



# STREAM MONITOR

THE NEWSLETTER FOR WATER QUALITY MONITORING

MARCH 2026, ISSUE 3

## 2025 SNAPSHOT!

Here are two summaries of the 2025 stream monitoring findings generated by the work of Nature Forward volunteers.

This chart lists the monitoring sites and Index of Biological Integrity (IBI) scores for each monitoring visit.

### INSIDE THIS ISSUE

[2025 SNAPSHOT](#)

[INCIDENT REPORTS](#)

[OBSERVATIONS](#)

[PETE'S DESK](#)

[FOLLOW THE DATA](#)

[PUBLISHED](#)

[OTHER ITEMS OF INTEREST](#)

2025 Index of Biological Integrity (IBI) Scores by Stream Site

MONITORING SITE	WINTER 2025	SPRING 2025	SUMMER 2025	FALL 2025	STREAM HEALTH
Site 36, Dark Branch		5.00	4.43	4.71	Excellent
Site 33, Bucklodge Branch		4.43			Excellent
Site 20, Wildcat Branch	5.00	5.00	4.14	3.86	Good to Excellent
Site 32, Ten Mile Creek Tributary	4.43	5.00	3.86	4.14	Good to Excellent
Site 46, Middle Patuxent River	3.86	5.00	4.14	4.14	Good to Excellent
Site 37, Ten Mile Creek Mainstem		5.00	3.86	3.86	Good to Excellent
Site 6, Rock Creek/Muncaster Mill Road	3.57	3.86	3.86	4.71	Good to Excellent
Site 25, Goshen Branch				4.14	Good
Site 19, Great Seneca Creek		3.86	3.57	4.14	Good
Site 27, Muddy Branch		4.14	3.86	3.57	Good
Site 8, North Branch of Rock Creek/Meadowside		3.86	3.57	3.57	Good
Site 44, Hawlings River	3.29	3.57	3.86	3.86	Good
Site 40, Good Hope Tributary of Paint Branch		3.29			Good
Site 10, Rock Creek/Agriculture History Farm Park		5.00	3.00	3.00	Fair to Excellent

Please click on the image to display the complete report.

- 245 volunteers monitored 29 stream sites in Washington DC, and Montgomery, Prince George's, and Howard Counties in 2025.
- 46 volunteers monitored more than one stream site, with some working at up to 8 sites.
- Our volunteers dedicated 1,972 hours to surveying aquatic macroinvertebrates to check on the health of local streams.

There is a review of the INDEX OF BIOLOGICAL INTEGRITY scoring methodology in the "Follow the Data" section of this newsletter.

This chart shows the macroinvertebrate counts. The counts cover all sites that were monitored during the 2025 winter, spring, summer, and fall monitoring periods.

- There were 88 monitoring visits to 29 sites.
- A total of 9,421 benthic macroinvertebrates were identified and counted.

Macroinvertebrate	Count
Common Netspinner Caddisfly - Hydropsychidae	1,630
Fingernet Caddisfly - Philopotamidae	1,258
Small Minnow Mayfly - Baetidae - Total	1,126
Small Minnow Mayfly - Baetidae Baetis. Count = 616	
Small Minnow Mayfly - Baetidae genus not identified. Count = 423	
Small Minnow Mayfly - Baetidae Acentrella. Count = 87	
Midges - Chironomidae	744
Flatheaded Mayfly - Heptageniidae - Total	629
Flatheaded Mayfly - Heptageniidae Maccaffertium. Count = 398	
Flatheaded Mayfly - Heptageniidae genus not identified. Count = 206	
Flatheaded Mayfly - Heptageniidae Epeorus. Count = 24	
Flatheaded Mayfly - Heptageniidae Stenacron. Count = 1	
Brushlegged Mayfly - Isonychiidae	579
Black Fly - Simuliidae	542
Planarians/Flatworms - Dugesiidae	313
Riffle beetle - Elmidae - Total	302
Riffle beetle - Elmidae, genus not identified. Count = 119	
Riffle beetle - Elmidae Stenelmis. Count = 70	
Riffle beetle - Elmidae Macronychus. Count = 44	
Riffle beetle - Elmidae Optioservus. Count = 28	
Riffle beetle - Elmidae Ancyronyx. Count = 27	
Riffle beetle - Elmidae Dubiraphia. Count = 11	
Riffle beetle - Elmidae Oulimnius. Count = 3	

Please click on the image to display the complete report.

## INCIDENT REPORTS ...

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Special thanks to our WQM volunteers for calling attention to potential threats to our streams. Many of you are intimately familiar with this area's stream valley parks and recognize when something is awry.

As in past years, Northwest Branch appears to be the stream that attracts the most dam construction by people who are creating pools for wading or fishing. Unfortunately, these pools often submerge riffle habitat that is vital to stream health.

Team leaders Glenn Welsh and Pete Yarrington reported dams on Northwest Branch near Kemp Mill and in Layhill Local Park. At both sites, the culprits appeared to be beavers. While Parks Department staff will remove human-made dams, they leave the beaver creations alone. They do appreciate reports of dams regardless of the engineers.



Northwest Branch/Kemp Mill Beaver Dam

Team leader Peter Edelman reported invasive Japanese Barberry crowding the narrow streamside trail our monitors use to access the Rock Creek/Muncaster Mill Road site. The County's Weed Warriors volunteers, who primarily target invasive vines, remove non-native invasive plants in riparian areas but are not permitted to work along streambanks.

## ... AND REPORTING INCIDENTS

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Please continue to report incidents like dams, pollution events, discolored or foul-smelling stream water, etc. to Nature Forward, preferably via email, and we'll relay your reports to the appropriate authorities. If possible, snap a photo or two. Team leaders should note the incidents on the Stream Quality Assessment Report (the cover form of the WQM data sheets).

If you see something that you believe requires immediate attention in Montgomery County or Prince George's County, please call 311.

## OBSERVATIONS

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Even our most experienced team leaders occasionally need help identifying -- or confirming their field identification of -- critters that are found in their collections. Volunteer Pete Yarrington (see the "Pete's Desk" feature) contributes many hours to identifying specimens each year.

Let's take a look at two caddisflies.

Here are Peter Edelman's photos of a beautifully patterned caddisfly larva that we found at Goshen Branch during Fall 2025 monitoring. Many of the characteristics pointed to the most common macroinvertebrate our monitors find each year: a Hydropsychidae, or the Common Netspinner Caddisfly. Most that we find are dark brown or green.



Photos by Peter Edelman.

Peter Edelman's subsequent research on this macroinvertebrate took him to:

<https://bugguide.net/node/view/682994>

My research led me to Bob Henricks:

<https://aquaticinsectsofcentralvirginia.blogspot.com/2012/08/ceratopsyche-bronta-and-ceratopsyche.html>

In both cases, the family ID was Hydropsychidae and the genus ID was Hydropsyche.

We didn't preserve the macro but did share photos with Pete Yarrington and other WQM volunteers. The general consensus was Hydropsychidae. Note the three hard plates over the thorax, two anal prolegs with long hairs, and the brushy gills on the abdomen.

OBSERVATIONS (continued)

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Peter Viechnicki, team leader at our Hawlings River site in Rachel Carson Conservation Park, sent in this specimen from Summer 2025 monitoring. Pete Yarrington set the larva and its case side by side under the microscope and snapped this stunning photo.

Pete also sent several close-ups photographs of the larva with detailed notes to support the identification as Limnephilidae or Northern Casemaker Caddisfly.



Photo by Pete Yarrington

## PETE'S DESK

By Pete Yarrington

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### Those Wonderfully Gnarly Beetles

An often-heard estimate is that there are around 250,000 different species of beetles (order Coleoptera) worldwide, but I have recently read that estimate has been raised to 350,000 or more. The group is divided into approximately 170 families, of which over 100 are found in North America.

A fraction of these are partially or fully aquatic, with (fortunately!) only eight reliably appearing during our water quality monitoring with Nature Forward. Of those eight families, seven have aquatic larvae that we may find. Because beetles of these families are dependent on water quality for at least part of their life history, we record their presence when we find them.



With so many kinds of terrestrial beetles running around, it always amazes me that we find so few in our sampling. However, the larvae of two families of terrestrial beetles do wind up in our nets a few times each year because they often inhabit wet margins of streams. These are the Carabidae (ground beetles) and Staphylinidae (rove beetles). Some of the larvae in these two families can be easily confused with the fully-aquatic larvae we regularly encounter – for example Dytiscidae (predaceous diving beetles) and Hydrophilidae (water scavenger beetles). They can also be initially mistaken for larvae in the order Megaloptera - dobsonflies/hellgrammites, fishflies, and alderflies.

The aquatic beetle larvae we normally see are well represented in Nature Forward's identification keys. Therefore, it seems best here to simply provide images of the two forms of terrestrial beetle larvae the teams have encountered in sampling. If you find a beetle larva that you think may be terrestrial, or that you are otherwise unsure of, please return it to Nature Forward so that we can take a look!

Here is a preserved specimen of a Carabid beetle larva from Great Seneca Creek, Site 19, collected January 27, 2024. Photo by Pete Yarrington



PETE'S DESK

By Pete Yarrington (continued)

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Here is a preserved specimen of a Carabid beetle larva from North Branch of Rock Creek, Site 7, collected October 12, 2024. Photo by Pete Yarrington



And here are two views of a live Staphylinid beetle larva from Site 23, Pinehurst Branch, collected February 28, 2023. Photos by Gregg Trilling



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Volunteer Pete Yarrington is the team leader of Nature Forward's Northwest Branch/Layhill Local Park WQM site and takes care of our specimen identification work.

## FOLLOW THE DATA

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Over the course of a year, we generally report an Index of Biological Integrity (IBI) score of 5.0 for two or three monitoring sessions, sometimes at a single stream site and sometimes at different sites. Recall that the IBI score scale is 1.0 to 5.0 with 5.0 as the highest score:

IBI Range	Stream Health
4.4 – 5.0	EXCELLENT
3.2 – 4.4	GOOD
2.0 – 3.2	FAIR
1.0 – 2.0	POOR

We calculate IBI's to two decimal places. Scores of 2.0, 3.2, and 4.4 aren't possible so an IBI score will fall within a single range.

In 2025, we recorded 7 monitoring sessions with scores of 5.0 during winter and spring monitoring.

Sites that scored 5.0 included: Dark Branch, Wildcat Branch, Unnamed Tributary of Ten Mile Creek, Middle Patuxent River, Ten Mile Creek, and Rock Creek in the Agricultural History Farm Park. (Wildcat Branch recorded 5.0 IBI scores twice, during winter and spring monitoring.)

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Let's review the stream health scoring methodology and metrics.

Nature Forward volunteers sample monitoring sites for benthic (bottom-dwelling) macroinvertebrates. The macroinvertebrates are identified and counted before being returned to streams. Because macroinvertebrates exhibit varying levels of sensitivity to pollutants and other stressors, they serve as indicators of stream health.

The IBI, or alternatively, the BIBI – benthic index of biological integrity – that we use was developed by Maryland for the State's volunteer Stream Waders program. The IBI is based on identification of aquatic insects to the taxonomic level of family and uses a combination of the following metrics to weigh taxa richness and preponderance of pollution-sensitive macroinvertebrates:

- number of EPT families (mayflies, stoneflies, caddisflies)
- number of mayfly (Ephemeroptera) families
- number of true fly (Diptera) families
- percentage of mayflies in the sample
- number of intolerant families
- number of families rated in Beck's Biotic Index (a sensitivity rating)



Our database automatically generates the IBI score from this set of metrics after a team leader inputs the monitoring data.

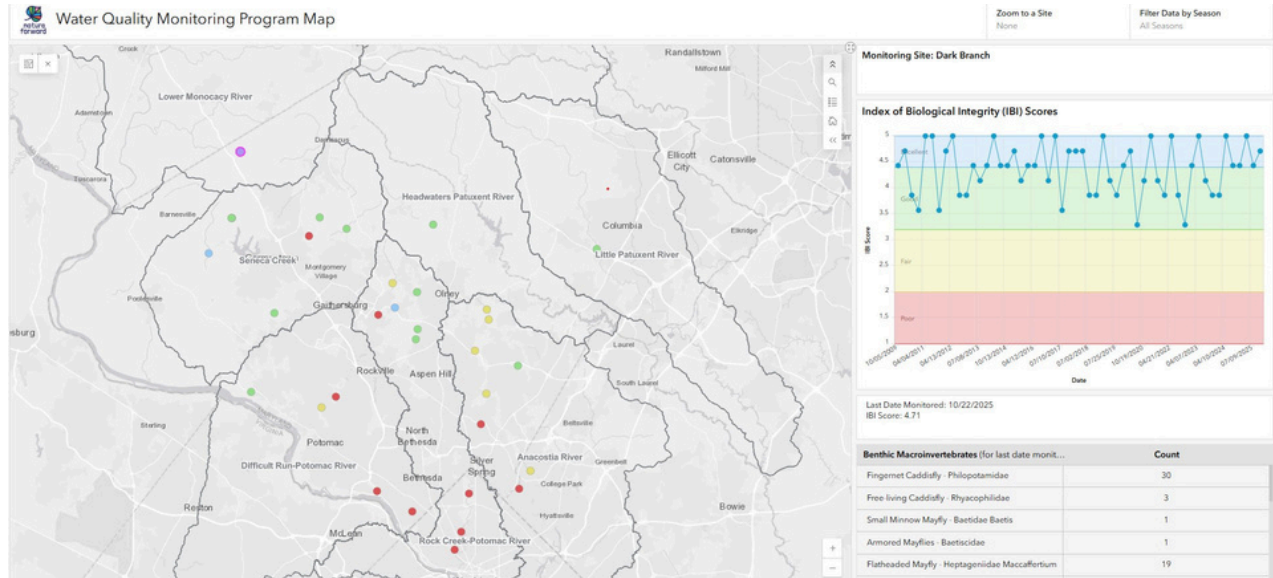
There is a spreadsheet that several team leaders use to generate their IBI's independently of our database, which is why you may hear a team leader lament:

“If we only had collected one more {fill in the blank: Diptera or Ephemeroptera or Trichoptera}”.

FOLLOW THE DATA (continued)

You can view a map with Nature Forward's Water Quality Monitoring Program's stream sites, and current and historical data on our webpage: <https://natureforward.org/water-quality/>

You may find [Helpful hints for using the interactive map](#) helpful.



PUBLISHED and OTHER ITEMS OF INTEREST

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This past November, Grassroots Engagement Coordinator Douglas McRae introduced a new series, CREEK CHRONICLES, for our [Conservation Blog](#). In this series, Douglas showcases WQM stream sites along with the volunteers and communities that interact with them. Douglas looks forward to accompanying monitors and visiting streams in the spring, summer, and fall! Here are the first two blogs:

- [Goshen Branch, Fall 2025](#)
- [Pinehurst Branch, Winter 2026](#)



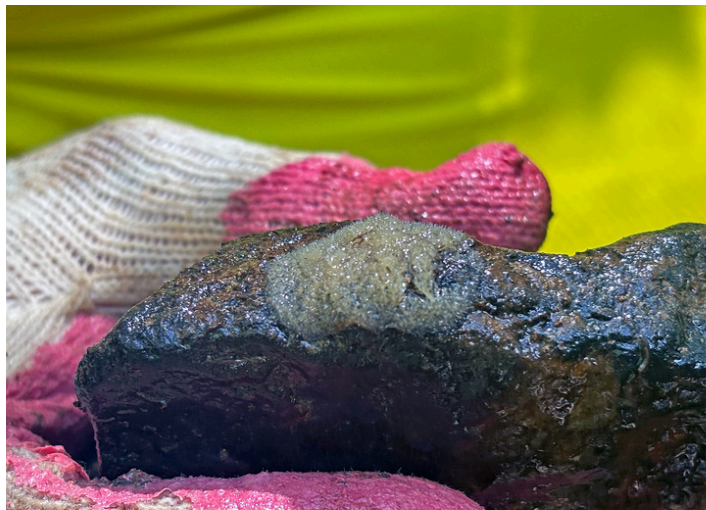
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Last year, the Anacostia Watershed Society (“AWS”) extended its search area for freshwater mussels into western Prince George’s County and eastern Montgomery County. Restoration Manager Jorge Bogantes Montero and his team found four Eastern Elliptio (*Elliptio complanata*) mussels in Upper Beaverdam Creek on the Beltsville Agricultural Research Center and one 1 Eastern floater (*Pyganodon cataracta*) in Indian Creek.

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Several Nature Forward WQM volunteers joined Jorge for a survey of Paint Branch just below the Intercounty Connector/Maryland Route 202. While we failed to find mussels, we did find freshwater sponges.



PUBLISHED and OTHER ITEMS OF INTEREST (continued)

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AWS reported collecting “19 sponge samples in the watershed in Prince George’s and Montgomery counties in Maryland.” Identification of the sponges is pending.

Here are two additional photos that Jorge shared.



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Many of us are familiar with the local Bug Guy, Mike Raupp, and his [Bug of the Week](#) blog.

We came across the BugLady, Kate Redmond, who lives and works in Wisconsin while doing an image search for adult crane flies for the Creek Critter app. Kate has also been publishing a [Bug of the Week](#) blog for many years.

Both “Bug of the Week” blogs occasionally feature aquatic macroinvertebrates.

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Behind the smile, a team leader’s lament.