ANNUAL SYSTEM STATUS REPORT AND QUALITY MANAGEMENT PLAN REVIEW FY-2024

NEIWPCC

December 2024

Submitted by:

01/07/25

Emily Bialowas
NEIWPCC Quality Assurance Program Manager

Date

A. Year in Review

Workplan Reporting

NEIWPCC has an EPA-funded work plan and associated resources to allow the quality assurance program manager (QAPM) to support the organizational quality management system. Activities for this effort are reported to the appropriate EPA project officer. Below is the reporting for FY-2024.

§106 QUALITY MANAGEMENT

NEIWPCC Job Cost Codes: 1081-006

First Quarter

- Completed QA orientation trainings for eight new employees.
- Completed Phase 2 of the annual staff self-assessment.
- Met with NEIWPCC Quality Management Steering Committee (QMSC) to provide update on QMS anticipated FY2024 activities on 12/5/2023.
- Participated in Northeast QA Round Table virtual meeting on 11/9/2023.
- Submitted annual system status report and QMP review for FY-21 to QMSC and EPA Regions 1 & 2 on 12/22/2023.

Second Quarter

- Completed QA orientation trainings for three new employees.
- Completed Quality Program Assessment with EPA Region 1 QA staff, Nora Conlon and Emily Ambeliotis, on 2/1/24.
- Presented annual awareness training at NEIWPCC's All-Staff meeting on 3/29/2024.

Third Quarter

- Completed QA orientation trainings for two new employees.
- NEIWPCC staff completed one QA Field Assessment: Q23-033- Native riparian species conservation and monitoring in a Lake Champlain sub-basin. Full report included in Appendix C.
- Attended EPA Northeast QA Roundtable Virtual Meeting 5/9/2024.
- Attended EPA's virtual Quality Conference 6/25-6/26/2024.

Fourth Quarter

- Completed QA orientation trainings for five new employees.
- NEIWPCC staff completed seven QA field assessments: Q21-030- Lake Champlain high-frequency monitoring program 2021-2025; Q22-006- Early Detection Monitoring for Round Goby; Q23-025- Biological Index Development: A "Three-legged Assessment Stool" for Lakes within the Lake Champlain Basin; Q23-008- Long-term Water Quality and Biological Monitoring Project for Lake Champlain.Q23-010- Cyanobacteria Monitoring on Lake Champlain; Q23-005- Flower Brook Geomorphic and Flood Resilience Assessment; Q23-024- Evaluating Functional Uplift and Microhabitat Effects of Stream Restoration Projects. Full reports included in Appendix C.

QAPP Review and Approval

In FY-2024, 23 quality assurance project plans (QAPPs) were approved. A list of the QAPPs reviewed and approved is contained in Appendix B. 22 of the projects originated from the Lake

Champlain Basin Program (LCBP) and one from the Long Island Sound Study. In addition, there are several QAPPs that were submitted in FY-2024 that will be approved and finalized in FY-2025. Those QAPPs will be included in next year's report.

QA Field Assessments

Eight QA field assessments were performed on projects with NEIWPCC QAPPs in FY-2024.

The field assessment reports for these projects are contained in Appendix C. The projects assessed and the dates of the assessments are:

- Q23-033- Native riparian species conservation and monitoring in a Lake Champlain sub-basin, 5/28/24.
- Q21-030- Lake Champlain high-frequency monitoring program 2021-2025, 7/24/24.
- Q22-006- Early Detection Monitoring for Round Goby, 8/6/24.
- Q23-025- Biological Index Development: A Three-legged Assessment Stool for Lakes within the Lake Champlain Basin, 8/7/24.
- Q23-008- Long-Term water quality monitoring and biological monitoring project for Lake Champlain, 8/30/24.
- Q23-010- Cyanobacteria Monitoring on Lake Champlain, 8/30/24.
- Q23-005- Flower Brook Geomorphic and Flood Resilience Assessment, 9/13/24.
- Q23-024- Evaluating Functional Uplift and Microhabitat Effects of Stream Restoration Projects, 9/13/24.

No deviations or nonconformances were observed during the assessments of these projects.

QA Presentations and Training

In FY-2024 there were several presentation and training opportunities offered in association with the quality management system. These included:

- Conducted 18 QA awareness trainings for new employees.
- Participated in Northeast QA Round Table meetings on 11/9/2023 and 5/9/2024.
- Attended EPA's virtual Quality Conference 6/25- 6/26/24.
- Presented annual awareness training at NEIWPCC's All-Staff meeting on 3/29/2024.

B. Quality System Review

Areas of Success

The following activities are indicators of a well-functioning quality management system:

- No non-conformances found in the 2024 quality program assessment.
- Retention of QA designees.
- Implementation of processes for annual QAPP data verification and project managers' certification of QAPP annual review.
- Continuation of a high rate of QA field assessments.

Areas of Improvement

The system is performing well, and continuous improvement efforts were made in FY 2024, including:

- Better turnaround time on QAPP reviews in line with NEIWPCC's internal goals.
- Identified the following projects which were executed and should have had QAPPs: LS-2023-019, LS-2022-024, LS-2021-030, L-2020-007.
- Led to coordination with EPA staff to develop resources and processes for staff to determine the need for projects to require a QAPP.
- Continued development and revision of process documentation.
- Adjustment of our standard electronic filing system to provide more intuitive organization and better align with our annual data verification processes.

C. Goals for Next Year

- Conduct and coordinate a high rate of field assessments, engaging project managers and QAPM designees.
- Recruitment and training of new QA designees.
- Formalize process for determination of projects requiring QAPPs.
- Update QAPP guide for project managers and contractors based on the updated EPA standard.
- Refine documentation of processes within the quality management system.

D. Quality Management Plan Review

As of the time of submission of this report, Version 7 of the NEIWPCC QMP is in effect. Version 7 of the QMP was approved and signed by EPA region 1 and 2 QA staff in October 2023.

APPENDIX A: NEIWPCC ORGANIZATIONAL CHART

Executive Committee & Commission

Susan Sullivan
Executive Director

OPERATIONAL DIVISIONS

FISCAL
Lucia Walker
Comptroller

- **Patti Brady** — Payroll
- **Kenya Bazile** — AP, Grants, Purchase Orders

BUSINESS OPERATIONS
Samantha Thompson
Director

- **Alexandra Atkinson** — Information Officer
- **Kat Arnold** — Asst. Information Officer
- **Julianna McGovern** — Information Officer
- **Megan Martin** — Meeting & Events Planner

HUMAN RESOURCES
Michael Wilkinson
Director

- **Lee-Ann Lowe** — Talent Acquisition
- **Katelyn Sultzbach** — Benefits, Employee Relations
- **Alex Ortolani** — Training, Compensation, HR Data Analytics

COMMUNICATIONS
Amy Magin
Director

- **Cheyenne Ellis** — Editorial
- **Beth MacBlane** — Editorial, Social Media, Website
- **Brian Yurasits** — Editorial, Video

PROGRAMMATIC DIVISIONS

WATER QUALITY
Richard Friesner
Director
LISS

- **Alex Dumont** — LISS, NEBAWWG, Wetlands
- **Beth Malcolm** — Climate Change, LINAP, WQS, TMDL, 303(d) Training
- **Maryann Dugan** — HABs, Invasive Species, NAB, Monitoring, RIDEM
  - **Devon Case** — Nonpoint Source, TACo, RIDOH, Stormwater

WASTEWATER & ONSITE PROGRAMS
Christina Stringer
Director
ME DWP/SoPo, NYC DOW, NYC CRP

- **Michelle Jenkins** — Onsite, Title 5, WW Certification
- **James Plummer** — YEP Program, UST/LUST, NPDES
- **Jennifer Lichtensteiger** — NPDES, Residuals
- **Ryan Buckley** — Training & Certification
- **Ashley Harrington** — Training & Certification
- **Daphne Short** — Training & Certification
- **Brian Scovel** — Staff Attorney
  - **Shelly Clark** — Contracts/Grants
    - **Shelley Basara** — Contracts/Grants

WATER RESOURCE PROTECTION
Sarita Croce
Director
LCBP

- **Emily Bialowas** — Hudson River, QMS
- **Ian Dulin** — Source Water Protection, CWA-SDWA Integration, Emerging Contaminants, NYS SWAP, Water Reuse

NE IW PCC

December 2024

APPENDIX B: QAPP LIST FOR FY-24

NEIWPCC Project Manager	QAPP ID	QAPP Title	QAPP Reviewer	Grant Number	Date Draft QAPP Received	Date Review Completed	Date Final QAPP Received	Signature Page Received
Meg Modley Gilbertson	Q23-026	Evaluating Habitat Function in Floodplain Natural Communities of the Lake Champlain Basin to Support Conservation and Restoration Prioritization	Maryann Dugan	LC00A00981-0	7/6/2023	8/8/2023	2/1/2024	TRUE
Mae Kate Campbell	Q23-028	Development of a Soil Health Calculator Tool to Quantify Impacts of Agricultural Management Practices on Soil Health in the Lake Champlain Basin	Emily Bialowas	LC 00A00981-0	7/14/2023	9/13/2023	10/18/2023	TRUE
Mae Kate Campbell	Q23-030	Illicit Discharge Detection and Elimination for Sutton, Quebec in the Missisquoi Bay, Phase 1	Emily Bialowas	GLFC: Technical Tasks	8/3/2023	10/2/2023	10/6/2023	TRUE
Lauren Jenness	Q23-031	Stormwater and Stream Project Development in the Lake St. Catherine and Poultney Mettowee Watersheds	Jordan Bishop	LC00A00707-0	8/4/2023	8/24/2023	12/11/2023	TRUE
Jordan Bishop	Q23-029	Long-term Quantification of nitrogen bioextraction and carbon capture by seaweed and bivalve aquaculture in Long Island Sound	Richard Friesner	LI00A01059	8/9/2023	9/22/2023	11/17/2023	TRUE
Matt Vaughan	Q23-034	State of the Lake and Ecosystem Indicators Report for Lake Champlain – 2024	Emily Bialowas	LC 00A00707-0	8/22/2023	9/29/2023	10/18/2023	TRUE
Matthew Vaughan	Q23-035	Lake Champlain Basin De-icing Salt Study	Emily Bialowas	LC00A00981	9/25/2023	10/31/2023	1/3/2024	TRUE
Mae Kate Campbell	Q24-001	Sucker Brook Phosphorus Loading Assessments	Emily Bialowas	LC00A00707-0	10/9/2023	12/7/2023	1/11/2024	TRUE
Meg Modley Gilbertson	Q24-002	Lewis Creek Knotweed Initiative	Emily Bialowas	LC 00A00981-0	10/25/2023	11/5/2023	12/12/2023	TRUE

Matthew Vaughan	Q24-004	Discovery Acres: A Water Quality Research and Education Site in the St. Albans Bay Watershed	Emily Bialowas	LC00A000981	1/4/2024	3/1/2024	4/19/2024	TRUE
Matthew Vaughan	Q24-003	Estimating the Bioavailable Phosphorus Loading Avoided by Implementation of Restoration Practices	Emily Bialowas	LC00A00695	1/5/2024	3/1/2024	5/31/2024	TRUE
Mae Kate Campbell	Q24-005	Warren County Culvert Assessment and Asset Management Plan Project	Emily Bialowas	LC 00A00981-0	2/20/2024	4/19/2024	4/29/2024	TRUE
Matthew Vaughan	Q24-006	Sources and Consequences of Stream Salinization in the Lake Champlain Basin	Emily Bialowas	LC00A01141	3/18/2024	4/19/2024	5/31/2024	TRUE
Meg Modley Gilbertson	Q20-025-A2	Lake Champlain Basin Boat Launch Steward Programs: Quality Assurance Project Plan	Emily Bialowas	LC00A00981-0	3/26/2024	5/13/2024	5/28/2024	TRUE
Lauren Jenness	Q23-007-A1	Stream Wise Award Programs Generic Quality Assurance Project Plan	Emily Bialowas	N/A	4/12/2024	5/21/2024	6/7/2024	TRUE
Matthew Vaughan	Q24-007	Pelagic, tributary, and shoreline microplastics in Lake Champlain: Sources and dynamics	Emily Bialowas	LC00A01141-0	5/23/2024	6/14/2024	7/15/2024	TRUE
Mae Kate Campbell	Q24-008	Myco-Phytoremediation in Multi-Functional Riparian Forest Buffers: Restoration, Education, Training, and Rematriation	Emily Bialowas	LC00A01141	6/4/2024	7/2/2024	7/8/2024	TRUE
Lauren Jenness	Q24-009	Invasive Species Management and Ecosystem Restoration in the Mad River Valley	Emily Bialowas	LC00A01141	6/6/2024	8/1/2024	8/20/2024	TRUE
Lauren Jenness	Q24-010	Lake Wise Assessment Programs in the Lake Champlain Basin: Generic Quality Assurance Project Plan	Emily Bialowas	N/A	6/7/2024	7/9/2024	7/15/2024	TRUE

Meg Modley Gilbertson	Q23-027-A1	Aquatic Plant Survey of Lake Eden	Emily Bialowas	LC00A01141	6/14/2024	6/21/2024	8/7/2024	TRUE
Meg Modley	Q24-011	Assessment of watermilfoils (Myriophyllum spp.) in the Lake Champlain Basin: population genetics and influence on native plant communities	Maryann Dugan	LC00A01141	7/3/2024	7/25/2024	8/21/2024	TRUE
Meg Modley Gilbertson	Q23-021-A1	Champlain Aquatic Invasive Monitoring Program- CHAMP	Emily Bialowas	NA23NOS4690078	6/13/2024	6/18/2024	8/2/2024	TRUE
Meg Modley Gilbertson	Q24-013	Long Term Freshwater Mussel Population Assessment in the Missisquoi, Lamoille, Winooski and Poultney Rivers	Emily Bialowas	LC00A01141	7/12/2024	8/12/2024	9/11/2024	TRUE

APPENDIX C: FIELD ASSESSMENT REPORTS

QA Field Assessment Data Sheet

Project Title: Native riparian species conservation and monitoring in a Lake Champlain sub-basin

QAPP ID: Q23-033

Assessor(s): Meg Modley Gilbertson

Assessment Date: 5/28/24

Project Location: Lewis Creek Watershed

Project Staff: Kiley Briggs

Brief Project Description: The Orianne Society (TOS) and Lewis Creek Association (LCA) will assess the status and distribution of a riparian species of greatest conservation need within the Lewis Creek basin, identify site-specific threats, and prioritize restoration projects for the species. To do this, we will conduct at least 60 wildlife surveys, present written habitat restoration proposals to at least 6 landowners, and assist at least one landowner applying for enrollment in conservation programs.

QA Assessment Summary:

On 5/28/24 Meg Modley Gilbertson met Kiley Briggs of the Orianne Society to observe wildlife surveys in the Lewis Creek Watershed in the Lake Champlain Basin. Site specific information has been withheld from this assessment due to the sensitivity of private landowners and species of conservation information. A 1km stretch of the stream was surveyed (both sides).

Due to recent storm impacts to the stream, the assessment was conducted from upstream to downstream using Survey 123. The assessment included air temperature, water temperatures, and cloud cover. The goal of the assessment was to identify habitat restoration projects. The team walked through the river and along the shoreline in waders. Stands of invasive Japanese knotweed were noted mixed in with willow stands and sandy shoreline (which is favorable habitat for turtles). The first turtle to be observed (likely female) was digging a nest and we did not pick it up or disturb it. Kiley marked the site as a possible nesting site.

Another sand bar on the side of the stream had several disturbed turtle nests (likely by raccoon) with round eggs that were likely from snapping turtles.

One area where an oxbow met the river was identified as high-quality habitat for turtles. Another turtle was found. The rings on the turtle shell were counted to estimate age (12 years). Wood turtles reach reproductive maturity in their teens. These turtles only develop rings on their shells while they are growing (12-15 years). Wood turtles can live up to 80 years and continue to reproduce. The turtle was picked up and moved away from the site to weigh and measure the turtle to reduce the amount of human smell near the collection site. The shell was measured with a caliber and a triangular metal file was used to mark notches in the shell. The turtle was weighed with an electro samson scale.

Wood turtle weight collected

At the end of the transect another sand bar with turtle activity was identified and the surrounding habitat was recorded in Survey 123 as a possible location to engage the land owner for a conservation easement. There were few invasive species present, and the stream was very silty with chest deep water with adequate buffer. Predation of turtles at this site is an issue. Previous visits to this site found turtles with one or more limbs missing. We discussed efforts to protect turtle nests from predation.

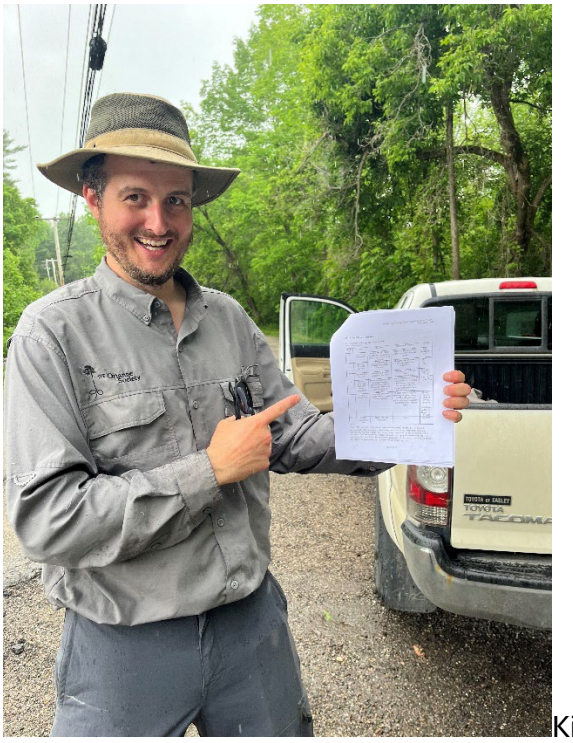
The return survey moving upstream along the 1 km stretch of stream resulted in the find of a pregnant female turtle and a second turtle walking adjacent to the stream on the foot path. All turtles were recorded in Survey 123.

Is there an approved QA Project Plan for the overall project and has it been reviewed by all appropriate personnel?

Yes, QAPP was reviewed with all appropriate personnel and copy was on hand for field assessment.

Is a copy of the current approved QA Project Plan maintained at the site? If not, briefly describe how and where quality assurance and quality control requirements and procedures are documented at the site.

Yes, copy was on site.


Kiley Briggs with copy of QAPP on site.

Is the implementation of the project in accordance with the QA Project Plan?

The project is operating in accordance with the QAPP.

Are there deviations from the QA Project Plan? (If yes, explain)

N/A

Do any deviations from the QA Project Plan affect data quality?

N/A

Have any corrective actions been taken during the project?

No

Did these corrective actions impact data quality (If yes, describe)

N/A

September 12, 2024

QA Field Assessment Report

Project Title: Lake Champlain high-frequency monitoring program 2021-2025

QAPP ID: Q21-30

Assessor(s): Matthew Vaughan, PhD

On July 24, 2024, Dr. Matthew Vaughan (NEIWPCC/LCBP Chief Scientist and Project Officer) accompanied Kelsey Colbert (NEIWPCC/LCBP Long-term Monitoring Biologist), Anna DeRoche (VTDEC Long-term Monitoring Program First Mate) and Dr. Peter Isles (VTDEC Aquatic Biologist) during routine water quality monitoring buoy maintenance on the Lamoille River, near the Vermont Route 2 bridge crossing.

Field activities conducted during this visit included retrieving the water quality monitoring buoy, cleaning the buoy, and sensor calibration in accordance with manufacturer recommendations. Calibrations were performed for turbidity, dissolved oxygen, nitrate, specific conductivity, and pH sensors.

All field efforts observed were conducted in accordance with the approved quality assurance project plan (QAPP).

Unfortunately, a camera was not available during this assessment. Photos from other routine maintenance visits at this site are available upon request.

QA Field Assessment Data Sheet

Project Title: Early Detection Monitoring of Round Goby

QAPP ID: Q22-006-A1

Assessor(s): Meg Modley Gilbertson

Assessment Date: 8/6/24

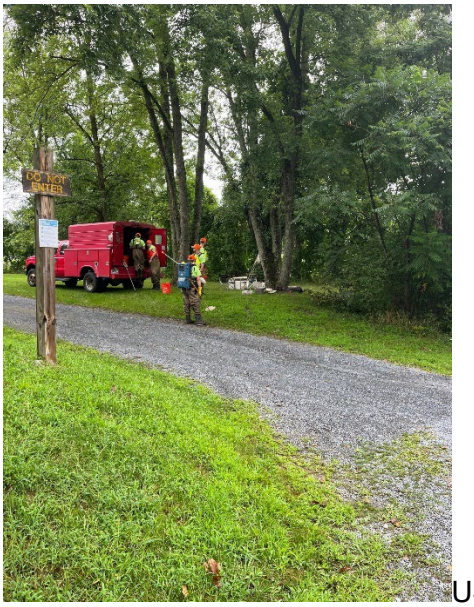
Project Location: Champlain canal stretches

Project Staff: Scott George and field staff

Brief Project Description: The purpose of this project is to extend ongoing surveillance efforts for Round Goby currently being conducted in the Eastern Erie Canal into the Champlain Canal. Monitoring will use environmental DNA (eDNA), benthic trawling, and nearshore electrofishing in order to provide a full suite of information on the distribution of Round Goby as well as relative abundance of other benthic fish species that may be affected by establishment of Round Goby.

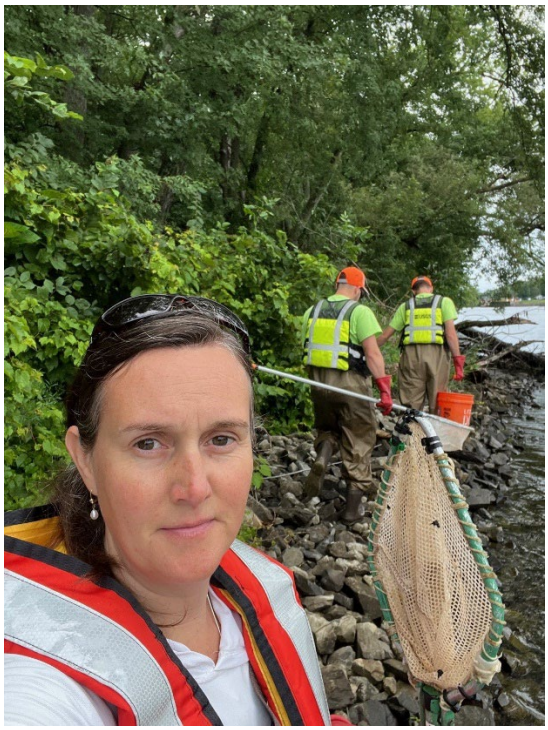
QA Assessment Summary:

Meg Modley Gilbertson met the USGS monitoring crew at the Hudson River Boat Launch in Fort Edward, NY to observe and assist with round goby early detection monitoring. The crew divided into 2 teams. One crew conducted trawling in the main stem of the river after ensuring that the net was all intact and ready to go and the other conducted electrofishing along the shoreline for 900 seconds per the QAPP.



USGS prep for sampling in Fort Edward

The sampling site is identified in the QAPP as the Fort Edward at canal conjunction location. Meg participated in the electrofishing while observing the trawling crew out in the river conduct the three replicate 150 m pulls using the Siamese trawl.


Round goby electrofishing and trawling in Fort Edward, NY

In support of the electrofishing effort, I followed the team wearing appropriate waders, gloves, and PFDs with a net to assist with capturing fish. All fish captured in nets were transferred to 5-gallon buckets and brought back to the launch site where mini aerators were inserted into the buckets. All fish captured were identified and counted and recorded on field data sheets. No round goby was collected at the site.

Fish identification, counting, and data recording in Fort Edward from trawling and electrofishing effort.

The second stop (sampling site) was at the Town of Saratoga Boat Launch in Quaker Springs, NY to conduct trawling and electrofishing between locks C4 and C5.


Bucket of fish collected using Smithroot backback electroshocking equipment between Lock C4-C5.

Third stop below lock C2 in Mechanicsville, NY for electrofishing (could not get boat in above Lock C2 for trawling due to schedule locking for round goby response). Trawling will occur on another day.


900 second electrofishing effort below Lock C2

Fish identification, counting, and recording below Lock C2 from electrofishing effort.

Is there an approved QA Project Plan for the overall project and has it been reviewed by all appropriate personnel?

Yes

Is a copy of the current approved QA Project Plan maintained at the site? If not, briefly describe how and where quality assurance and quality control requirements and procedures are documented at the site.

Yes, below is a photo of USGS Scott George with the QAPP on site in Town of Saratoga, NY sampling between locks C4-C5:

Is the implementation of the project in accordance with the QA Project Plan?

Yes

Are there deviations from the QA Project Plan? (If yes, explain)

No

Do any deviations from the QA Project Plan affect data quality?

N/A

Have any corrective actions been taken during the project?

No

Did these corrective actions impact data quality (If yes, describe)

N/A

QA Field Assessment Data Sheet

Project Title: Biological Index Development: A "Three-legged Assessment Stool" for Lakes within the Lake Champlain Basin

QAPP ID: Q23-025

Assessor(s): Mae Kate Campbell

Assessment Date: August 7, 2024

Project Location: This project includes data collection from various inland lakes in New York and Vermont. This QA assessment took place at Long Pond in Greensboro, VT.

Project Staff: Ben Block and Ismar Biberovic, Tetra Tech; Kellie Merrell and VT DEC Lakes and Pond Interns, VTDEC

Brief Project Description: This project is utilizing a combination of existing biological data and additional data collection on inland lakes in the US portion of the Lake Champlain basin to create three indices of biological integrity (for diatoms, macroinvertebrates, and macrophytes). These indices can be used to qualify the condition of inland lakes to inform management.

QA Assessment Summary: I joined staff from Tetra Tech and the Vermont Department of Environmental Conservation for one of the last field days planned for this project. We traveled to Long Pond in Greensboro, VT. This project aims to collect data on lakes representing a gradient of conditions from pristine to severely disturbed, and Long Pond is classified as a pristine/reference lake for the purposes of this work. The Tetra Tech project team collected their standard suite of measurements. We began by collecting physical habitat data across 10 points around the shoreline of the lake. Shoreline vegetation type, physical condition, and the presence of any human-made disturbances are noted on a digital field form. Macroinvertebrate samples are collected at each point using a kick net and combined into one large bucket to form a composite sample for each lake. We then traveled to the deepest point of the lake to collect water quality data and a sediment core. In-situ water quality parameters including temperature, dissolved oxygen, and pH were collected using a multi-parameter probe, and a Secchi disk was used to assess water clarity. Samples were collected for additional water quality parameter analysis to be conducted at the Vermont Agriculture and Environmental Laboratory. A sediment core was collected to characterize diatoms.

Concurrent with the Tetra Tech team’s habitat evaluation, the VTDEC team undertook characterization of macrophytes and conducted a survey for aquatic invasive species.

1: View of Long Pond from one of the physical habitat assessment points.

2: *VTDEC Lakes and Ponds Interns collect water quality samples.*

Is there an approved QA Project Plan for the overall project and has it been reviewed by all appropriate personnel?

The QAPP and accompanying sampling and analysis plan (SAP) for this project were reviewed by NEIWPCC and EPA and approved on August 15, 2023.

Is a copy of the current approved QA Project Plan maintained at the site? If not, briefly describe how and where quality assurance and quality control requirements and procedures are documented at the site.

A digital copy of the approved QAPP, SAP, and field forms are maintained on tablets used by all field staff.

Is the implementation of the project in accordance with the QA Project Plan?

Implementation of the project is proceeding in accordance with the approved QAPP.

Are there deviations from the QA Project Plan? (If yes, explain)

I observed no deviations from the approved QAPP during my assessment.

Do any deviations from the QA Project Plan affect data quality?

N/A

Have any corrective actions been taken during the project?

The Tetra Tech team reported in a recent quarterly report that in their initial field data review from 2023 field work 2 data records (for dissolved oxygen) were suspected of being erroneous because of their high values (>12 mg/L). These are being reviewed and might be censored.

Did these corrective actions impact data quality (If yes, describe)

No data quality impacts are expected from the potential corrective action described above.

September 12, 2024

QA Field Assessment Report

Project Title: Long-term water quality and biological monitoring project for Lake Champlain

QAPP ID: Q23-008

Assessor(s): Matthew Vaughan, PhD

On August 30, 2024, Dr. Matthew Vaughan (NEIWPCC/LCBP Chief Scientist and Project Officer) accompanied Kelsey Colbert (NEIWPCC/LCBP Long-term Monitoring Biologist) and Anna DeRoche during sampling for the Long-term water quality and biological monitoring project for Lake Champlain (LTMP).

Field activities conducted during this visit included water quality sample collection, digital water quality sonde measurements, cyanobacteria tows, chlorophyll tows, zebra mussel veliger tows, and Secchi disk depth readings. The team visited LTMP sites 7 and 9.

All field efforts observed were conducted in accordance with the approved quality assurance project plan (QAPP).

The LTMP boat was launched from Charlotte, VT.

View of Lake Champlain from LTMP site 9 (Otter Creek segment).

Kelsey Colbert takes water quality measurements with a multi-parameter sonde.

The LTMP First Mate conducts a phytoplankton tow.

September 12, 2024

QA Field Assessment Report

Project Title: Cyanobacteria Monitoring on Lake Champlain

QAPP ID: Q23-010

Assessor(s): Matthew Vaughan, PhD

On August 30, 2024, Dr. Matthew Vaughan (NEIWPCC/LCBP Chief Scientist and Project Officer) accompanied Kelsey Colbert (NEIWPCC/LCBP Long-term Monitoring Biologist) and Anna DeRoche (VTDEC Long-term Monitoring Program First Mate) during sampling for the Long-term water quality and biological monitoring project for Lake Champlain (LTMP). LTMP sites 9 (Otter Creek segment) and 7 (Port Henry segment) were visited.

Field activities conducted during this visit included visual inspection of water quality following visual assessment protocols established in Section B3 of the approved quality assurance project plan (QAPP).

All field efforts observed were conducted in accordance with the approved QAPP. Participants discussed the differences between visual protocols 1a, 1d, and 2 that describe water quality conditions (QAPP section B3). No corrective action is necessary, and the Long-term Monitoring Program Biologist will confirm that the data collected this season reflects our understanding during their routine QA process.

Visual inspection of water quality at Long-term Monitoring Program site 9 (Otter Creek segment).

Water showed category 1a conditions, per QAPP Section B3.

September 16, 2024

QA Field Assessment Report

Project Title: Evaluating functional uplift and microhabitat effects of stream restoration projects

QAPP ID: Q23-024

Assessor(s): Matthew Vaughan, PhD

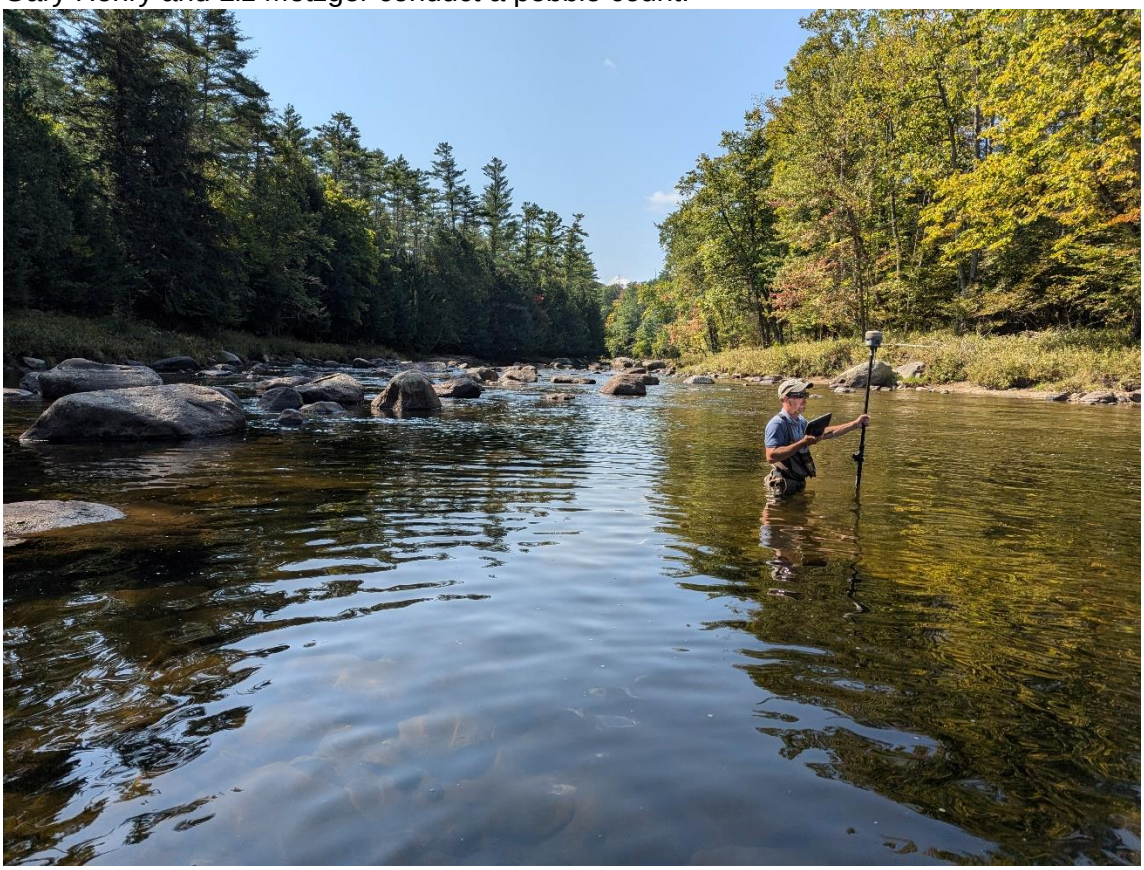
On September 13, 2024, Dr. Matthew Vaughan (NEIWPCC/LCBP Chief Scientist and Project Officer) accompanied Dr. Gary Henry and Liz Metzger (Ausable Freshwater Center; formerly Ausable River Association) during field activities for the *Evaluating functional uplift and microhabitat effects of stream restoration projects* study. This work was completed at Reference Reach A of the Ausable River, near Ausable Forks, NY (Approved QAPP Table 1).

Field activities conducted during this visit included a pebble count, cross-sectional elevation surveys, a longitudinal elevation survey, and longitudinal reach photographs. In addition, the upstream water temperature sensor for this reach was visited for a visual status check but no water temperature sensor maintenance or data collection was conducted.

All field efforts observed were conducted in accordance with the approved quality assurance project plan (QAPP).

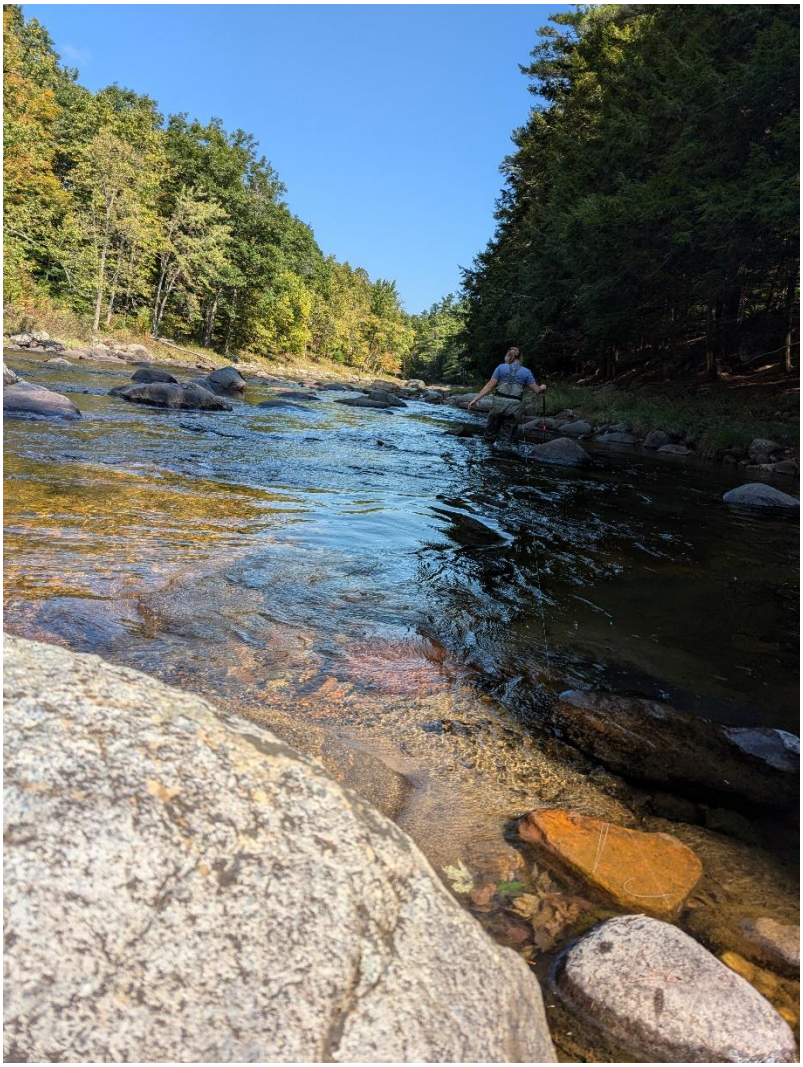
Downstream view of Reference Reach A.

Gary Henry and Liz Metzger conduct a pebble count.



Gary Henry conducts a longitudinal elevation survey.

Downstream view of Reference Reach A of the Ausable River.



Liz Metzger collects photographs along the study reach.

Upstream view of Reference Reach A of the Ausable River.

QA Field Assessment Data Sheet

Project Title: Flower Brook Floodplain Function and Flood Resilience Assessment

QAPP ID: Q23-005

Assessor(s): Mae Kate Campbell and Sonya Vogel

Assessment Date: September 13, 2024

Project Location: The project takes place across the Flower Brook watershed in Vermont. This assessment occurred in Pawlet, VT.

Project Staff: Hilary Solomon (Poultney-Mettawee Natural Resources Conservation District) and Joe Bartlett (Fitzgerald Environmental)

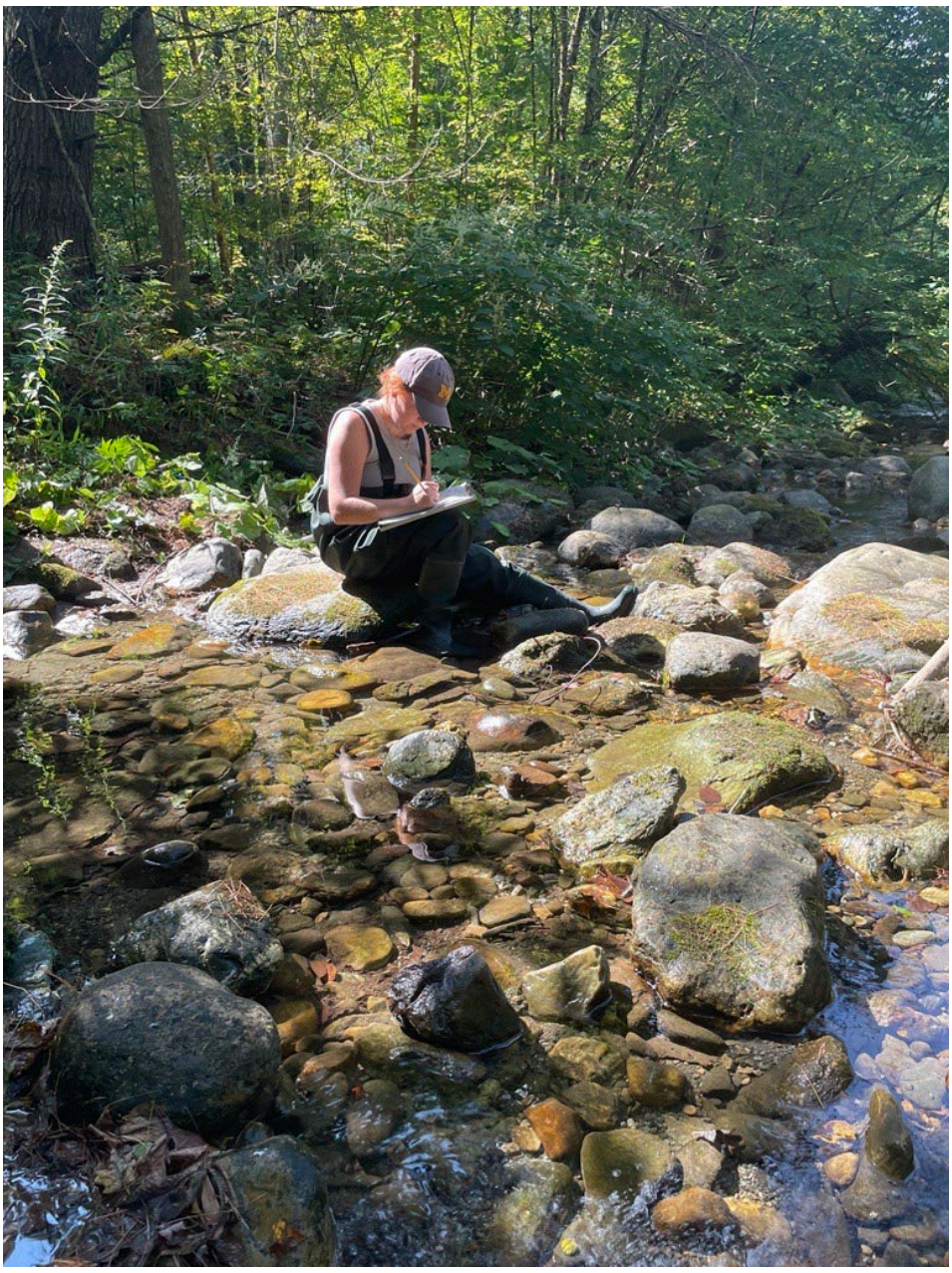
Brief Project Description: This project includes geomorphic assessment of the Flower Brook headwater tributaries with a focus on determining floodplain function and identifying and prioritizing restoration opportunities aimed at downstream flood and water quality protection in the South Lake Champlain watershed.

QA Assessment Summary: Sonya and I joined Hilary and Joe in conducting phase 2 geomorphic assessment activities along a stretch of Flower Brook. We donned waders and walked along the stream for several hours. Joe and Hilary collected GPS points using an online field form and photos demarcating notable features (including areas of erosion, places where farm animals could access the stream, large woody debris, bank failures, etc.). A pebble count and cross-section measurement were also conducted.

1: Hilary, Mae Kate, and Sonya in an area with large woody debris crossing the stream channel.

2: Joe and Hilary measure active channel width and bankfull width.

3: Hilary conducts a pebble count.



4: Sonya records data during the pebble count.

Is there an approved QA Project Plan for the overall project and has it been reviewed by all appropriate personnel?

The QAPP was reviewed by NEIWPCC and EPA and approved on 3/16/2023.

Is a copy of the current approved QA Project Plan maintained at the site? If not, briefly describe how and where quality assurance and quality control requirements and procedures are documented at the site.

A printed copy of the QAPP is contained in a field folder brought to all field sites.

Is the implementation of the project in accordance with the QA Project Plan?

Yes.

Are there deviations from the QA Project Plan? (If yes, explain)

No deviations from the QAPP were observed during the site visit.

Do any deviations from the QA Project Plan affect data quality?

N/A

Have any corrective actions been taken during the project?

No corrective actions have been taken during the project to date.

Did these corrective actions impact data quality (If yes, describe)

N/A