

GSWA Water Quality Programs

Board Meeting Report

June 2021

As we continue to navigate the challenges of remote working/teaching I thank you all for your continuing support of our organization.

Water Quality Monitoring

Chemistry Monitoring

2021 –

For chemistry sampling in 2021, we will continue to sample at the 21 sites sampled in 2020. Our second round of sampling for the year was conducted the week of May 24th. Due to the very dry spring, water levels at all sites were unseasonably low. Both air and water temperatures were above average. We are seeing climate change impacting parameters throughout the watershed, low precipitation and above average air temperatures caused dissolved oxygen levels at all sampling sites to be well below average and in many cases below state standards. The impact of elevated air temperatures on surface waters in the spring is exacerbated by the fact that the trees, which give protective cover and shade, have not yet leafed out. When water temperatures rise too quickly in the spring it causes the dissolved oxygen levels to fall impacting aquatic biota.

In addition to our regular sampling this year we will also be sampling for PFAS at approximately 12 sites throughout the region. PFAS are a persistent, carcinogenic chemical that has been used in manufacturing a myriad of products ranging from fire retardants used on carpets and furniture to Teflon on pots. These chemicals can persist in surface waters. GSWA will conduct a round of sampling to determine where PFAS are present in the watershed. Sampling for PFAS is scheduled to occur in later June or early July.

Finally, thanks to grant funding through Hyde and Watson, we have purchased and received a digital flow meter. This will allow us to more accurately and easily monitor flow throughout the watershed. In our new expanded sampling regions it is essential as the Passaic River in these areas is not safely wadable. The meter will allow us to continue to gather flow readings in areas where we cannot safely utilize the float method used in the upstream areas.

Visual Monitoring

Spring visual assessments are currently underway with many sites having been reported by our Stream Team volunteers already. For 2021 we have selected 28 sites ranging from our historic area all the way through Little Falls. We still have a number of sites that will need volunteer teams to adopt them. If you are interested in learning a little more about your local streams this is a great way to do and help out GSWA's efforts at the same time. Our next Stream Assessment Training will be held in mid- September. We hope that this training event will be held in person with both the indoor training presentation and the outdoor field training portions. If there is interest we will do the indoor portion of the day in a hybrid format so that those unable to attend in person will still be able to participate in that portion.

We have also begun to work with a group who will be collecting data along the Saddle Brook and Goffels Brook in Ridgewood. This student run group reached out to GSWA and we will be working to train them to collect data. Gathering data on these downstream tributaries will help to give us insight to water quality issues as we progress downstream along the Passaic.

Macroinvertebrate sampling –

Macroinvertebrate sampling for 2021 will be the week of June 14th. After consulting with Normandeau Lab, who processes our samples, we are adding new protocols to our sampling methods so that we will be able to more accurately sample our downstream sites. As we continue to expand down along the Passaic River, water depth and substrate type begin to change. Using our current methodology we were unable to collect macro samples in these areas. With our new methods in place we will not be able to better assess these sites with a wider range of parameters.

Bacteria sampling –

The 2021 Bacteria sampling is scheduled for the weeks of 7/6 through 8/3. Sampling is conducted over five consecutive Tuesday mornings. If you are interested in helping out please reach out to me at sandral@greatswamp.org. More information on the program will be available as we get closer to the sampling dates.

Culvert Sampling –

In 2020 GSWA participated in the NAACC Culvert sampling program. Working with Adam and some of our interns we have completed sampling all the culverts in the Passaic Headwaters sub-watershed. This program helps to determine the status of the culvert crossings (bridges, pipes or other structures) for ecologic connectivity for both aquatic and terrestrial organisms. Through a series of observations, not unlike the visual stream assessments, we can offer data on the stream connectivity through the culvert crossings. This helps to determine if a crossing needs to be upgraded or altered in some way to help with the over health of the local ecosystem. We share this data with both the NAACC and the NY/NJ HEP.

In 2021, we hope to continue to collect culvert data, expanding our knowledge on the impacts these crossings have on our water quality and ecosystems.

Remote Education –

Utilizing our grant funding we purchased a full set of equipment that has allowed us to bring our education lessons, live, into classrooms. We have purchased a Galaxy tablet for connecting through zoom/meet formats from the stream as well as a gopro camera that will be used to capture video and live stream macroinvertebrates for students to identify, and footage from the water on how we collect the samples. To complete the kit we purchased accessories that allow us to attach the new equipment to tripods and cases to protect it from water damage.

Many of the schools we have worked with historically, as well as a number of new schools, have been able to hold virtual field trips with GSWA staff connecting with them directly from the Silver Brook at the CMA. The teachers that have participated have given us very positive feed back on the programing we developed and the students were actively engaged in the remote sampling activities, guiding GSWA staff through the steps of sampling using the instructions supplied beforehand through the teachers. They

also learned about ecosystem services and flood plain forest ecology and were able to ask questions about STEM careers and the paths available to get into the field of ecology.

Water Quality Committee

The Stream Team held our second meeting of the year on May 3rd. We reviewed the visual assessment protocols and discussed the schedule for collecting the data. We also reviewed our sampling and meeting schedule for the 2021 year. Attached please see the updated sampling and meeting schedule.

Passaic River – City of Water Day Clean Up

On Saturday July 10th, GSWA will be host a region wide Passaic River Clean up. The event will take place from 10am to 1pm with clean up hubs at four locations. We are looking for volunteer teams to help us organize the hubs in Morristown, Chatham, Livingston and Berkeley Heights. At each station hub we will have gloves, garbage bags and garbage pickers to hand out to our clean up volunteers. We will also give each clean up team a tally sheet for single use plastics that they collect. One of our goals for the day is to help bring a greater understanding of the impact of single use plastics on our local environments. IF you are interested in helping either as a hub coordinator or as a clean up volunteer please contact me at sandral@greatswamp.org.

2021 – Sampling dates

- ▶ Feb – Week of the 22th – chemical sampling
 - ▶ Moved to March 8th and 9th due to weather
- ▶ Week of May 5th Stream Team Meeting
 - ▶ Review Visual Assessments and confirm sites
- ▶ April – 4th – Virtual Stream Assessment Training
- ▶ April /May – Spring Visual Assessments
- ▶ May - Week of 24th PFAS sampling
- ▶ May – Week of the 17th 2nd Round Chem sampling
- ▶ June - Week of the 27th Stream Team meeting
 - ▶ Review Bacteria sampling
- ▶ Macroinvertebrate sampling week of the 14th
 - ▶ Work with interns and Stream Team as available
- ▶ July – **NEW** - 9th through the 11th - City of Water day - Stream Clean ups!
- ▶ July -
 - ▶ Bacteria Sampling – Tues mornings
 - ▶ 7/6 through 8/3
- ▶ August – Week of the 23th - Stream Team Meeting - Review of Bacteria sampling
 - ▶ Chemical Sampling round 3 - Week of the 23rd
- ▶ September – Fall stream assessment training
- ▶ October - Week of the 18th - Stream Team meeting
- ▶ Oct/Nov – Fall stream Assessments
- ▶ November – Chemical sampling round 4
 - ▶ Week of 15th