NATURE FORWARD

STREAM MONITOR

THE NEWSLETTER FOR WATER QUALITY MONITORING

JANUARY 2024, ISSUE 1

2023 SNAPSHOT!

Here are summaries of the 2023 stream monitoring findings generated by the work of Nature Forward volunteers. This chart lists the monitoring sites and IBI (Index of Biological Integrity) scores.

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Nature Forward Water Quality Monitoring Program
2023 Index of Biological Integrity (IBI) Scores by Stream Site

MONITORING SITE	WINTER 2023	SPRING 2023	SUMMER 2023	FALL 2023	STREAM HEALTH
Site 46, Middle Patuxent River	4.71	4.71	4.43	4.71	Excellent
Site 6, Rock Creek/Muncaster Mill Road	4.71	4.14	4.43	4.43	Good to Excellent
Site 32, Ten Mile Creek Tributary	4.43	4.43	5.00	3.57	Good to Excellent
Site 36, Dark Branch	4.43	5.00	4.14	3.86	Good to Excellent
Site 20, Wildcat Branch	4.43	4.14	3.86	3.57	Good to Excellent
Site 37, Ten Mile Creek Mainstem	4.43	4.43	3.29	3.29	Good to Excellent
Site 44, Hawlings River	3.29	4.43	3.57	3.00	Good to Excellent
Site 8, North Branch of Rock Creek/Meadowside		3.29	4.14	3.86	Good
Site 27, Muddy Branch			3.29	3.57	Good
Site 25, Goshen Branch		3.86		2.71	Fair to Good
Site 19, Great Seneca Creek	3.00	4.14	2.71	3.00	Fair to Good
Site 18, Northwest Branch/Ednor Road		3.57	3.00	3.00	Fair to Good
Site 1, Watts Branch	2.43	1.86	3.00	3.29	Fair to Good
Site 7, North Branch of Rock Creek/Kengla	1.57	3.29	3.00	2.71	Poor to Good

Please click on the image to display the complete report.

2023 SNAPSHOT (CONTINUED)

The chart below shows the macroinvertebrate counts. The counts cover all sites that were monitored during the 2023 winter, spring, summer, and fall monitoring periods.

- There were 93 monitoring visits to 27 sites.
- A total of 9,346 benthic macroinvertebrates were identified and counted.

Are you surprised by anything in this table?

Nature Forward Water Quality Monitoring Program
2023 Macroinvertebrate Counts (for all WQM sites: winter, spring, summer, fall)

Macroinvertebrate	Count
Common Netspinner Caddisfly - Hydropsychidae	1,687
Fingernet Caddisfly - Philopotamidae	997
Midges - Chironomidae	900
Small Minnow Mayfly - Baetidae - Total	821
Small Minnow Mayfly - Baetidae Baetis. Count = 441	
Small Minnow Mayfly - Baetidae genus not identified. Count = 330	
Small Minnow Mayfly - Baetidae Acentrella. Count = 50	
Black Fly - Simuliidae	542
Planarians/Flatworms - Dugesiidae	475
Flatheaded Mayfly - Heptageniidae - Total	467
Flatheaded Mayfly - Heptageniidae Maccaffertium. Count = 233	
Flatheaded Mayfly - Heptageniidae genus not identified. Count = 189	
Flatheaded Mayfly - Heptageniidae Epeorus. Count = 45	
Riffle beetle - Elmidae - Total	341
Riffle beetle - Elmidae, genus not identified. Count = 198	
Riffle beetle - Elmidae Stenelmis. Count = 76	
Riffle beetle - Elmidae Macronychus. Count = 25	
Riffle beetle - Elmidae Optioservus. Count = 24	
Riffle beetle - Elmidae Ancyronyx. Count = 18	
Brushlegged Mayfly - Isonychiidae	337
Crane flies - Tipulidae - Total	252
Crane flies - Tipulidae Tipula. Count = 109	
Crane flies - Tipulidae genus not identified. Count = 99	

Please click on the image to display the complete report.

INCIDENT REPORTS

SUBMITTED BY WQM VOLUNTEERS

Northwest Branch dam. Photo by Ben Israel

Several monitoring teams identified issues that we reported to various agencies in 2023. Two examples:

① Our Northwest Branch in Prince George's County team discovered new dams in their reach. The dams, which were likely constructed by park users to create pools for swimming or fishing, degraded habitat for aquatic insects by submerging several riffles. This was reported to the Prince George's County Parks Department and the dams were removed. ② The Normanstone team in DC reported a discharge from an outfall pipe. Like past discharges at this site, they observed a plume of cloudy water and a foul odor while they were working.

Rock Creek streambed. Photo by Kathy Ferger

Many team leaders reported unusually low stream flows in 2023.

OBSERVATIONS

Over the summer, Kathy Ferger's Upper Rock Creek team observed parts of the streambed that were exposed for the first time in the many years that Kathy has monitored this site near the Kengla House. Kathy hadn't come across this type of streambed before.

Here's Kathy's description: "extensive area of a conglomeration of large gravel not fully solidified with all the spaces between the gravel filled by a hard, sandy material." We could pry out rocks with some effort – the texture was rubbery.

I asked our Montgomery County Parks colleagues about this and received a reply from Dave Sigrist who visited the site: "While this type of bed material is not something we encounter with regularity…it definitely falls within the continuum of natural variability in the piedmont region. Kind of a neat feature to see, since it is fairly uncommon."

Thanks for your reports and observations!

PETE'S DESK

Volunteer Pete Yarrington is a team leader of our Northwest Branch/Ednor Road site and takes care of the specimen identification work. When I asked Pete about any trends he's noticed while doing the ID work the past year, he mentioned that "early instars of stoneflies and sometimes mayflies are sent in regularly." Pete added: "That's fine, because you can only go so far with identifying some of them in the field, and it's difficult to see the structures on younger nymphs necessary to make an ID. In some cases, it is next to impossible in the lab too, and it's better science to leave some IDs at the level of order!"

Pete occasionally receives specimens of pupae which we do not count for IBI calculations and thought it may be helpful to remind our volunteers that if you are fairly certain that the macroinvertebrate you are looking at is in its pupal stage, there is no need to count it or to send it in for further ID.

As some of you have discovered, Pete's forte is fish taxonomy and he is interested in which fish have been encountered by our WQM teams. A few that you may run across in area streams include Tessellated Darters, Fantail Darters, Longnose Dace, Blacknose Dace, Madtom Catfish, and several species of sunfish. He encourages team leaders to send him photos of fish they find while sampling. His suggestions: "The more pics the better, showing fish in hand and in a clear container, if possible, so the we can see the whole fish as well as the shape and size of fins." Fish, like macroinvertebrates, can serve as indicators of stream health.

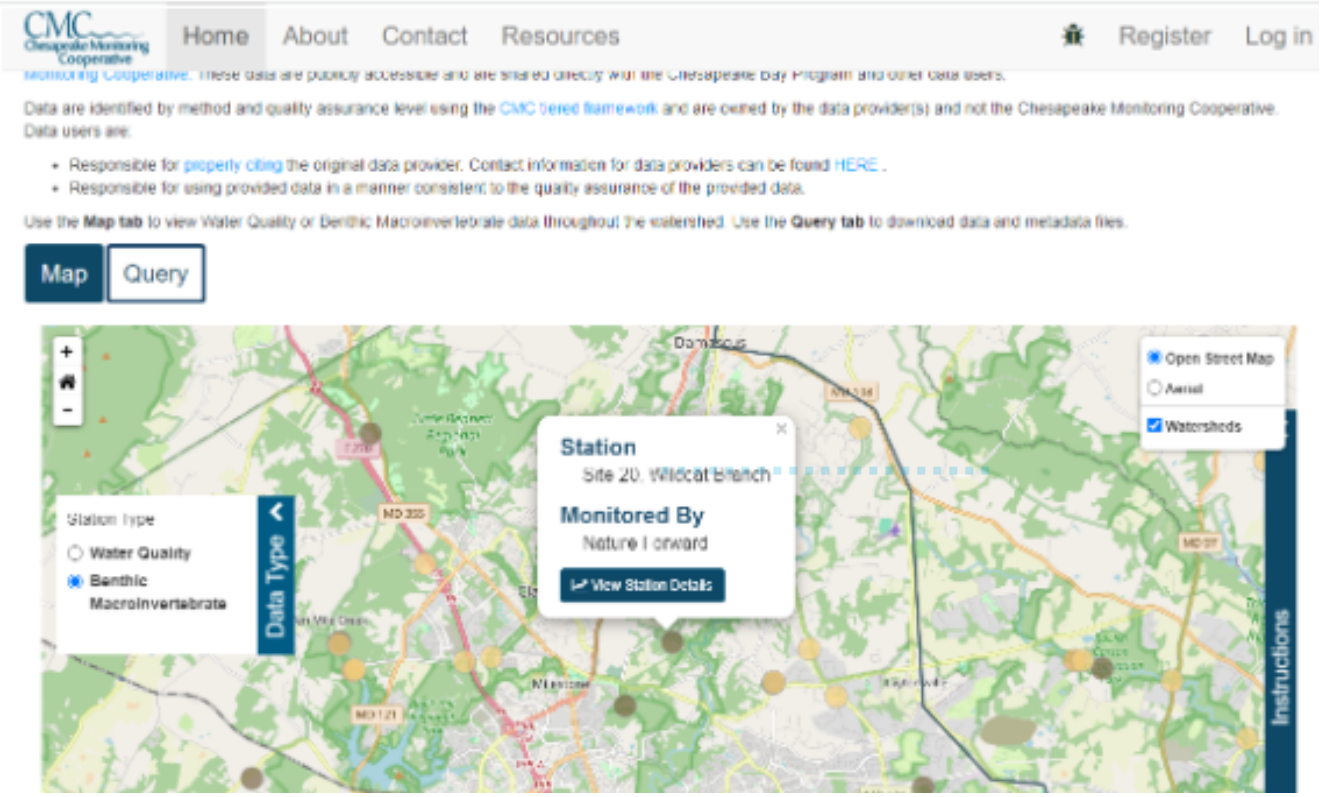
MORE FOR YOU

FOLLOW THE DATA

You can find Nature Forward's water quality monitoring data on the Chesapeake Monitoring Cooperative's "Chesapeake Data Explorer." Visit: https://cmc.vims.edu/#/home.

- Open the map and select "Benthic Macroinvertebrates"
- Choose a monitoring site
- Click on "View Station Details"

A popup window will provide instructions for downloading data.



Click on the image to open the CMC website.

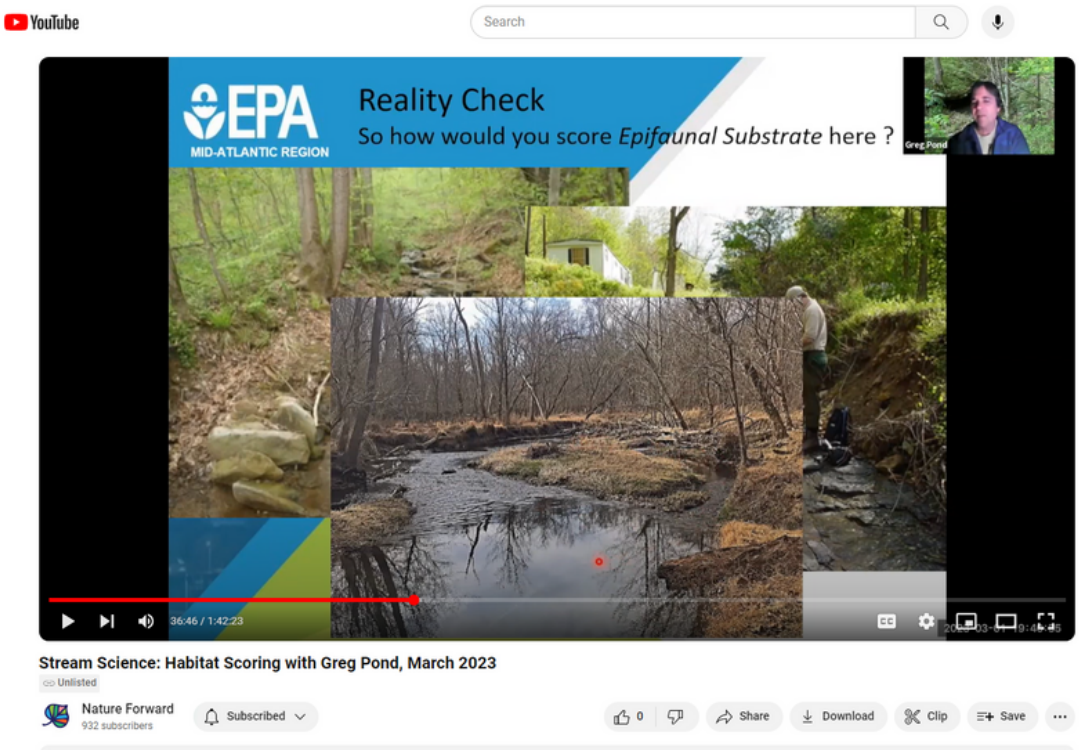
PUBLICATIONS

Bill McFarland had an article published over the summer in National Wildlife®, a magazine of the National Wildlife Federation, featuring volunteers from our Muddy Branch monitoring site. Check it out: So, You Want to be a Stream Monitor. I Do, Too!

Maya Sterett of the Alliance for the Chesapeake Bay posted a blog describing her experiences as a new WQM volunteer and relating some of what she's learned about assessing stream health through biological surveys, Our Hidden Urban Neighbors: Macroinvertebrates. Maya completed Nature Forward's online Advanced Macroinvertebrate Identification classes and recently passed the certification test.

LEARN, REVIEW, RELEARN

We were fortunate to have Greg Pond of EPA offer a virtual training followed by a weekend field class on our habitat assessment parameters last March. You can view the recorded evening class HERE.



Visit Nature Forward's Water Quality Monitoring webpage to watch recorded classes on our introductory stream science and advanced macroinvertebrate identification.

Volunteers who have monitored in the last two years can contact us at cleanstreams@natureforward.org for free access to the classes.