



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

For Period Jul 1, 2022 through Sept 30, 2022

PROJECT NUMBER: GC22LM00TZA0000

PERSONNEL: Brendan M. Foster

COOPERATOR: Resource Protection Group, Inc.

START DATE: October 1st, 2020

END DATE: September 30th, 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. 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. 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.
3. The official data release for all benthic macroinvertebrate, fish, and physical habitat surveys in 2021 was published and is available at URL <https://doi.org/10.5066/P94M099Z>
4. 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 was published and is available at URL <https://rconnect.usgs.gov/RestonStreams/EcologicalDataMapper/>
5. Stream monitoring cameras continue to serve imagery of Snakeden Branch and The Glade:
 - Site ID 0164578734 Snakeden Branch above Lake Audubon:
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
6. Summer 2022 fish surveys were completed Aug 29-31, 2022 for all 8 ecological monitoring reaches.
7. Fall 2022 benthic macroinvertebrate sampling and habitat surveys were completed Sept 19-22, 2022 for all 8 ecological monitoring reaches.

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. Initiate monthly stream carbon monitoring.
4. Prepare autosamplers to collect elevated SC samples to evaluate chloride levels during snowstorms.
5. Prepare for longitudinal water quality surveys.