

AUDUBON NATURALIST SOCIETY
STREAM QUALITY ASSESSMENT SURVEY

Monitoring Season/Year: Spring 2016 Date: 4/13/2016
Site Number: 45 Stream and Location: Little Falls Branch, Mass Ave +
Little Falls Pkwy, 100m south of
GPS if known: _____
Team Leader: M. T. Barattano Phone No. 202 364 1383
Data Collectors: Sarah Morse Bob Burns
Frank Sandford
Sara Robinson

ABIOTIC DATA

Time: 2 pm pH: 7.6
Ambient air temperature: _____ F 12 C (Hang thermometer in shaded area 3' above ground)
Water temperature: _____ F 15 C (average of 3 samples) [F = (1.8 x C) + 32]
General weather conditions: Sunny not a cloud in the sky
Date/time of last rainfall (if known): Slight rain one day ago.
Somewhat more rain last Saturday

BENTHIC HABITAT SAMPLED:

Take a total of 20 one-foot square net samples in the best available habitat in moving water. The categories of preferred, stable habitats to be sampled are listed below. Sample habitats proportionately to their occurrence in the reach, and indicate the number of samples in each type of habitat:

Riffles 17 Rootwads 2 Woody Debris _____
Leaf Packs 1 Macrophytes (water plants) _____ Undercut Banks _____

If these preferred habitats are scarce or not present, you may sample runs _____

* Riffles are very short & frequent, because of large rocks placed in stream.

NOTES/COMMENTS (continue on back of sheet):

Canopy cover more open than shaded; water clear; soil mostly sandy, some loam.
Stream run (75m) was filled with large rocks/boulders, and rip-rap type rocks bank to bank. Stream is straight (no bends) with a few deep pools & many hiding places below rocks.
several yrs ago many very



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Attach Habitat Field Data Sheet(s) and Benthos Taxonomic Listing. Return to ANS at:
8940 Jones Mill Road, Chevy Chase, MD 20815

(Cont'd)

There is a deep pool above our run, below Mass. Ave bridge. The left bank (facing downstream) is severely eroded, with many natural trees without soil; these will soon fall. The left bank side has a paved 2.5M walking/riding trail next to the stream. The right side buffer has the Cap. Crescent bike trail about 200M above the stream. Some of that buffer area is steep + cut away. Several dead trees in steepest cut back area. Fair amt of invasives on both sides.

Stream needs restoration since large boulders are no longer protecting the left bank.

Stream is fed from a fully channelized, concrete-covered stream about 1 mile up Little Falls Pkwy.

There are two sewer manholes, one just above the reach and one in the middle of the reach.

Long brown algae growing throughout the reach. Water clear. Lots of "minnows".

3 mallard ducks drinking water from pool nr. Mass Ave. Lots of songbirds, hawk, pileated woodpecker.

One large oak (>24") on right bank, leaning over.

Stream run is straight but covered w/ lge rocks, so

small riffles form.

↑ short

Sedimentation (sand, mostly) is moderate. Some cobbles. Evidence of flooding — on right side, leaf packs 5 feet above water level of stream.

MCDEP SPRING HABITAT DATA SHEET

Watershed Code Segment ID Site Type (See Back) BASIN (See back) Reviewed By: _____

STREAM Little Falls #45 2nd Reviewer: _____

DATE Year 2016 Month 04 Day 13

CREW _____

Office Use Only Watershed Code Segment Type
 MBSS SITE ID

Bridge Culvert under Mass Ave
 Distance from Nearest Road to Site (m) 125
 Trash Rating 0 - 20 (see back) 10

LANDUSE (Y/N)

Old Field

Deciduous Forest *w/ bike riding trail*

Coniferous Forest

Wetland

Surface Mine

Landfill

Residential

Commercial/Industrial

Cropland

Pasture

Orchard/Vineyard/Nursery

Golf Course

RIPARIAN VEGETATION **** (Facing Downstream) ****

LEFT BANK	RIGHT BANK	
09	50	Width (50m max) <i>*Left bank has paved trail</i>
FR	FR	Adjacent Land Cover (see back)
YMRG	YMRG	Vegetation Type (see back) <i>*Lawn Grass next to path</i>
Y*	N	Buffer Breaks (Y/N)

Buffer Break Types (M = minor; S = severe)

LEFT BANK	RIGHT BANK	Feature
S	 	Sewer Line Crossing <i>*left bank follows trail</i>
 	 	Storm Drain
 	 	Tile Drain
 	 	Impervious Drainage <i>*paved path 2.5 meters wide</i>
 	 	Gully
 	 	Orchard
 	 	Crop
 	 	Pasture
 	 	New Construction
 	 	Dirt Road <i>*see above</i>
 	 	Gravel Road <i>*" "</i>
 	 	Raw Sewage
 	 	Railroad

H₂O Quality

Time 1400 (Military)

Air Temp 12 C / F

H₂O Temp 15 C

pH 76

DO mg/L

% Sat.

Cond. umhos

CHANNELIZATION

Evidence of Channel Straightening or Dredging (Y/N) **Long ago straightened & boulders added*

TYPE	EXTENT (m)		
	LEFT BANK	BOTTOM	RIGHT BANK
Concrete	 	 	
Stabilization	 	 	
Coarse-Rap	75	75	75 *
Earthen Berm	 	 	
Edge Spoil Off Channel	 	 	
Box Culvert	 	 	

see other report

GPS Coordinates (@ 0 m)

Map Datum:
 (Ex NAD 83)

deg min sec

deg min sec

Stream Block Ht. (m)

Stream Block Type (See Back)

Lat
deg min sec

Lon
deg min sec

Database Entry Office Use Only

Date Physical Chemistry entered:
 Year Month Day

Entry Initials:

Date Physical Chemistry QA/QC:
 Year Month Day

QA/QC Initials:

MCDEP SPRING INDEX PERIOD DATA SHEET

(Check all that Apply)

AMPLING CONSIDERATIONS: Anodes (#) Chest Hip Waders Rebar # Of _____

COMMENTS: Sampled riffles from small waterfalls and fast
water tumbling between large rocks. At least one deep (>3ft)
pool

If new Station, fill out Stations Database Form

STREAM WIDTH (m) 0 m = bottom of rvp
width 4.5 m

BENTHIC HABITAT SAMPLED (Square feet: Total = 20 square feet)

0 m	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Riffle	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Macrophytes
75 m	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Rootwad/Woody Debris	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undercut Banks
<u>bank</u>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Leaf Pack	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Other (specify) _____

water 6m (top)

Mont. County Drainage Basin Codes

MP - Middle Potomac River	ABPG - Anacostia River	PRMO - Potomac River Mo. Co.
PW - Potomac Washington Metro	BRIG - Brighton Dam	RKGR - Rocky Gorge Dam
PX - Patuxent River	CABJ - Cabin John Creek	ROCK - Rock Creek
	LMON - Lower Monocacy River	SENE - Seneca Creek

MBSS - Mont. County Watershed Abbreviation - Office Use Only

Trash Rating	Optimal	Suboptimal	Marginal	Poor
	Little or no human refuse visible from stream channel or riparian zone	Refuse present in minor amounts	Refuse present in moderate amounts	Refuse abundant and unsightly
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

- Vegetation Types
- ④ G - Grasses/Forbes
 - ③ R - Regen Deciduous/Shrubs (<4" DBH)
 - ① Y - Young Deciduous (4-12' DBH)
 - ② M - Mature Deciduous (12-24' DBH)
 - O - Old Deciduous (>24' DBH)
 - A - Regen Coniferous (<4' DBH)
 - B - Young Coniferous (4-12' DBH)
 - C - Mature Coniferous (12-24' DBH)
 - D - Old Coniferous (>24' DBH)
 - L - Lawn

- Riparian Buffer Zone/ Adjacent Land Cover Types
- FR - Forest
 - OF - Old Field
 - EM - Emergent Vegetation
 - LN - Mowed Lawn
 - TG - Tall Grass
 - LO - Logged Area
 - SL - Bare Soil
 - RR - Railroad
 - PV - Paved Road
 - PK - Parking lot/Industrial/ Commercial
 - GR - Gravel Road
 - DI - Dirt Road
 - PA - Pasture
 - OR - Orchard
 - CP - Cropland
 - HO - Housing

CDEP Site Types

RR - Random Reach TT - Targeted SR - Random Segment

MBSS Site Types - Office Use Only

R - Random T - Targeted S - Sentinel

Stream Block Type

DM - Dam	GW - Gaging Station Weir	AC - Arch Culvert
PC - Pipe Culvert	G - Gabion	BC - Box Culvert
F - Fishway	PX - Pipeline Crossing	TG - Tide Gage

(Note: Height is measured in meters from stream surface to water surface above structure)

HABITAT ASSESSMENT FIELD DATA SHEET

RIFFLE/RUN PREVALENT STREAMS

STREAM Little Falls Br.
 SITE 45

DATE 4/13/15
 INVESTIGATOR M T Barafano

Riffle/Run Prevalent Streams are those in moderate to high gradient landscapes that sustain water velocities of approximately 1 ft/sec or greater. Natural streams have substrates primarily composed of coarse sediment particles (i.e., gravel or larger) or frequent coarse particulate aggregations along stream reaches.

Habitat Parameter	Category			
	Optimal	Suboptimal	Marginal	Poor
1. Instream Cover (Fish)	Greater than 50% mix of snags, submerged logs, undercut banks, or other stable habitat.	30-50% mix of stable habitat, adequate habitat for maintenance of populations.	10-30% mix of stable habitat; habitat availability less than desirable.	Less than 10% mix of stable habitat; lack of habitat is obvious.
SCORE <u>15</u>	20 19 18 17 16	(15) 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Epifaunal Substrate	Well-developed riffle and run; riffle is as wide as stream and length extends two times the width of stream; abundance of cobble.	Riffle is as wide as stream but length is less than two times width; abundance of cobble; boulders and gravel common.	Run area may be lacking; riffle not as wide as stream and its length is less than 2 times the stream width; gravel or large boulders and bedrock prevalent; some cobble present.	Riffles or run virtually nonexistent; large boulders and bedrock prevalent; cobble lacking.
SCORE <u>9</u>	20 19 18 17 16	15 14 13 12 11	10 (9) 8 7 6	5 4 3 2 1 0
3. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
SCORE <u>11</u>	20 19 18 17 16	15 14 13 12 (11)	10 9 8 7 6	5 4 3 2 1 0
4. Channel Alteration	Channelization or dredging absent or minimal; stream with normal, sinuous pattern.	Some channelization present, usually in areas of bridge abutment; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	New embankments present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted.
SCORE <u>15</u>	20 19 18 17 16	(15) 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from coarse gravel; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, coarse sand on old and new bars; 30-50% of the bottom affected; sediment deposits at obstruction, constriction, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE <u>9</u>	20 19 18 17 16	15 14 13 12 11	10 (9) 8 7 6	5 4 3 2 1 0

(5)

Habitat Parameter	Category			
	Optimal	Suboptimal	Marginal	Poor
6. Frequency of Riffles Occurrence of riffles relatively frequent; distance between riffles divided by the width of the stream equals 5 to 7; variety of habitat. SCORE <u>16</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Channel Flow Status Water reaches base of both lower banks and minimal amount of channel substrate is exposed. SCORE <u>10</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Vegetative Protection (score each bank) Note: determine left or right side by facing downstream. SCORE <u>6</u> (LB) SCORE <u>8</u> (RB)	More than 90% of the streambank surfaces covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption, through grazing or mowing, minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 2 inches or less in average stubble height.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
9. Bank Stability (score each bank) SCORE <u>2</u> (LB) SCORE <u>6</u> (RB)	Banks stable; no evidence of erosion or bank failure; little potential for future problems.	Moderately stable; infrequent, small areas of erosion mostly healed over.	Moderately unstable; up to 60% of banks in reach have areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone) SCORE <u>4</u> (LB) SCORE <u>9</u> (RB)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0

Total Score 6

Invasives on both sides: lesser celandine, wineberry (right side), jap. honeysuckle vine + bush, mulberry rose, knotweed
Some English ivy

BENTHOS TAXONOMIC LISTING
Classification of Important Freshwater Benthic
Macroinvertebrates in Maryland and Virginia

Team 45
 4/13/16
 L. Falls

PHYLUM	CLASS	ORDER	FAMILY	COMMON NAME	TOTAL		
Annelida	Oligochaeta			Aquatic Worm	111		
	Hirudinea			Leech			
Mollusca	Gastropoda			Planorbid Snail			
				Limpet			
				Pouch Snail			
				River/Pond Snail			
				Operculate Snail			
			Pelecypoda (Bivalvia)		Clams/Mussels		
					Fingernail Clam		
				Decapoda	Astacidae	Asiatic Clam	
		Arthropoda	Crustacea			Crayfish	
					Isopoda	Asellidae	Sowbug
	Insecta	Amphipoda	Gammaridae	Scud			
		Plecoptera		Stonefly			
			Perlidae	Common SF			
			Perlodidae	Perlodid SF			
			Peltoperlidae	Roachlike SF			
			Capniidae	Slender Winter SF			
			Leuctridae	Rolledwing SF			
			Nemouridae	Nem. Broadback SF			
			Taeniopterygidae	Taen. Broadback SF			
			Chloroperlidae	Green SF			
			Pteronarcyidae	Giant (Black) SF			
			Ephemeroptera		Mayfly		
				Ameletidae	Ameletus MF		
				Heptageniidae	Flathead MF		
				Ephemerellidae	Spiny Crawlers		
				Baetidae	Small Minnow MF	2 *	
			Oligoneuriidae	Brushlegged MF			
			Leptophlebiidae	Prong Gills			
			Ephemeridae	Common Burrowers			
			Potamanthidae	Hackle Gills			
			Tricorythidae	Little Stout Crawlers			
			Siphonuridae	Primitive Minnow MF			
			Polymitarcyidae	Pale Burrowers			
			Caenidae	Small squaregills			
			Baetiscidae	Armored Mayfly			

1 water snake waiting with open mouth for;
 Many Daces + Darters > 30 (minnows)
 4 Mosquito Pupae + 2 mosquito larvae



Audubon Naturalist Society Water Quality Program
 MD and DC Monitoring, 8940 Jones Mill Road, Chevy Chase, MD 20815
 301-652-9188 Ext.26
 VA Monitoring, Webb Sanctuary, P.O. Box 51, Clifton, VA 20124
 703-803-8400

⑦

* Baetidae - Sarah found an additional five (5) Baetidae (not seen in our field)

see left ↑

PHYLUM	CLASS	ORDER	FAMILY	COMMON NAME	TOTAL
		Trichoptera		Caddisfly	
			Hydropsychidae	Common Netspinner	
			Philopotamidae	Fingernet CF	
			*see below Glossosomatidae	Saddlecase Maker	
			Rhyacophilidae	Free-living CF	
			Hydroptilidae	Micro CF (Pursecase CF)	
			Limnephilidae	Northern Casemaker	
			Lepidostomatidae	Lepido Casemaker	
			Polycentropodidae	Trumpetnet CF	
			Psychomyiidae	Net tube CF	
			Brachycentridae	Humpless Casemaker	
			Phryganeidae	Giant Casemaker	
			Leptoceridae	Long-Horned Casemaker	
		Diptera		True Fly	
			Chironomidae	Midges	+ 20
			Simuliidae	Black Flies	+ 10 + 10 + 20
			Tipulidae	Crane Flies	
			Empididae	Aquatic Dance Flies	
			Athericidae	Watersnipe Flies	
			Ceratopogonidae	Biting Midges	
			Dolichopodidae	Longlegged Flies	
			Tabanidae	Horse/Deer Flies	
			Tanyderidae	Primitive Crane Flies	
			Stratiomyidae	Soldier Flies	
			Ptychopteridae	Phantom Crane Flies	
		Megaloptera			
			Corydalidae	Dobson flies/Fishflies	
			Sialidae	Alderflies	
		Coleoptera		Beetles	
			Elmidae	Riffle beetle	
			Psephenidae	Water Penny	
			Ptilodactylidae	Ptilod beetle	
			Gyrinidae	Whirligig beetle	
			Haliplidae	Crawling beetle	
			Hydrophilidae	Water Scavenger beetle	
			Dytiscidae	Predaceous Diving beetle	
			Dryopodidae	Long-toed beetle	
		Odonata		Dragonflies	
				Damselflies	
			Gomphidae	Clubtails	
			Aeshnidae	Darners	
			Calopterygidae	BW-damselflies	
			Coenagrionidae	NW-damselflies	
			Cordulegastridae	Biddies	

34
48

18
2
20 Total
Subtotal
Sub from front page

* 2 Pickled Glossosomatidae(?) animalside? →
Audubon Naturalist Society Water Quality Program (not counted)

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