



**Resource Protection Group, Inc. – Reston Stream Monitoring  
PROGRESS REPORT**

**For Period Apr 1, 2022 through Jun 30, 2022**

**PROJECT NUMBER:** GC22LM00TZA0000

**PERSONNEL:** Brendan M. Foster

**COOPERATOR:** Resource Protection Group, Inc.

**START DATE:** October 1<sup>st</sup>, 2020

**END DATE:** September 30<sup>th</sup>, 2025

**OBJECTIVES:**

This monitoring program seeks to measure and evaluate system-wide hydrologic, water-chemistry, and ecologic responses to enhanced stream restoration practices, with a focus on the stream environments and practices employed in Snakeden Branch and The Glade, in Reston, Virginia. Specifically, this program will:

1. Initiate and conduct precipitation, air temperature, streamflow, water-quality, and ecological monitoring at multiple locations in the Snakeden Branch and The Glade for:
  - a. Two years before enhanced stream restoration practices are implemented,
  - b. Two years during implementation of enhanced stream restoration practices, and
  - c. Two years after implementation of enhanced stream restoration practices;
2. Make all monitoring data available to other researchers and the public expeditiously via the USGS National Water Information System Web Interface (NWISWeb; <https://waterdata.usgs.gov>) and other formal data outlets; and
3. Provide peer-reviewed documentation of the findings of the monitoring program.

**PROGRESS DURING PERIOD:**

**SITES:**

1. Continuous hydrologic and water-quality measurements continue to be collected and transmitted in real-time at all monitoring stations with minimal issues or fouling.

2. Routine servicing (cleaning and calibration checks of all equipment) were completed at all stations.
3. Discrete water sampling continued at Snakeden Branch and The Glade and included routine sampling, “wet weather conditions” sampling, and storm sampling. Samples were sent to the USGS National Water Quality Laboratory and USGS Kentucky Sediment Laboratory for analyses.

DATA:

1. Real-time continuous provisional data continues to be served in near real-time on NWISWeb.
  - Site ID 0164578734 Snakeden Branch above Lake Audubon:  
<https://waterdata.usgs.gov/monitoring-location/0164578734/#parameterCode=00065&period=P7D>
  - Site ID 0164579522 The Glade near Howland Drive:  
<https://waterdata.usgs.gov/monitoring-location/0164579522/#parameterCode=00065&period=P7D>
  - Site ID 385536077204401 Meteorological station at Glade Rec Area:  
<https://waterdata.usgs.gov/monitoring-location/385536077204401/#parameterCode=00045&period=P7D>
2. Preliminary ratings have been developed between gage height and discharge for The Glade and Snakeden Branch and remain under development. The provisional real-time discharge values are being served on both stream monitoring station’s NWISWeb pages.
3. Plans for additional flow measurements have been made to accelerate the expansion of the stage-discharge ratings at both stream monitoring stations. This will involve the deployment of additional in-stream equipment and will commence in the next quarter.
4. Storm samples from three storms were collected this quarter.
5. The official data release for all benthic macroinvertebrate, fish, and physical habitat surveys is under review and will be released to the public upon completion. These data will be reposted on sciencebase.gov and will have a unique URL for quick access which will be sent to cooperator as soon as review has completed and it has received approval. Estimated delivery of this data release is early next quarter.
6. An interactive data mapper web-application was developed by Brendan Foster to compliment the data release that allows users to easily access, visualize and interact with the ecological data. This web-application will have a unique URL and will be delivered to cooperator upon completing review and receiving approval.
7. Stream monitoring cameras were deployed at both stream monitoring stations. The most recent 24-hour time lapse of the streams are being served in real-time and can be accessed by visiting the next generation NWISWeb pages for each station (linked above in point 1 of DATA section). Additional imagery and accompanying interactive hydrographs for each stream monitoring station are being served in real-time and can be accessed via the USGS HIVIS platform:

- Site ID 0164578734 Snakeden Branch above Lake Audubon:  
[https://apps.usgs.gov/hivis/camera/0164578734\\_VA\\_Snakeden\\_Br\\_above\\_Lake\\_Audubon\\_Reston](https://apps.usgs.gov/hivis/camera/0164578734_VA_Snakeden_Br_above_Lake_Audubon_Reston)
- Site ID 0164579522 The Glade near Howland Drive:  
[https://apps.usgs.gov/hivis/camera/0164579522\\_VA\\_The\\_Glade\\_nr\\_Howland\\_Dr](https://apps.usgs.gov/hivis/camera/0164579522_VA_The_Glade_nr_Howland_Dr)

***PLANS FOR NEXT QUARTER:***

1. Continue servicing trips for Reston stream monitoring stations and precipitation gage.
2. Continue discrete water sampling including storm sampling.
3. Conduct Summer 2022 fish surveys at all eight ecological monitoring reaches.