

Watershed Restoration Program and Purpose of the Batchellors Run Stream Restoration Project



Stream Restoration Community Walk

December 1st, 2012

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Project website www.montgomerycountymd.gov/restorationprojects
Click Northwest Branch, then Batchellors Run 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

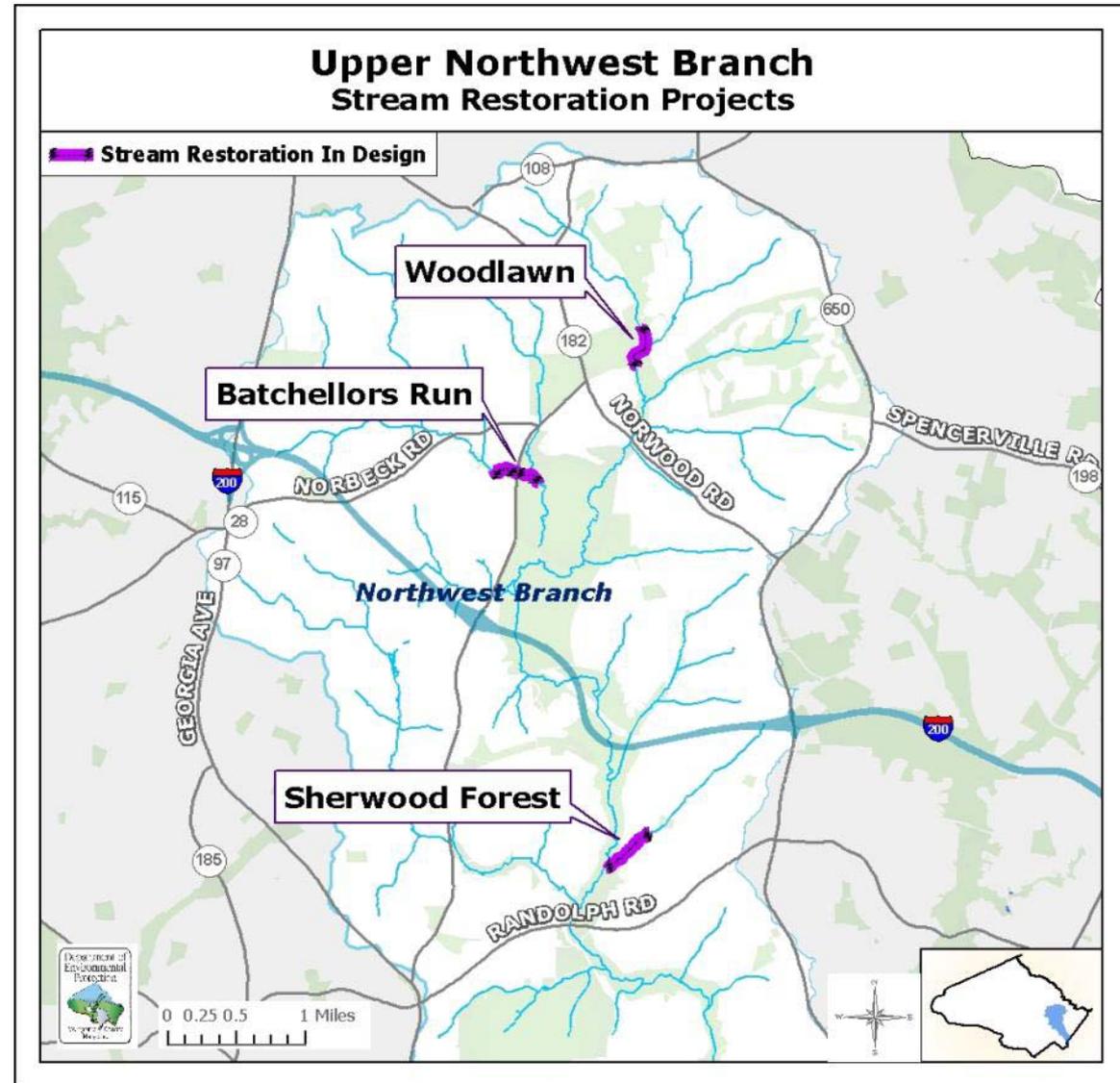


Background on Project Selection

- The Batchellors Run 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 (~ 4,300 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 Batchellors Run tributary flows into the Northwest Branch watershed, and eventually the Anacostia River.
- The Sherwood Forest and Woodlawn (Sandy Spring tributary) projects are also planned in the Upper Northwest Branch and will be completed with the Batchellors Run 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



December 1 2012

- Grade Control

Existing



Proposed



Batchellors Run Stream Walk

- Eroded streambanks & inadequate stream buffers

Existing



Proposed



Typical Details

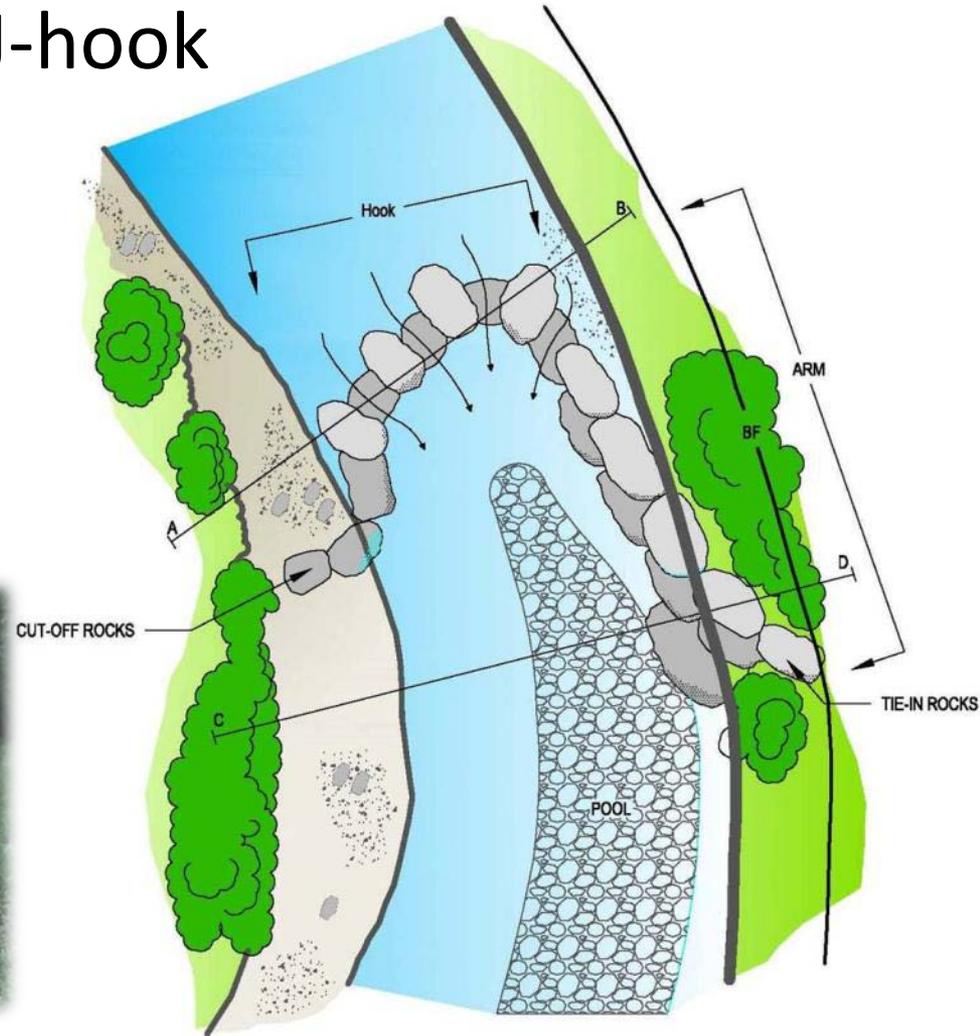
- Boulder/ Log Boulder J-hook



Boulder
J-Hook

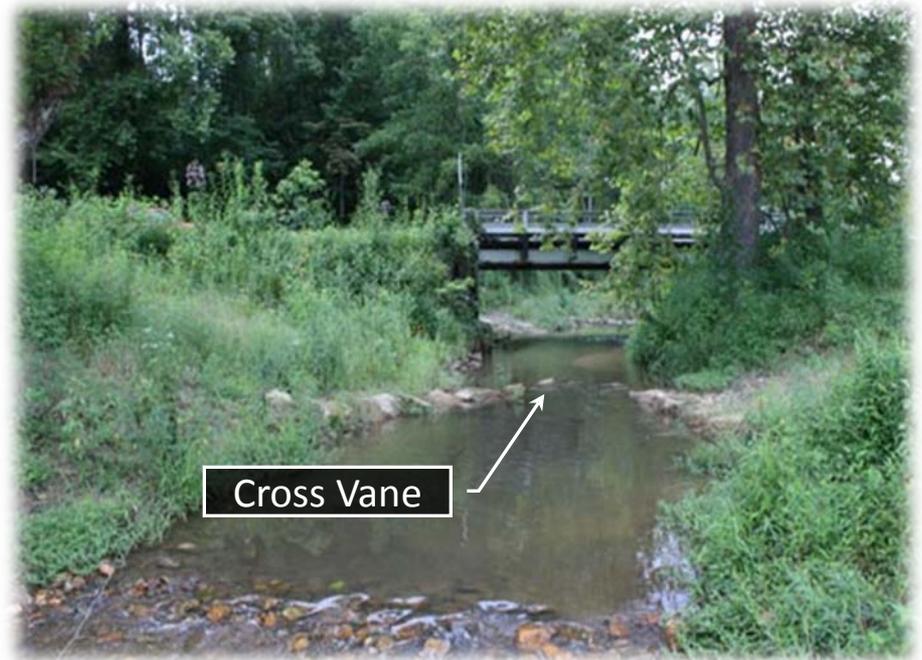
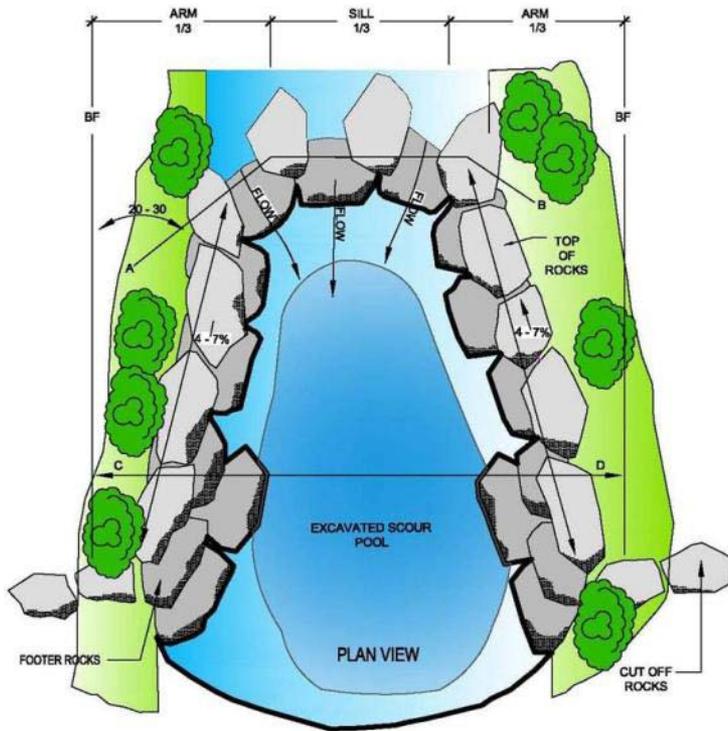


Log Boulder J-Hook



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



- Temporary Bridge



- Typical Contractor & Engineer



Schedule

- Tentative Schedule (subject to change):
 - Dec 1 2012 – Community Stream Walk
 - Late Dec 2012 or Early Jan 2013 – Construction Begins on Golf Course Site (East of Layhill)
 - As early as Jan or Feb 2013 - Construction activities such as clearing/grubbing, setting up mulch access roads, etc may begin for West side of Layhill, followed shortly by in-stream work
 - March 1 to May 31 2013 – Stream Closure for Use IV Streams (No in-stream work allowed)

Restoration Monitoring

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



Restoration Monitoring



Fish			
Site Location	Sample Date	Percent Score	Condition
Batchellors Run, West of Layhill Rd	8/4/2009	60	Fair
Batchellors Run, East of Layhill Rd	8/25/2009	64	Fair

Batchellors Run - Fish Found in 2009

West of Layhill Rd (Upstream)		East of Layhill Rd (Downstream)	
Species	Tolerance	Species	Tolerance
American eel	Intermediate	American eel	Intermediate
Blacknose dace	Tolerant	Blacknose dace	Tolerant
Bluegill	Tolerant	Bluegill	Tolerant
Bluntnose minnow	Tolerant	Bluntnose minnow	Tolerant
Creek chub	Tolerant	Common shiner	Intermediate
Cutlips minnow	Intermediate	Cutlips minnow	Intermediate
Fantail darter	Intermediate	Fantail darter	Intermediate
Green sunfish	Tolerant	Green sunfish	Tolerant
Largemouth bass	Tolerant	Largemouth bass	Tolerant
Longnose dace	Intermediate	Longnose dace	Intermediate
Redbreast sunfish	Tolerant	Pumpkinseed	Tolerant
Rosyside dace	Intermediate	Redbreast sunfish	Tolerant
Silverjaw minnow	Intermediate	Rosyside dace	Intermediate
Spottail shiner	Intermediate	Silverjaw minnow	Intermediate
Swallowtail shiner	Tolerant	Spotfin shiner	Intermediate
Tessellated darter	Tolerant	Spottail shiner	Intermediate
White sucker	Tolerant	Swallowtail shiner	Tolerant
		Tessellated darter	Tolerant
		White sucker	Tolerant

Benthic Macroinvertebrates			
Site Location	Sample Date	Percent Score	Condition
Batchellors Run, West of Layhill Rd	4/23/2009	45	Fair
Batchellors Run, East of Layhill Rd	4/22/2009	60	Fair



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	\$1,200
Commercial, multi-family, or institutional property	\$5,000

- 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.

