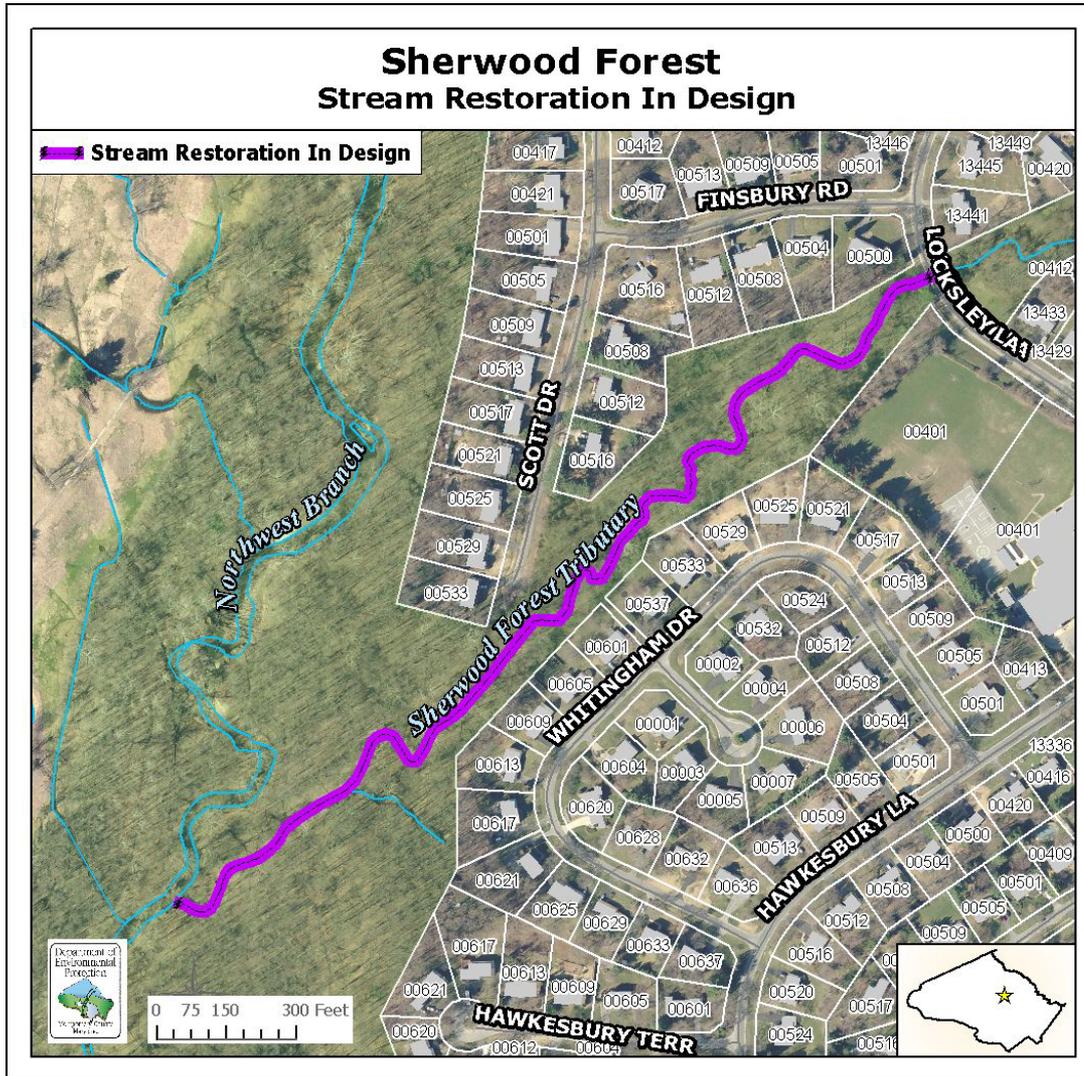
- The Sherwood Forest tributary was identified as a priority for restoration in the Northwest Branch Watershed Feasibility Study (July 2000).
- This site was not found to be severely degraded, but was selected as an opportunity, through careful repair and enhancement of habitat, to maintain/improve stream stability that would otherwise continue to degrade.
- Montgomery County's National Pollutant Discharge Elimination System (NPDES) Permit (issued in 2010) Requires:
 - New stormwater management for 20% of existing impervious area that is currently unmanaged (~ 4,292 acres).
 - Meet goals set forth in the "Potomac River Watershed Trash Treaty"
 - Identify pollution sources and improve water quality in all county watersheds
 - Increase use of Environmental Site Design (ESD), or Low Impact Development (LID)

Background on Project Selection

- The Sherwood Forest tributary flows into the Northwest Branch watershed, and eventually the Anacostia River.
- The Batchellors Run and Woodlawn stream restoration projects are also planned in the Upper Northwest Branch and will be completed with the Sherwood Forest restoration project.



Project Location & Goals



- Improve aquatic habitat by enhancing pool and riffle fish habitat and creating overhead cover for fish;
- Stabilize eroding streambanks to reduce sediment entering the stream;
- Reforest stream banks for added bank stability and overhead cover; and
- Construct wetlands for amphibian habitat and improved water quality.

Problems & Opportunities

- Channel Constrictions

Existing



Proposed



- Grade Control

Existing



Proposed



- Eroded streambanks & inadequate stream buffers

Existing



Proposed



Typical Details

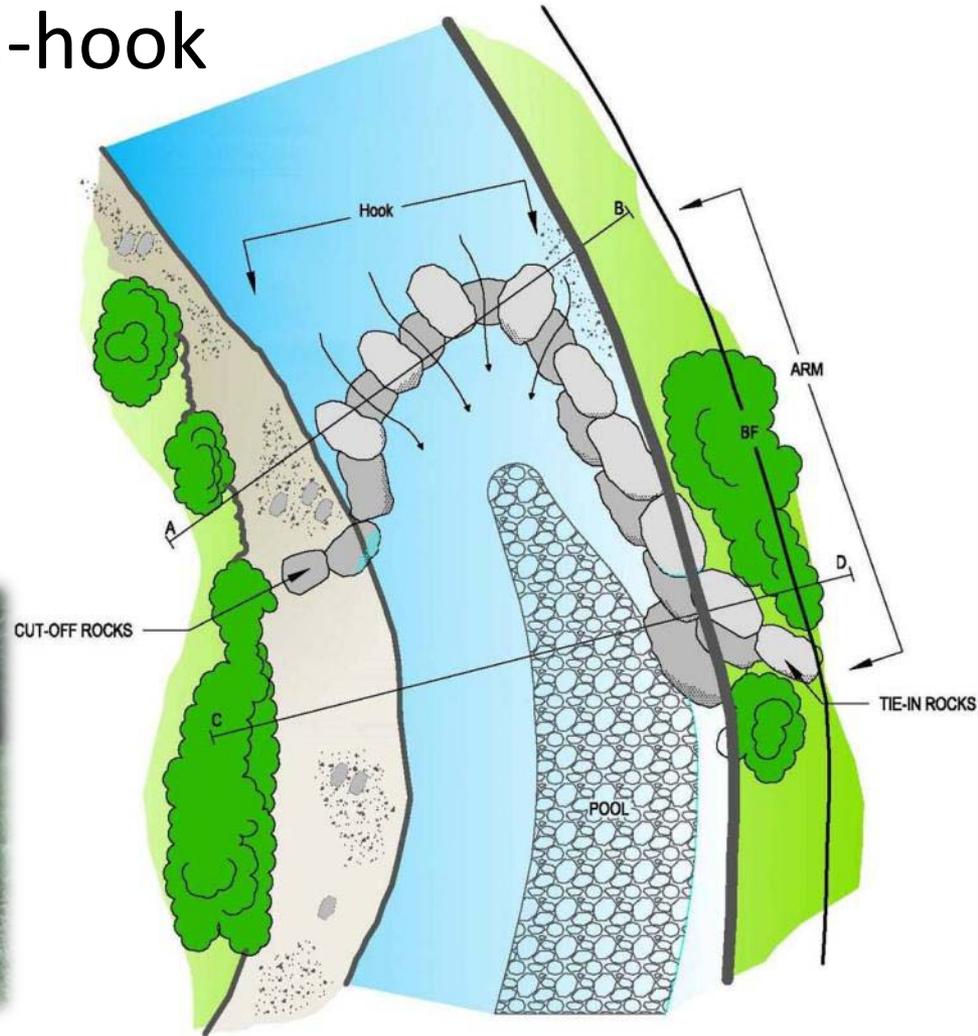
- Boulder/ Log Boulder J-hook



Boulder J-Hook

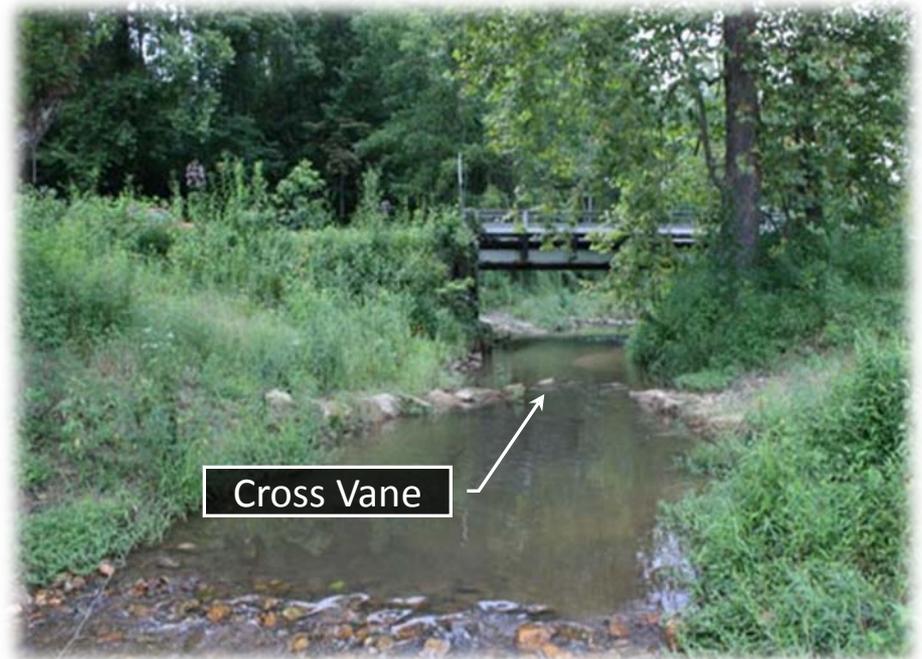
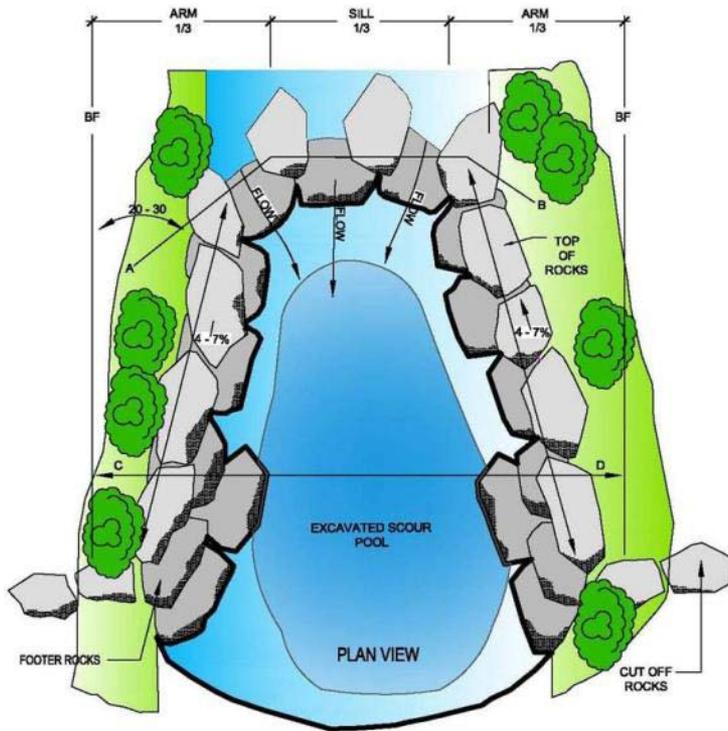


Log Boulder J-Hook



Typical Details

- Cross Vane



Typical Details

- Bankfull Bench



Typical Details

- Constructed Riffle



Typical Details

- Imbricated Rock Wall



Typical Details

- Log Meander Protection



Typical Details

- Wetland Creation

- Amphibian & Reptile Habitat



Spotted Salamanders



Eastern American Toads



Volunteer for the Maryland Reptile & Amphibian Atlas:
marylandnaturalist.org/mara

Typical Details

- Temporary Construction Access and Equipment



During Construction



After Construction



Rubber Tracked Vehicles



Tree Protection Fence

Typical Details

- Temporary Construction Access and Equipment



- Temporary Bridge



- Typical Contractor & Engineer

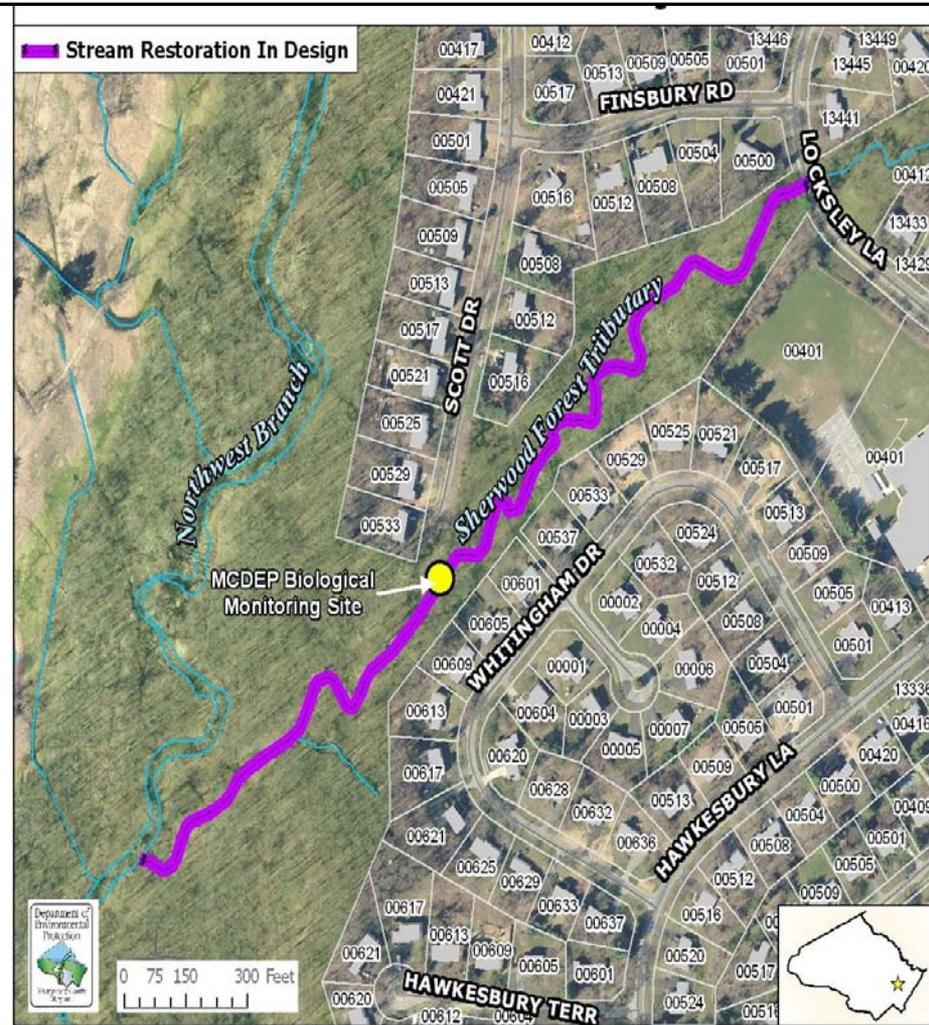


Schedule

- Tentative Schedule (subject to change):
 - May 21st, 2013 – Community Stream Walk
 - On-going (March-June 2013) – Construction activities such as clearing/grubbing, setting up mulch access roads, etc
 - June 2013 – In-stream construction Begins
(March 1 to May 31 2013 – Stream Closure for Use IV Waters - No in-stream work allowed)
 - Sept/Oct 2013 – Estimated construction end

Restoration Monitoring

| Project Goal | Monitoring |
|---|--|
| <p>Improve aquatic habitat by enhancing pool and riffle fish habitat and creating overhead cover for fish</p> | <p>Benthic and Fish Sampling; Rapid Habitat Assessments, and Physical Chemistry Measurements</p> |
| <p>Stabilize eroding streambanks to reduce sediment entering the stream</p> | <p>Quantitative Surveys (Longitudinal profile, cross sections, bed material characterization, and Bank Erosion Hazard Index (BEHI), Photo-documentation)</p> |
| <p>Reforest streambanks and riparian area alongside stream for added bank stability and overhead cover</p> | <p>Botanical Reforestation Surveys; Photo-documentation</p> |
| <p>Construct wetlands for amphibian habitat and improved water quality</p> | <p>Wetland/ Vernal Pool Herpetofauna Surveys</p> |



Restoration Monitoring



Benthic Sampling



Caddisfly larva

Benthic Macroinvertebrates

| Type | Sample Date | Percent Score | Condition |
|----------|-------------|---------------|-----------|
| Benthics | 4/23/2009 | 20 | Poor |

Fish Found in 2009

| | |
|----------------|-------------------|
| Blacknose Dace | Silverjaw Minnow |
| Rosyside Dace | Bluntnose Minnow |
| Longnose Dace | Tesselated Darter |
| White Sucker | Fantail Darter |

Fish

| Type | Sample Date | Percent Score | Condition |
|------|-------------|---------------|-----------|
| Fish | 7/8/2009 | 64 | Fair |



White Sucker

May 21 2013



Fish Sampling

Sherwood Stream Walk



Rosyside Dace

RainScapes Rebate Program

- The County's RainScapes program promotes and implements projects on residential, institutional, and commercial properties to reduce stormwater pollution.

| Property Type | Maximum Rebate |
|---|----------------|
| Residential Property | \$2,500 |
| Commercial, multi-family, or institutional property | \$10,000 |

- RainScapes Techniques:

- Downspout Diversion
- Rain Barrels, Cisterns* (water re-use)
- Rain Gardens*
- Permeable Pavers*
- Green Roofs*
- Conservation Landscaping*
- Urban Tree Canopy*
- Pavement Removal*
- Dry Wells*
- Soil Reconditioning and Amendment



* Eligible for Rebate

Visit www.rainscapes.org for more information and to apply online.

