

ANNUAL SYSTEM STATUS REPORT AND QUALITY MANAGEMENT PLAN REVIEW FY-2023

NEIWPCC

December 2023

Submitted by:



12/22/23

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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-2023.

§106 QUALITY MANAGEMENT

NEIWPCC Job Cost Codes: 1081-006

First Quarter

- Completed QA orientation trainings for 7 new employees.
- Completed Phase 2 of the annual staff self-assessment.
- Met with NEIWPCC Quality Management Steering Committee (QMSC) to discuss designee program and provide update on QMS anticipated FY2022 activities on 12/6/2022.
- Participated in Northeast QA Round Table virtual meeting on 10/13/2022.
- Submitted annual system status report and QMP review for FY-21 to QMSC and EPA Regions 1 & 2 on 12/22/2022.

Second Quarter

- Completed QA orientation trainings for 6 new employees.
- Presented annual awareness training at NEIWPCC's All-Staff meeting on 3/30/2023.

Third Quarter

- Completed QA orientation trainings for 2 new employees.
- NEIWPCC staff completed one QA Field Assessment : Q23-008- Long-Term water quality monitoring and biological monitoring project for Lake Champlain. Full report included in Appendix C.
- Attended EPA Northeast QA Roundtable Virtual Meeting 5/11/2023.

Fourth Quarter

- Completed QA orientation trainings for 6 new employees.
- NEIWPCC staff completed four QA field assessments: Q22-009- Establishing Bankfull Discharge and Hydraulic Geometry Relationships, Ausable River Watershed; Q23-025- Biological Index Development: A Three-legged Assessment Stool for Lakes within the Lake Champlain Basin; Q20-025- AIS River Steward for the Ausable River/Northern Champlain Region; Q23-012- Nutrient Bioextraction: Refinement of Atlantic Ribbed Mussel (*Geukensia demissa*) Aquaculture. Full reports included in Appendix C.
- Attended EPA's virtual Quality conference 7/24-7/26, 2023.

QAPP REVIEW AND APPROVAL

In FY-2023, 37 quality assurance project plans (QAPPs) were approved. A list of the QAPPs reviewed and approved is contained in Appendix B. Twenty-nine of the projects originated from the Lake Champlain Basin Program (LCBP), five from the Long Island Sound Study, and three originated at the Hudson River Estuary Program (HREP). In addition, there are several QAPPs

that were submitted in FY-2023 that will be approved and finalized in FY-2024. Those QAPPs will be included in next year's report.

QA FIELD ASSESSMENTS

Six QA field assessments were performed on projects with NEIWPCC QAPPs in FY-2023.

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

- Q23-008- Long-Term water quality monitoring and biological monitoring project for Lake Champlain, 5/23/23
- Q22-009- Establishing Bankfull Discharge and Hydraulic Geometry Relationships, Ausable River Watershed, 9/29/23.
- Q23-025- Biological Index Development: A Three-legged Assessment Stool for Lakes within the Lake Champlain Basin, 9/8/23.
- Q20-025- AIS River Steward for the Ausable River/Northern Champlain Region, 7/31/23.
- Q23-012- Nutrient Bioextraction: Refinement of Atlantic Ribbed Mussel (*Geukensia demissa*) Aquaculture, 8/14/23.

Due to a minor deviation noted during the Q23-008 assessment, the QAPP will be updated. No deviations or nonconformances were observed during the assessments of the remaining projects.

QA PRESENTATIONS AND TRAINING

In FY-2023 there were several presentation and training opportunities offered in association with the quality management system. These included:

- Conducted 21 QA awareness trainings for new employees.
- Participated in Northeast QA Round Table meetings on 10/13/2022 and 5/11/2023
- Attended EPA's virtual Quality Conference 7/24- 7/26/23.
- Presented annual awareness training at NEIWPCC's All-Staff meeting on 3/31/2023.
- Initiated QAPM Designee Base Training for three NEIWPCC staff 5/24/2023 & 5/31/2023.

PHASE 2 QA SELF-ASSESSMENTS

Phase 2 QA self-assessment questionnaires were distributed to 17 staff on December 4, 2023; utilizing an online survey format for response collection. These staff were contacted to complete the self-assessment questionnaire because they indicated on their 2023 performance appraisal that they were involved with environmental data operations on behalf of NEIWPCC in FY-2023. 16 responses (94%) have been returned.

B. QUALITY SYSTEM REVIEW

AREAS OF SUCCESS

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

- Training and 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 are planned for FY-2023, including:

- Better turnaround time on QAPP reviews in line with NEIWPCC's internal goals.
- 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.

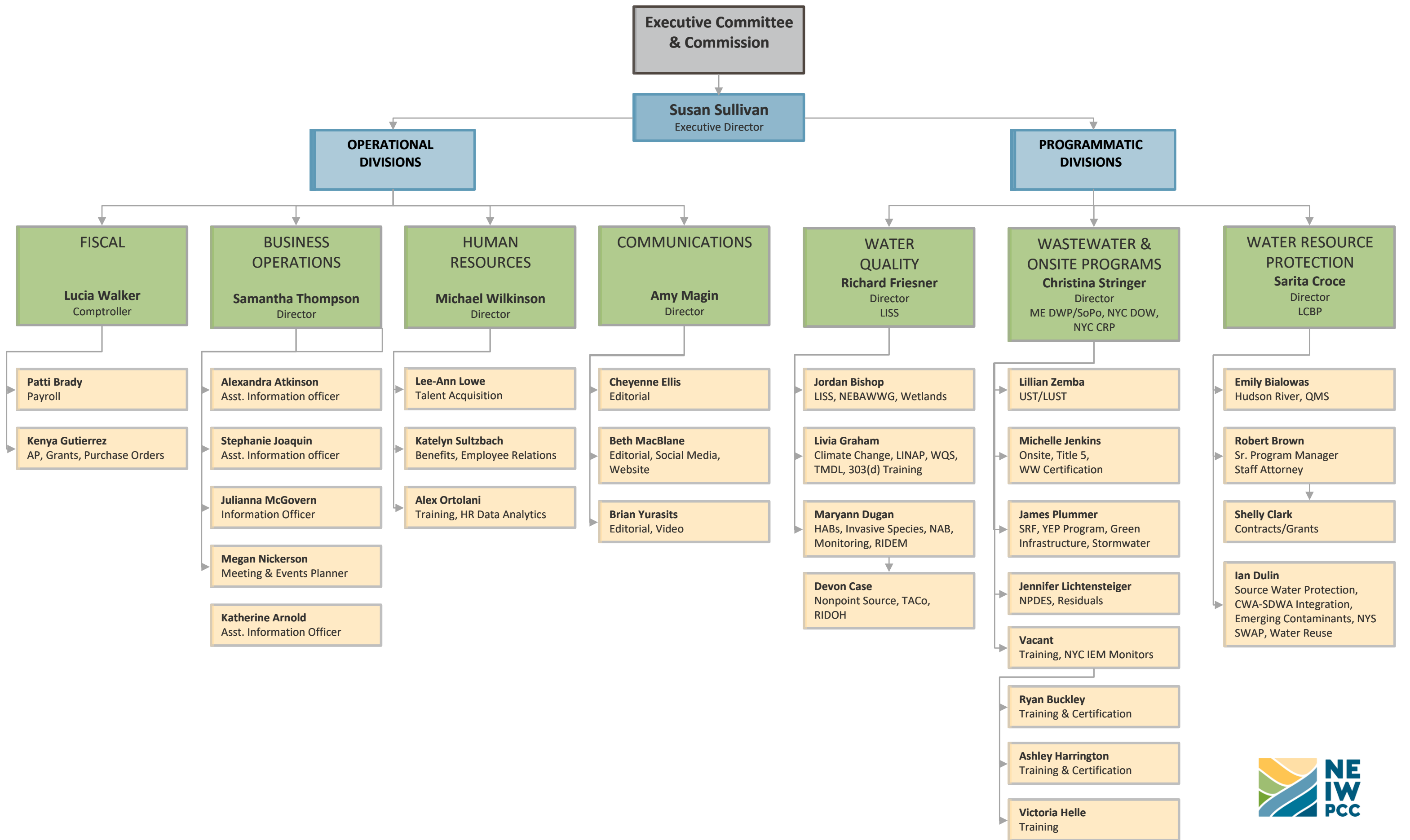
C. GOALS FOR NEXT YEAR

- Complete Quality Program Assessment with EPA region 1 staff.
- Conduct and coordinate a high rate of field assessments, engaging project managers and QAPM designees.
- Update QAPP guide for project managers and contractors based on the updated EPA standard (when available).
- 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 June 2023.

APPENDIX A: NEIWPCC ORGANIZATIONAL CHART



APPENDIX B: QAPP LIST FOR FY-23

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	Q21-028-A2	Follensby Clear Pond AIS Survey and Hand Harvesting Project	Emily Bialowas	EPA subaward	7/6/2023	7/7/2023	7/24/2023	TRUE
Meg Modley	Q22-006-A1	Distribution and Ecological Impacts of Round Goby in the Lake Champlain Region (Years 1-4)	Emily Bialowas	GLFC	4/6/2023	4/18/2023	4/20/2023	TRUE
Mae Kate Campbell	Q22-015	Expanding Vermont's Functioning Floodplain Initiative (FFI) to Advance the Science and Conservation of Healthy Stream, Riparian, Wetland, and Floodplain Ecosystems	Peter Zaykoski	LC 00A00707-0	5/11/2022	5/24/2022	10/3/2022	TRUE
Mae Kate Campbell	Q22-022	Integrating Cover Crop in Corn Silage Production Systems to Meet Agronomic and Conservation Goals	Peter Zaykoski	LC 00A00707-0	7/5/2022	7/25/2022	11/18/2022	TRUE
Matthew Vaughan	Q22-025	Multi-Year Habitat Monitoring at Johnsons Mill Dam Removal	Peter Zaykoski	LC00A00707	8/11/2022	8/22/2022	10/14/2022	TRUE
Lauren Jenness	Q22-026	Storm Smart 2.0 in the Winooski Conservation District	Peter Zaykoski	LC00A00707-0	8/15/2022	8/29/2022	10/14/2022	TRUE
Jordan Bishop	Q22-027	Refinement and Enhanced Analysis of the effects of Sea Level Rise on Connecticut Coastal Marshes	Peter Zaykoski	2022-239	8/22/2022	9/2/2022	1/19/2023	TRUE
Lauren Jenness	Q22-028	Lake and Watershed Action Plan for Fairfield Pond	Peter Zaykoski	LC 00A00707-0	8/24/2022	8/29/2022	10/31/2023	TRUE
Jordan Bishop	Q22-029	Improving water quality in the Long Island Sound with commercial Nitrogen Bioextraction using seaweed and shellfish	Peter Zaykoski	LI-00A00688	8/30/2022	9/15/2022	3/3/2023	TRUE
Lauren Jenness	Q22-030	Lake and Watershed Action Plan for Lake St. Catherine	Peter Zaykoski	LC 00A00707-0	9/20/2022	10/11/2022	4/27/2023	TRUE
Mae Kate Campbell	Q23-001	Stormwater Reduction in the Town of Proctor	Peter Zaykoski	LC 00A00707-0	10/7/2022	10/18/2022	12/19/2022	TRUE
Jordan Bishop	Q23-002	ASSESSMENT OF EXISTING COASTAL HABITAT CONNECTIVITY DATA AND MODELS FOR FEASIBILITY AND USE IN THE LONG ISLAND SOUND	Peter Zaykoski	LI-00A00688	10/7/2022	10/24/2022	4/13/2023	TRUE
Katie Darr	Q23-003	Free VT Rivers Story Map	Peter Zaykoski	LC 00A00981-0	12/8/2022	12/21/2022	2/6/2023	TRUE
Megan Lung	Q23-004	Ulster County Culvert Mapper: Improving Resilience and Connectivity through Decision-Making Resources for Municipalities.	Peter Zaykoski	C011814	1/3/2023	1/10/2023	1/31/2023	TRUE
Mae Kate Campbell	Q23-005	Flower Brook Geomorphic and Flood Resilience Assessment	Emily Bialowas	LC00A00707-0	1/6/2022	3/20/2023	4/24/2023	TRUE
Daniel Miller	Q23-006	Inventory of Shoreline Type in the Hudson River Estuary	Emily Bialowas	C011814	1/31/2023	6/5/2023	6/5/2023	TRUE
Lauren Jenness	Q23-007	Stream Wise Award Programs Generic Quality Assurance Project Plan	Emily Bialowas		2/1/2023	4/24/2023	5/4/2023	TRUE
Matthew Vaughan	Q23-008	Long-term water quality and biological monitoring project for Lake Champlain	Emily Bialowas		2/6/2023	3/6/2023	4/19/2023	TRUE
Lauren Jenness	Q23-009	Lake Champlain Mercury Community Science Program	Emily Bialowas	LC00A00981-0	2/17/2023	4/24/2023	5/3/2023	TRUE

Matthew Vaughan	Q23-010	Cyanobacteria Monitoring on Lake Champlain	Peter Zaykoski		2/22/2023	4/12/2023	6/6/2023	TRUE
Meg Modley Gilbertson	Q23-011	Lake Champlain Aquatic Nonindigenous Species Information System Creation	Emily Bialowas	LC00A00707	2/22/2023	5/9/2023	6/22/2023	TRUE
Jordan Bishop	Q23-012	Nutrient Bioextraction: Refinement of Atlantic Ribbed Mussel (Geukensia demissa) Aquaculture Methods	Emily Bialowas	LI-00A00688	2/23/2023	5/2/2023	6/5/2023	TRUE
Emily Bialowas	Q23-013	Road Stream Crossing Management Planning: Towns of Grafton, Brunswick, and Berl	Emily Bialowas	C011814	3/7/2023	4/10/2023	11/8/2023	TRUE
Matthew Vaughan	Q23-014	Mirror Lake Monitoring	Emily Bialowas	LC 00A00981-0	3/9/2023	4/21/2023	5/5/2023	TRUE
Richard Friesner	Q23-015	LISS and Peconic Estuary Eelgrass Mapping LONG ISLAND SOUND AND PECONIC ESTUARY EELGRASS MAPPING	Emily Bialowas	LI-00A00688	3/29/2023	5/15/2023	6/6/2023	TRUE
Mae Kate Campbell	Q23-016	Rock River Sub-Watershed Drainage Network Assessment Phase 1	Emily Bialowas	LC 00A00981-0	4/6/2023	5/1/2023	6/5/2023	TRUE
Matthew Vaughan	Q23-017	Operation and Maintenance of Lake Champlain Meteorological Stations	Emily Bialowas	LC00A00981	4/6/2023	4/27/2023	5/5/2023	TRUE
Meg Modley	Q23-018	Preventing aquatic invasive species spread through targeted removal	Peter Zaykoski	LC00A00981	5/1/2023	5/4/2023	5/24/2023	TRUE
Meg Modley Gilbertson	Q23-019	The Impact of Aquatic Invasive Species Harvesting on Eastern Musk Turtle (Sternotherus odoratus) Populations in the Lake Champlain Basin	Emily Bialowas	LC00A00981-0	5/2/2023	5/10/2023	11/8/2023	TRUE
Corrie Miller	Q23-020	Assessing the Management and Impact of Private Road Crossings in the Lake Champlain Basin	Emily Bialowas	BIL - LC00A01022 - 0	5/5/2023	6/2/2023	6/20/2023	TRUE
Meg Modley Gilbertson	Q23-021	Aquatic Invasive Patrollers Project	Emily Bialowas	LC-00A006950	5/9/2023	7/29/2023	8/3/2023	TRUE
Mae Kate Campbell	Q23-022	East Branch Restoration Plan – Project Area 7 Engineering Design Development, Town of Jay, Ausable River Watershed	Peter Zaykoski	LC 00A00981-0	5/17/2023	5/18/2023	6/15/2023	TRUE
Mae Kate Campbell	Q23-023	Soil Health Diagnosis of Quebec Portion of the Missisquoi Bay Basin Following a Remote Sensing Approach	Matthew Vaughan	GLFC	5/23/2023	5/23/2023	6/21/2023	TRUE
Matthew Vaughan	Q23-024	Evaluating Functional Uplift and Microhabitat Effects of Stream Restoration Projects	Emily Bialowas	LC00A00981	5/24/2023	6/21/2023	8/4/2023	TRUE
Mae Kate Campbell	Q23-025	Biological Index Development: A “Three-legged Assessment Stool” for Lakes within the Lake Champlain Basin	Emily Bialowas	LC-00A00981-0	5/31/2023	7/6/2023	8/22/2023	TRUE
Meg Modley Gilbertson	Q23-027	Aquatic Plant Survey of Lake Eden	Emily Bialowas	EPA subaward	7/6/2023	8/4/2023	8/8/2023	TRUE
Anna Palmer	Q23-032	Watershed Characterization Technical Assistance	Emily Bialowas	C011814	8/9/2023	8/18/2023	9/14/2023	TRUE
Meg Modley Gilbertson	Q23-033	Native riparian species conservation and monitoring in a Lake Champlain sub-basin	Peter Zaykoski		8/9/2023	8/24/2023	9/26/2023	TRUE

APPENDIX C: FIELD ASSESSMENT REPORTS



QA FIELD ASSESSMENT DATA SHEET

Project Title: AIS River Steward for the Ausable River/Northern Champlain Region

QAPP ID: Q20-025-A1 EPA award: #00A00605; RFA#20062

Assessor(s): Meg Modley Gilbertson

Assessment Date: July 31st, 2023

Project Location: West Branch Ausable River at Holcolmb and West Branch Ausable River at Whiteface

Project Staff: Carrienne Pershyn and Krista Kennedy, Ausable River Association

Brief Project Description: AsRA's river steward program protects the Ausable River, its tributaries, lakes, and the riverine corridor from aquatic invasive species to ensure healthy aquatic and riparian ecosystems. Over its twelve years, the primary outcome of the river steward program has been an increase in human awareness and action that is integral to spread prevention, early identification, and a reduction in invasive species infestations in the watershed. In 2023, with LCBP funds, the river steward continued to deliver critical aquatic invasive species (AIS) education and prevention on-river and at public events during the angling and river recreational season by distributing the spread prevention message in conversations, serving as an information resource to the public (especially river users), monitoring the Ausable River and watershed lakes for presence or absence of AIS, overseeing the distribution of educational materials, and maintaining wader wash stations across the watershed.

On July 31st, 2023 Meg Modley Gilbertson met Carrienne and Krista at the Lake Placid ski jump parking lot to drive to two river steward sites along the West Branch of the Ausable River. At 1:37 PM we arrived at the West Branch Ausable River Holcolmb Brook site. Luckily there was a truck on-site gearing up to get on the river when we arrived. Krista approached the group and the anglers (3 in party, but only 2 fishing) noted that they had never encountered a river steward before. Krista explained the intent of the aquatic invasive species spread prevention program and gathered information about their equipment. She showed them the wader wash station and encouraged them to wash their waders and fishing equipment. This NY crew was out for their first time this year and were not posing a threat of introducing aquatic invasive species. They were using felt soled waders with no spikes. Krista collected the angler survey data in survey 123. The tablet also had the approved QAPP on it. Krista has only encountered one other group angling at this site this field season. After interacting with the anglers and entering the data Krista checked the wader wash station which was clean and we went down to the river to observe the anglers fishing. Next we drove down the road to another spot on the West Branch of the Ausable River at Whiteface Ski Area. At 2:02 PM we arrived at the Whiteface location and we spoke about how Krista checks all the wader wash stations two times a week to ensure they are clean and fresh with the correct amount of salt for decontamination of fishing gear. The protocols for exchanging the wash water is to dump the water away from the site away from vegetation and then the bin is rinsed out. The station is refilled with 1.75 cups of canning and pickling salt per 2.5 gallons of water and then it is mixed up. Unfortunately, sometimes people leave trash in the bins. While we were reviewing the site a group of 3 came up off the water



who had never met a river steward before, but mentioned that they knew that “stewards keep the river safe”. Krista approached the group and introduced herself and delivered her environmental aquatic invasive species spread prevention message. The group noted that they mostly fish in the Ausable River but have also been in the Saranac River. The group was not wearing boots or waders and were using spinner wheels without live bait. Shortly after Krista collected data from that group, at 2:10PM another party of two came up the river trail who had never met a steward before. Krista repeated her message and collected the pertinent data in Survey 123. The party had not been fishing in 2 months and this was their first time out using a fly fishing rod and a spinner wheel. The group had been in the water with boots with rubber soles, no spikes, and they were asked to wash their equipment between trips to the river. The group mentioned they had seen the wader wash stations and that they would use them. Finally, at 2:15 PM a final party of 1 arrived in the Whiteface parking lot with one individual getting ready. He had also never had contact with a river steward. The angler was last on the Ausable River using a spinner with no bait. He had been angling on the river for 20 years and does not use boots or waders when fishing. Krista collected all the data and we parted ways.



ASRA interviews and collects data from an angling party on West Branch of the Ausable River at Holcolmb Brook



Photo – Krista checks the status of the wader wash station at West Branch Ausable River at





Photo- Krista collects river steward data using the Survey 123 application at West Branch Ausable River Holcolmb Brook site



Photo- Anglers on the West Branch Ausable River at Holcolmb Brook

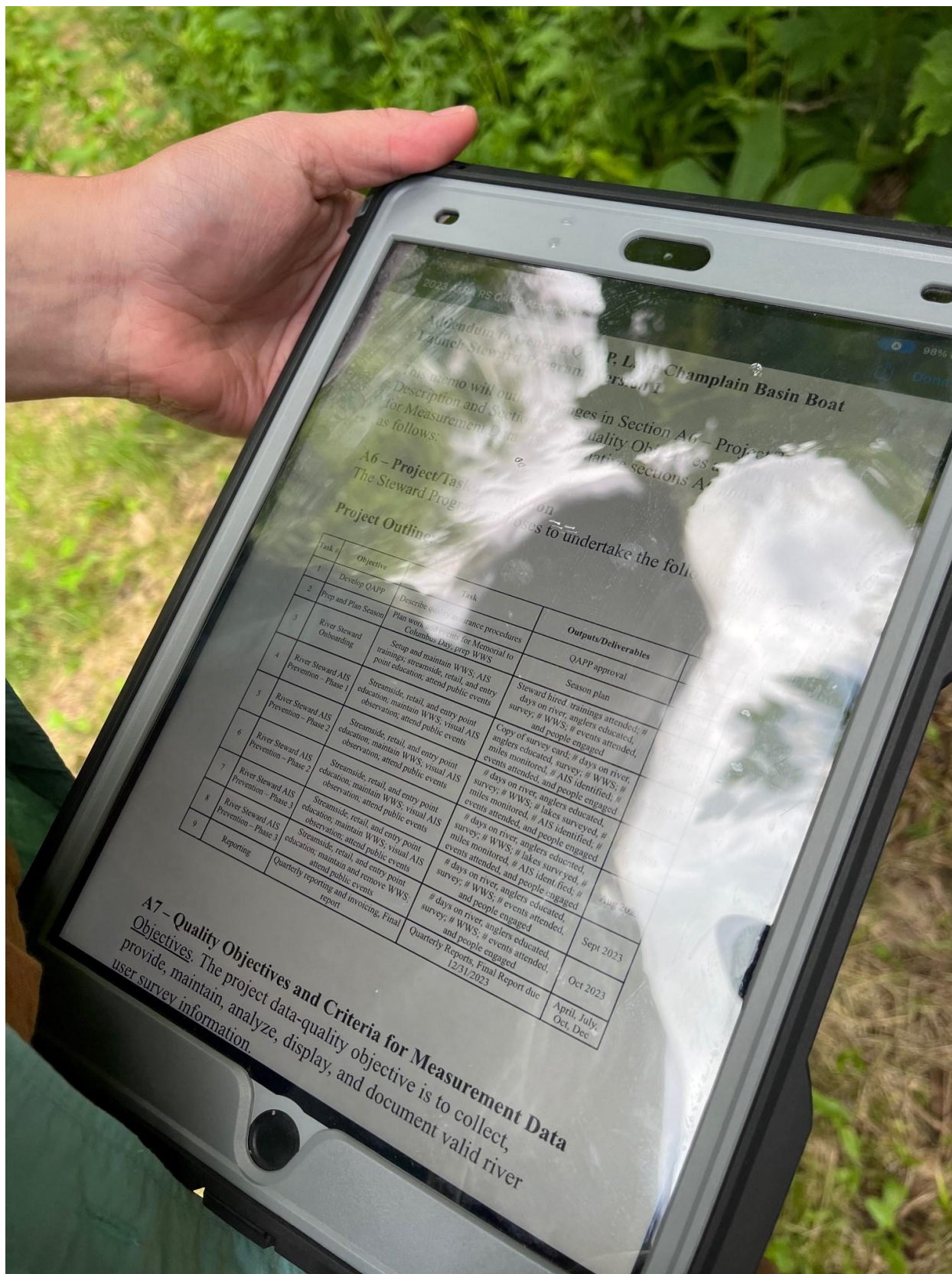


Photo- ASRA River Steward QAPP on tablet on site at West Branch Ausable River at Holcolmb

Brook site



Photo- Krisa approaches party of 3 coming off the river at West Branch Ausable River at Whiteface Ski Area parking lot to collect data.



Photo- Krista checks the wader wash station at West Branch Ausable River Whiteface Ski Area

parking lot





Photo- Krista collects river steward data from party #3 at the West Branch Ausable River Whiteface Ski Area parking lot.

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

Yes, Q20-025-A1 Ausable River Steward QAPP cover page was reviewed and approved by Meg Modley in June following EPA and NEIWPCC approval of the generic QAPP. ASRA staff had copies of the approved QAPP in the field with them.

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, ASRA staff had a copy of the approved QAPP on the river steward tablet in the field.

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

Yes the project is operating in accordance with the QA Project Plan.

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

No, there were no deviations from the QA Project Plan that I observed or heard about.

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 REPORT

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

QAPP ID: Q23-008

Assessor(s): Matthew Vaughan, PhD

On May 23, 2023, Dr. Matthew Vaughan (LCBP/NEIWPCC Chief Scientist and Project Officer), Sarita Croce (NEIWPCC Water Resource Protection Director), and Emily Bialowas (NEIWPCC Quality Assurance Program Manager) accompanied Kelsey Colbert (LCBP/NEIWPCC Long-term Monitoring Biologist) 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, zebra mussel veliger tows, and a Secchi disk reading. The team visited LTMP site 25 (Malletts Bay). This visit was also a learning opportunity for Emily Bialowas and Sarita Croce, who participated in sampling following QAPP-approved protocols after training from Matthew Vaughan and Kelsey Colbert.

All field efforts observed were conducted in accordance with the approved quality assurance project plan (QAPP) besides one minor deviation. The Vermont Agricultural and Environmental Laboratory (VAEL) has requested that filters collected for chlorophyll-a samples be wrapped in aluminum foil, rather than another filter as stated in the QAPP (Table 7). This minor change has been communicated to all LTMP field staff and is not expected to have any impact on data quality. This change will be included in the QAPP during the next revision.



Matthew Vaughan, Kelsey Colbert, and Emily Bialowas leave at inner-Malletts Bay.



Kelsey Colbert collects an integrated sample of water down to 2x the Secchi depth, and sends it through a filter for chlorophyll-a sample collection.



Matthew Vaughan and Emily Bialowas on the LTMP boat in Malletts Bay.



Kelsey Colbert conducts a zebra mussel veliger tow.



Matthew Vaughan, Kelsey Colbert, Emily Bialowas, and Sarita Croce at the Malletts Bay boat launch.



Kelsey Colbert, Sarita Croce, and Emily Bialowas at Malletts Bay.



Emily Bialowas, Sarita Croce, and Kelsey Colbert take a Secchi disk reading.



Emily Bialowas and Sarita Croce observe Kelsey Colbert taking digital water quality sonde measurements.



Emily Bialowas collects water quality samples with a Kemmerer sampler.



Sarita Croce collects water quality samples with a Kemmerer sampler.



QA FIELD ASSESSMENT DATA SHEET

Project Title: Establishing Bankfull Discharge and Hydraulic Geometry Relationships, Ausable River Watershed

QAPP ID: Q22-009

Assessor(s): Mae Kate Campbell

Assessment Date: September 29th, 2023

Project Location: Ausable River watershed near Au Sable Forks, NY

Project Staff: Gary Henry and Liz Metzger, Ausable River Association

Brief Project Description: The aim of this project is to collect hydraulic geometry data (precise location data and river-cross sections defining the shape of river channels, features, and floodplains) in order to develop a regional curve based on reference reach sites in the Ausable River watershed. This curve will be used in the design of stream restoration projects across the region.

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.

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 documented during the QA assessment.

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 REPORT

Project Title: Nutrient Bioextraction: Refinement of Atlantic Ribbed Mussel (*Geukensia demissa*) Aquaculture

QAPP ID: Q23-012

Assessor(s): Kristin Krasieski

On August 14, 2023, the NEIWPCC Quality Assurance Program Manager designee (Kristin Krasieski) accompanied Demetrios Caroussos, Aquaculture Coordinator for this project and Hatchery Technician for Cornell Cooperative Extension of Suffolk County, during field activities associated with the “Nutrient Bioextraction: Refinement of Atlantic Ribbed Mussel (*Geukensia demissa*) Aquaculture” project.

Field activities conducted on August 14, 2023, included monitoring of juvenile ribbed mussels at the FLUPSY (floating upweller system) in Huntington Harbor. At this point in the field season, all hatchery work had been completed, and the juvenile ribbed mussels were being monitored in the Harbor; however, I was also able to get a tour of the hatchery facilities at Flax Pond Marine Laboratory in Old Field, NY, where the hatchery work was completed.

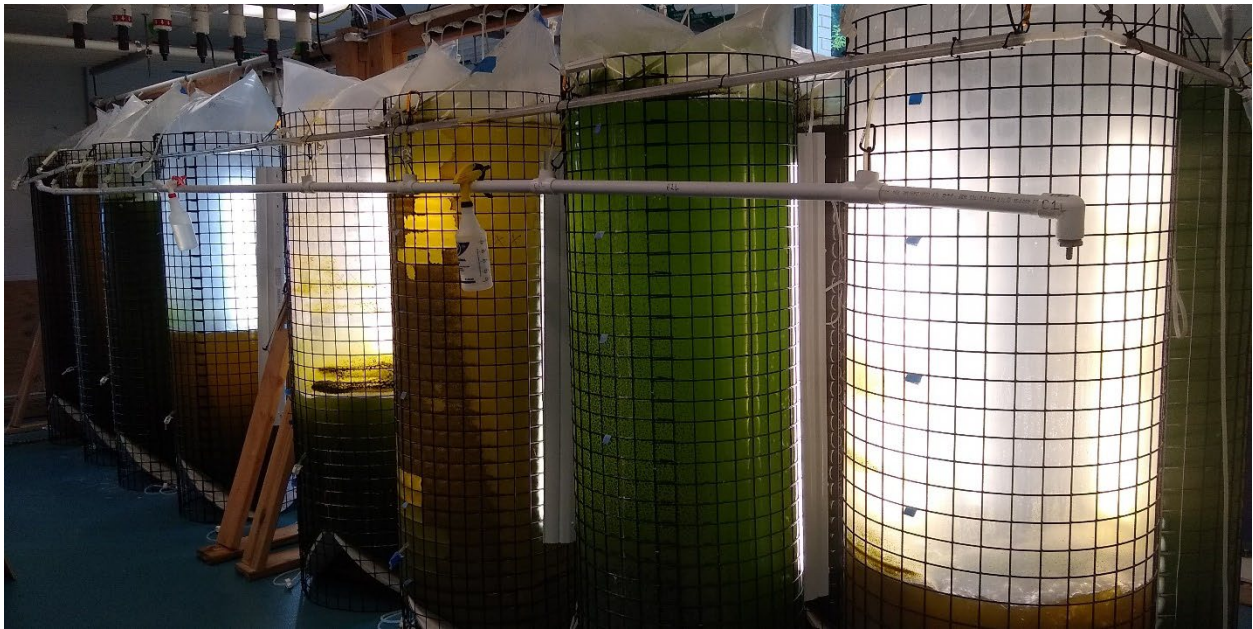
Demetrios Caroussos met me outside of the Flax Pond Marine Laboratory at 9:15 am on Monday, August 14th, 2023. Though hatchery work had been completed earlier in the season, Demetrios was able to give me a tour of the facilities and walk me through the process he used for the hatchery portion of the project, including the algae/feeding equipment and the sanitization process used, the pump room, the algae production room, and the other equipment (bin-silo apparatus, conicals, and thermal cycling tables) used.

After visiting the hatchery facilities, we traveled to Cornell Cooperative Extension facilities at Huntington Harbor, which included a set of floating docks secured behind a locked gate, accessible by a key code. These floating docks are used as part of a number of different projects, but the portion used for this project included a floating upweller system (FLUPSY) included a motor that pulls water up through a cages that contain mesh bags with juvenile mussels. The idea here is that moving the water constantly through the cage/bags will provide a continuous food supply for the mussels. The cages with the mussels are only accessible by staff, and are accessed through a hatch within the floating dock that is locked with a padlock. The cages are hung beneath the dock, and the door of each cage is held shut with a bungee cord. The bags within each cage are each attached to a weight to hold them at the bottom of the cage, and bags are cleaned of films every other day, and the mussels are observed for mortality (mussels with open shells are dead, and these are counted). Cornell Cooperative Extension staff person, Amanda Hanifin, showed me the juvenile mussels, as Demetrios had injured his hand a few days previously.

All field efforts observed were conducted in accordance with the approved quality assurance project plan (QAPP). No deviations from (or discrepancies with) the approved QAPP approved were observed or noted.

There was one minor note pointed out by Demetrios from the hatchery portion of the project. There was a calibration table included in the QAPP that had parameters that were not being measured during this study. The QAPP development was based off of a previous ribbed mussel study, and this portion of the table was included erroneously in this project's QAPP (the parameters in the calibration table were not relevant to this work, and therefore were not calibrated). This was an issue with the writing of the QAPP, not the implementation of the QAPP, and therefore is not a concern for this project.

Photos:



Algae supply for feeding mussels during hatchery portion of study, at Flax Pond Marine Laboratory



Bin-Silo equipment used for spawning mussels in the hatchery at Flax Pond Marine Laboratory being demonstrated by Demetrios Caroussos; the dark grey container has a mesh bottom and holds spawning mussels and sits inside of the white container, mussel larvae sink to the bottom of the white container after their release



View of field location, from the parking lot; the dock is visible at the center of the photo



View of Huntington Harbor from the floating docks



Cornell Cooperative Extension staff, Amanda Hanifin, opening a mussel cage at the Huntington Harbor field site



Mesh bags containing juvenile ribbed mussels at the Huntington Harbor field site



Interior of mesh bag containing juvenile ribbed mussels, with Amanda Hanifin of Cornell Cooperative Extension



Juvenile mussels at the Huntington Harbor FLUPSY, held by Cornell Cooperative Extension staff person, Amanda Hanifin



QA FIELD ASSESSMENT DATA SHEET

Project Title: Nutrient Bioextraction: Refinement of Atlantic Ribbed Mussel (*Geukensia demissa*) Aquaculture

QAPP ID: Q23-012

Assessor(s): Kristin Krasinski

Assessment Date: 8/14/23

Project Location: Flax Pond Marine Laboratory, Huntington Harbor

Project Staff: Demetrios Carousos

Brief Project Description: A comparison of hatchery-based shellfish spawning practices for the non-commercial species, ribbed mussel (*Geukensia demissa*) to determine the most effective one; will help with future commercialization of the species for bioextraction

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, electronically

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)

Yes, there were water quality measurement device calibrations listed in the QAPP that were not relevant to the work (calibrations for parameters that were not measured for the study) -- these were likely a hold-over from a previous QAPP that was not caught during QAPP review.

No

Have any corrective actions been taken during the project?

No

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

No



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: September 8, 2023

Project Location: The project is collecting data at a number of inland lakes in New York and Vermont. This QA assessment took place at Caspian Lake in Greensboro, VT.

Project Staff: Ben Block and Ismar Biberovic, Tetra Tech

Brief Project Description: This project is drawing on existing biological data, and undertaking additional sampling, to create three indices of biological integrity (for diatoms, macroinvertebrates, and macrophytes) that could be used to qualify the condition of inland lakes within the Lake Champlain Basin.

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

This project has a quality assurance project plan and a sampling and analysis plan, which were 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 QAPP, SAP, and field forms are maintained on project tablets used by all field staff.

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

During my assessment, I observed that implementation of the project was proceeding in accordance with the approved QAPP.

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

I did not observe deviations from the 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?

No corrective actions have been taken to date.



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

N/A