Adopt-a-Pond Water Quality

Monitoring Program

Subawardee/Subrecipient #98699/1185408/4

Citizen Science Learning Center
(CSLC)

In Partnership with

Peconic Estuary Partnership (PEP)

and

US Environmental Protection

Agency Effective Date of Plan:

March 10, 2026

Project Director:
Citizen Science Learning Center

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Project Manger:
Citizen Science Learning Center

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Citizen Science Learning Center

Chris DeVivo

PEP Project Coordinator

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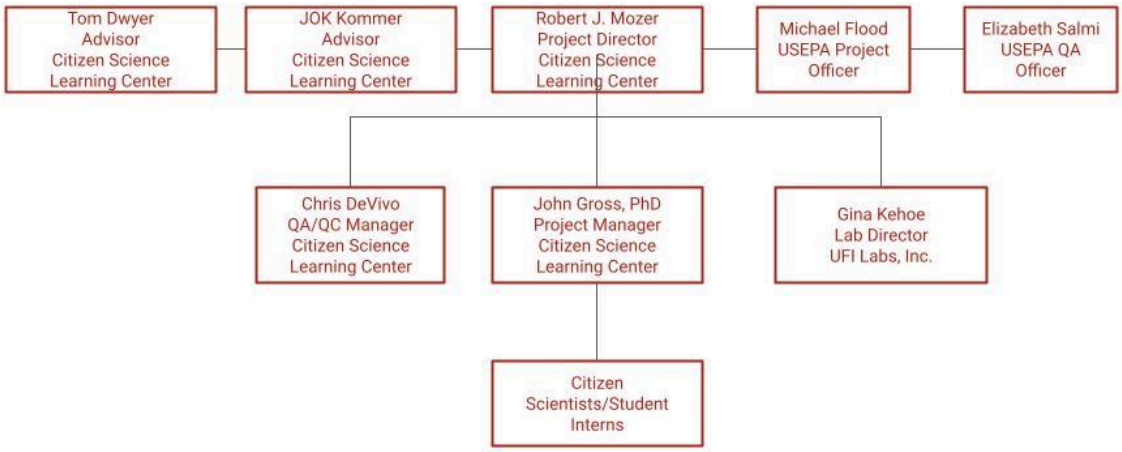

Figure 1: Organization Chart

Project Distribution List

The distribution list ensures everyone involved with the project receives a copy of the Quality Assurance Project Plan (QAPP) and is aware/clear about the work being conducted. It also provides the contact information for those involved with the project. For this table, input the names and contact information for all individuals who will need to get a copy of the QAPP.

Table 1: Project Distribution List

Name/Title	Contact Information
Robert Mozer, CPG Project Director	Email: citizenscienceleraningcenter@gmail.com Phone: 802.716.1960
Dr. John Gross Project Manager	Email: citizenscienceleraningcenter@gmail.com Phone: 802.716.1960
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Project/Task Organization

Table 2: Responsibilities list

Name	Title	Organizational Affiliation	Responsibilities
Robert Mozer	Project Director	CSLC, Inc	Oversees quality assurance manager, data collection, team organization and training, etc.
Dr. John Gross	Project Manager	CSLC, Inc	Field sampling and data analysis
Chris DeVivo	Project Quality Assurance Manager	CSLC, Inc	Quality assurance, oversight and assessments, data verification, evaluation and usability, ensuring corrective actions are completed, etc.
JOK Kommer	Biologic Project Advisor	CSLC, Inc	Technical support for biologic aspects of freshwater pond water quality and HABs potential
Tom Dwyer	Hydrogeologic Project Advisor	CSLC, Inc	Technical support for hydrogeologic aspects of freshwater pond water quality and groundwater flow
Staff (2 people)	Field Personnel	Citizen Science Learning Center, Inc	Field sampling and data analysis
Gina Kehoe	Laboratory Director	UFI, Labs Syracuse, NY	Sample analysis and data validation

Problem Definition

Increases in frequency and severity of Harmful Algal Booms (HABs) are suspected to be a side-effect of the changes in our climate that have been occurring over the past several decades. Given the right amount of sunlight, temperature, and nutrients (nitrogen, phosphorus, and potassium), Cyanobacteria populations may increase exponentially and result in a HAB.

Although these organisms have been on this planet for over 3.5 billion years, and were responsible for the oxygen in our atmosphere, some of these cyanobacteria can, unfortunately, produce toxins that can be deadly to humans, pets, and local wildlife. The New York State Department of Environmental Conservation (NYSDEC) is advising the public to be aware of these organisms and to avoid a HAB when it occurs. The NYSDEC has a HABs reporting program for its residents and maintains a website (NYHABS Public 2.0) that illustrates where and when a HAB has occurred in the State.

Potentially, the consequences of **not** addressing the HAB issue, are as follows:

- More frequent occurrences of HAB events in ponds and lakes of all sizes,
- Increased likelihood of exposing humans and their pets to HABs,
- Negative economic impact on localities where tourism is closely correlated to the natural beauty of nearby ponds and lakes,
- Negative impact on the market values of afflicted properties,
- Negative impact on local marine environments due to degradation of ponds and lakes which feed the headwaters of local marine estuaries,
- Long-term negative effects on the quality of freshwater and marine fisheries.

To minimize the likelihood of these consequences occurring, it is necessary to have an effective monitoring and notification system in place, much like the existing system for monitoring our bathing beaches for bacteria. This monitoring/notification system will provide the data that government officials should use to make timely decisions about restricting access to an affected lake or pond. Unfortunately, there is currently no County-wide or Town-wide program that regularly monitors for HABs. In addition, the NYSDEC has recently revised their HABs monitoring program to now rely on citizen scientists to make visual assessments for HABs, rather than basing their actions on certified laboratory analysis of water samples.

Currently, the lakes and ponds being sampled by the Citizen Science Learning Center include: West Pond (Eastport); East Pond (Eastport); Mill Pond (Speonk); Beaverdam Pond (Westhampton); Old Ice Pond (Quogue) and Wildwood Lake (Northampton). In the Fall of 2023 we added Silverbrook Pond in Flanders to our sampling program. (See Figure 1).

Figure 1

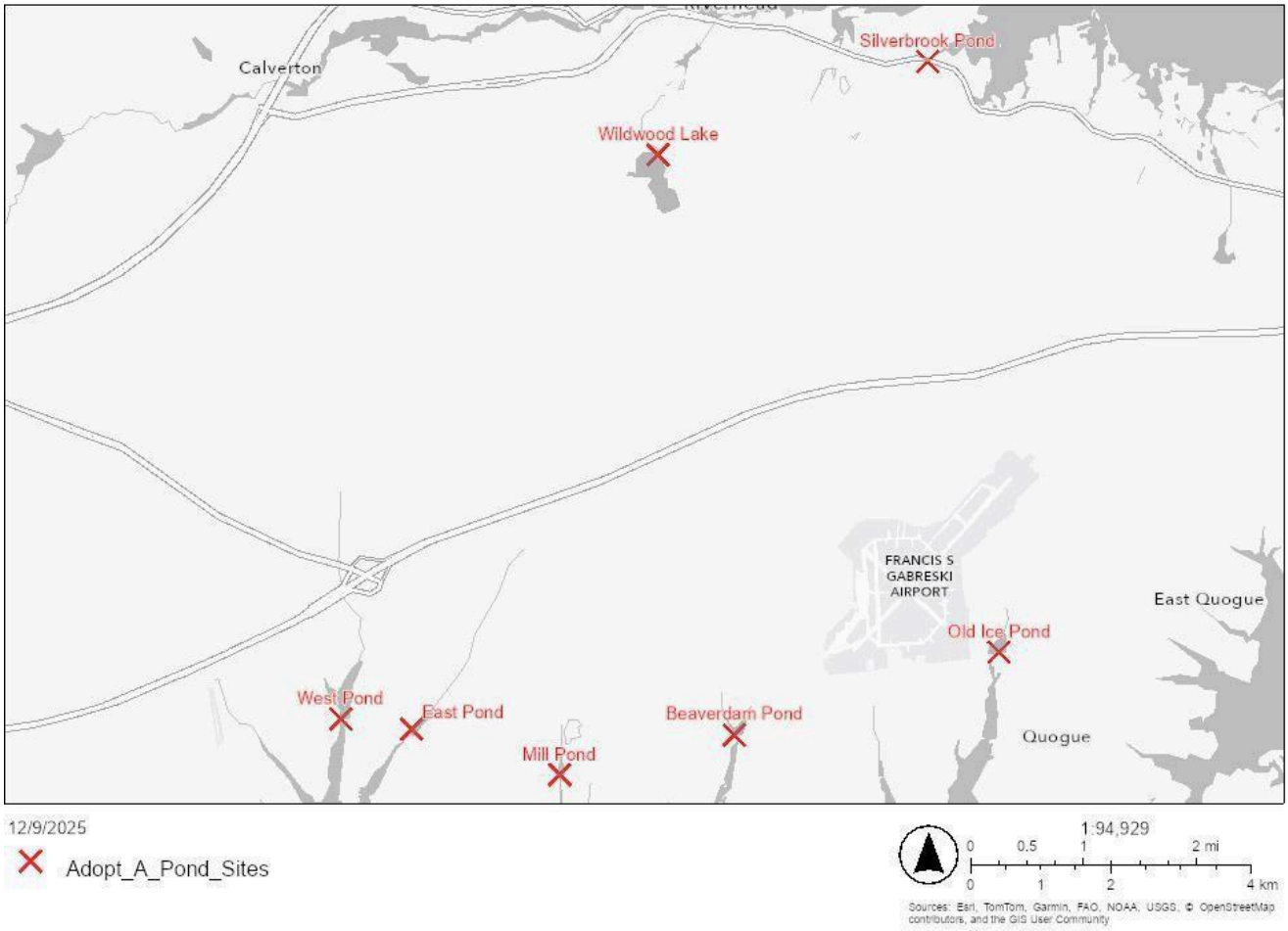

Figure 2: Historic Pond Sample Locations

CSLC has had the support of Dr. Chris Gobler and his Stony Brook University Southampton SOMAS lab for the HABs analysis; the Upstate Freshwater Institute Labs (UFI), Syracuse, NY for water nutrient analysis; and, Farmingdale State College for providing summer interns to help with the water sampling, GIS data compilation, analysis, and mapping. Fortunately, we have not detected a HAB in any of our seven ponds, but we wish to be proactive on this issue, as other organizations have in NY State. At a minimum, we need to establish a HABs monitoring program for all of the lakes and ponds in the Peconic Estuary watershed.

We are encouraging others in the Town (adults and students) to join us by becoming stewards (“Pond Keepers”) of our freshwater ponds. If we do not take care of these valuable natural resources, they will be lost to future generations. It is well known there are already several ponds in the Town of Southampton which are no longer accessible for recreational use because of HABs (e.g. Lake Agawam, Mill Pond in Watermill, and Sagg Pond). With our program, our objective is to prevent the same from happening to other lakes and ponds in our Town.

By monitoring for HABs, and concurrently having the relevant water quality data (nutrient

concentrations) from each of the ponds, we hope to build a strong case supporting the replacement of aging septic tanks and cesspools with new “Innovative Alternative” (I/A) septic systems that will remove the nutrient loading to the ponds currently occurring via groundwater flow.

For the last four years, CSLC personnel have volunteered their time and expenses to characterize the water quality of six freshwater ponds on the western side of the Town of Southampton by regularly monitoring for levels of cyanobacteria in them. In addition, samples were analyzed for the nutrients (nitrogen and phosphorus) that are presumed to cause “blooms” to occur.

However, certain genera of these organisms can produce very powerful toxins. When these organisms reach a certain concentration threshold, they are considered to have “bloomed”, and because some of these organisms can produce powerful toxins, a “bloom” is called a “Harmful Algal Bloom”, or HAB. Over the last several decades, the occurrence of HABs have been on the increase as reported in scientific literature.

The ponds being monitored under this scope of work include Wildwood Lake in North Hampton and Silverbrook Pond in Flanders which are both located in the Peconic Estuary.

Project Objectives

The project objective is to provide valid scientific data through the collection and analysis of water samples and/or visual observations. Using the NYSDEC's "Suspicious HABs" mobile app, observations will be made and submitted to the NYSDEC to determine if a HAB is occurring. Water samples will be collected at the same time for measurements of field parameters including: temperature, pH, Specific Conductance (SC), Total Dissolved Solids (TDS), Dissolved Oxygen (DO), and Oxidation Reduction Potential (ORP). Additionally, one sample from each location will be collected for laboratory analysis of Total Phosphorus (TP), Total Nitrogen (TN) and Nitrogen Oxides (NOx*).* These observations, field parameter data, and laboratory analysis will be used to determine if a HAB is occurring, and possibly to predict if a HAB is likely to occur.which if found will be documented in the final report

Data Users

Data collected from this project would be very useful to the Peconic Estuary Partnership (PEP) as well as other Civic Associations and governmental agencies, including the Town of Southampton and the Suffolk County Department of Health Services (SCDoHS). Quick access to the data would streamline the process of providing public notifications about any safety issues associated with a HAB event.

The NYSDEC no longer uses laboratory analysis for the determination of a HAB. They now rely on visual observations that are documented using a digital survey (Suspicious HABs Survey) loaded on a mobile device. The data includes the date and time, location, personal information for the observer, and several pictures of the suspected HAB). Once the NYSDEC receives the observation, they decide if a HAB has occurred. This information is then posted on its website, and a notification is also sent to the SCDoHS for dissemination to the public.

Having accurate chemical analysis data available to pair up with the online NYSDEC confirmations of HAB occurrences, could help to establish correlations between chemical & physical parameters of a lake or pond, when compared to whatever atmospheric conditions were present leading up to the HAB. The data may prove to have relevance to the potential for a HAB to occur, but would not be used singularly as a regulatory action level.

The results of the samples collected for TP, TN, and NOx may be used to characterize any seasonal variability of these compounds. While there are no action levels for these analytes, the NYSDEC uses a Guidance Value of 20 ug/L of TP for recreational lakes and ponds.

With this data, stewards of these freshwater resources can be informed about the potential for HABs to occur in the future at Wildwood Lake and Silverbrook Pond.

Background and History

Background

Increased frequency of HABs are another side effect of our changing climate that has been occurring over the past several decades. Although these organisms have been on this planet for over 3.5 billion years and were responsible for the oxygen in our atmosphere, unfortunately, some of these cyanobacteria can produce toxins that can be deadly to humans, pets, and wildlife.

If we want to avoid some or all of these consequences, it is necessary to have a monitoring and notification system in place, much like the existing system of monitoring our bathing beaches for bacteria, so that government officials can make appropriate decisions regarding access to an affected lake or pond. Unfortunately, there is currently no County-wide or Town-wide program that regularly monitors for HABs. In addition, the NYSDEC has recently revised their HABs monitoring program that prefers to rely on citizen scientists to make visual observations for HABs, and not from certified laboratory analysis.

Historically, the lakes/ponds being sampled by CSLC include: West Pond, Eastport; East Pond, Eastport; Mill Pond, Speonk; Beaverdam Pond, Westhampton; Old Ice Pond, Quogue, and Wildwood Lake, Northampton. We recently included Silverbrook Pond in Flanders as of the Fall of 2023. However, only Wildwood Lake and Silverbrook Pond are within the Peconic Estuary watershed, and accordingly, our proposal only includes those two freshwater bodies.

Wildwood Lake is approximately 64 acres and is a vital resource to the residents of the Town of Southampton. It attracts many residents that swim, fish, and boat on this water body. There is a NYSDEC boat ramp for small boats, and a beach area that is maintained by the Town. While swimming is not allowed, the beach area is heavily used by the residents. Wildwood Lake is also the headwaters of one of the tributaries of the Peconic River and it has become a potential spawning ground for River Herring since a fish ladder was installed on the Little River that drains the Lake. There is also a ladder at that same location for the American Eel that migrate upstream into freshwater bodies where they live most of their adult life before returning to the ocean to spawn.

Silverbrook Pond is approximately 1.25 acres, and has had a history of HAB events, likely due to the high density of multi-family homes, all of which are on old cesspools and septic tanks that contribute nitrogen compounds to the pond via groundwater discharge. These nitrogen compounds are thought to be the nutrients that cause HABs to occur. Silverbrook Pond is also located in an underserved community, and would be an ideal location for an educational program for both school aged children and adults.

In the past CSLC has had the support of Dr. Chris Gobler and his Stony Brook University Southampton SOMAS lab for the Harmful Algae Blooms (HAB)s analysis by fluoroscopy; the Upstate Freshwater Institute Labs (UFI), Syracuse, NY for water nutrient analysis; and, Farmingdale State College for providing summer interns to help with the water sampling, GIS data compilation, analysis, and mapping. Fortunately, we have not detected a HAB in any of our seven ponds, but if we want to be proactive on this issue, as other organizations have in the State, at a minimum we need to establish a HABs monitoring program for all of the lakes and ponds in the Peconic Estuary watershed.

We are encouraging others in the Town (adults and students) to join us by becoming stewards ("Pond Keepers") of our freshwater ponds. If we do not take care of these valuable natural resources, they will be lost to future generations. As you know, there are already several ponds in the Town of Southampton that are no longer accessible for recreational use because of HABs, e.g. Lake Agawam, Mill Pond in Watermill, Sagg Pond, etc. With our program, our mission is to help prevent the same from happening to other lakes and ponds in our Town. By monitoring for HABs and collecting the necessary water quality data (nutrient concentrations) from each of the ponds, we may be able to mitigate the changes in the water chemistry that could lead to a HAB, e.g., replacement of septic tanks and cesspools with new "Innovative Alternative" (I/A) systems that will remove the nutrient loading to the ponds via groundwater flow.

History

For the last four years, CSLC personnel have volunteered their time and expenses to characterize the water quality of seven freshwater ponds on the western side of the Town of Southampton by regularly monitoring for levels of cyanobacteria in them. In addition, samples were analyzed for the nutrients (nitrogen and phosphorus) that are presumed to cause "blooms" to occur.

These ponds include Wildwood Lake in Northampton and Silverbrook Pond in Flanders, which are within the Peconic Bay Estuary (see Figure 2). The other five ponds are located in the South Shore Estuary Reserve.

Figure 2

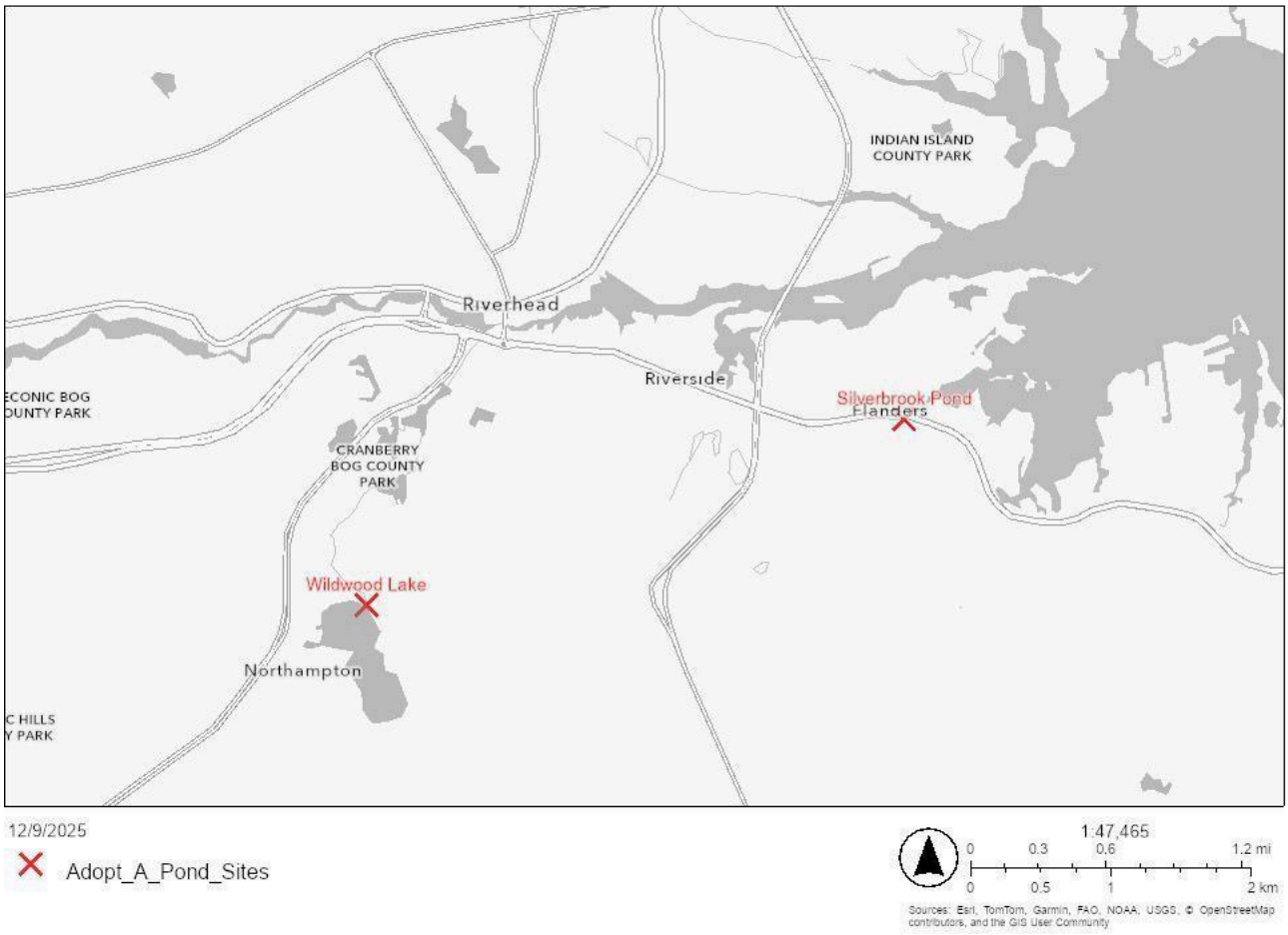

Figure 3: Project Sample Locations

Project Location

The project includes two freshwater ponds located in the Town of Southampton and are within the Peconic Estuary of Long Island. The ponds are known locally as Wildwood Lake located in Northampton, and Silverbrook Pond, located in Flanders. These ponds were chosen because they have been sampled previously by CSLC for the presence of cyanobacteria and the dissolved nutrients that may be a contributing factor to HABs.

QAPP Structure

Table 3: Project Timeline

Activities	Organization/Group responsible for activity completion	Timeframe work will be done
Preparation of QAPP	Robert J. Mozer, CPG Project Director	Submit QAPP July 2025
Review of QAPP	Chris DeVivo Project Quality Assurance Manager	June - July 2025
Grant Oversight	Peconic Estuary Partnership Grant Coordinator	June 2025-January 2026
Approval of QAPP	EPA Quality Assurance Officer	TBD
Collection of Existing Data	CSLC, Inc.	January 2025
Sample Collection	CSLC, Inc.	January 2025-December 2025
Sample Analysis	UFI, Inc. Syracuse, NY	February 2025-December 2025
Data Evaluation	Robert Mozer, John Gross, and Chris DeVivo, JOK Kommer, Tom Dwyer, CSLC, Inc.	February 2025-December 2025
Preparation of Final Report	Robert Mozer, John Gross, and Chris DeVivo, JOK Kommer, Tom Dwyer, CSLC, Inc.	January 2026

Existing Data

Table 4: Existing data

Existing Data	Data Source	How Data Will Be Used	Acceptance Criteria
Water temperature data	CSLC, Inc	To determine seasonal variation in the water temperatures of Wildwood Lake and Silverbrook Pond for four years.	1. Temperature data has been collected from a properly functional thermometer 2. Temperature data has been collected from established sampling points on Wildwood Lake and Silverbrook Pond 3. Sensitivity of the temperature data from the thermometer is at least 0.1 °C
Water pH data	CSLC, Inc	To determine seasonal variation in the water pH of Wildwood Lake and Silverbrook Pond for four years.	1. pH data has been collected from a properly calibrated and functional pH meter 2. pH data has been collected from established sampling points on Wildwood Lake and Silverbrook Pond 3. Sensitivity of the data from the pH meter is ±0.1 pH units
Water Specific Conductance (SC) and Total Dissolved Solids (TDS)	CSLC, Inc	To determine seasonal variation in the water SC and TDS of Wildwood Lake and Silverbrook Pond for four years.	1. SC and TDS data has been collected from a properly functional SC and TDS meter 2. SC and TDS data has been collected from established sampling points on Wildwood Lake and Silverbrook Pond 3. Sensitivity of the data from the SC and TDS meter is 0 to 9990 µmos/cm and 0 to 9990 ppm, respectively.

Water Dissolved Oxygen (DO)	CSLC, Inc	To determine seasonal variation in the water DO of Wildwood Lake and Silverbrook Pond for four years.	1. DO data has been collected from a properly functional DO meter 2. DO data has been collected from established sampling points on Wildwood Lake and Silverbrook Pond 3. Sensitivity of the data from the DO meter is 0 to 40 mg/L

Quality Objectives

Precision:
Laboratory:
UFI Labs, Inc is a NYSDEC ELAP Certified lab and they have developed their own internal QA/QC protocols for analyzing the samples for TP, TN, and NOx.

Field:
Field parameters of temperature, SC, TDS, DO, and ORP will be collected at the time HABs observations are made and also when samples are collected for nutrient analysis. Each time the measurements are made the same instruments are used between data sets.. The data for each lake/pond will be compared to the previous three weeks data set as a means to ensure repeatable data.

Bias:
All of our samples are collected at publicly accessible spillways of each lake/pond where all of the surface water drains to a stream or canal. Our logic is that the samples will represent a composite of the water quality of the entire waterbody, and will be useful in accessing the water quality at this level. To limit bias, when possible data will be gathered at approximately the same time of day if this cannot be achieved the data will be flagged as such.

Laboratory:
UFI Labs, Inc is a NYSDEC ELAP Certified lab and they have developed their own internal QA/QC protocols for analyzing the samples for TP, TN, and NOx.

Representativeness:
Field - We are sampling each lake/pond at publicly accessible spillways where all of the surface water drains to a stream or canal. Our logic is that the samples will represent a composite of the water quality of the entire waterbody, and will be useful in accessing the water quality at this level.

Comparability:
Field: (Please not the same meters are used for each pond)
We are using a VIVOSUN 4-in-one meter has a 0 to 14.0 pH measurement range and with a sensitivity of ±0.1 pH units; a temperature range of 0°C to 60°C; a SC range of 0 to 9990 umos/cm; and a TDS range of 0 to 9990 ppm. This is the same meter we used to collect the data in previous years.

The YIERYI Dissolved Oxygen meter has a range of 0.0 to 40.0 mg/L. This is the same meter we used to collect the data in previous years.

The Milwaukee MW500 ORP meter has a range of ± 1000 mV and an accuracy of ± 5 mV. We did not have this meter until this year, so we cannot use the 2025 data to compare it to previous years' data sets.

Total Phosphorus Method SM 4500-P F-H, 2011 has a Limit of Detection (LOD) of 2.5 µgP/L and a Limit of Quantitation (LOQ) of 7.5 µgP/L.

Total Nitrogen Method SM 4500-N C, 2011 has a LOD of 44 µgN/L and a LOQ of 144 µgN/L.

Nitrous Oxide (NOx) Method SM 4500NO3 F, 2016al has a LOD) of 10 µgN/L and a LOQ of 30 µgN/L

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Completeness:

Field:

During 2025, we will collect 22 water samples for field parameters and 10 water samples for nutrient concentrations at each pond sample location. These number of samples should be sufficient to establish the seasonal variations during the year and also the variations during the summer months when HABs are likely to occur.

Sensitivity:

Field:

The VIVOSUN 4-in-one meter has a 0 to 14.0 pH measurement range and with a sensitivity of ±0.1 pH units; a temperature range of 0°C to 60°C; a SC range of 0 to 9990 umos/cm; and a TDS range of 0 to 9990 ppm.

The YIERYI Dissolved Oxygen meter has a range of 0.0 to 40.0 mg/L. The Milwaukee MW500 ORP meter has a range of ± 1000 mV and an accuracy of ± 5 mV.

Laboratory:

Total Phosphorus Method SM 4500-P F-H, 2011 has a Limit of Detection (LOD) of 2.5 µgP/L and a Limit of Quantitation (LOQ) of 7.5 µgP/L

Total Nitrogen Method SM 4500-N C, 2011 has a LOD of 44 µgN/L and a LOQ of 144 µgN/L.

Nitrous Oxide (NOx) Method SM 4500NO3 F, 2016al has a LOD) of 10 µgN/L and a LOQ of 30 µgN/L.

Data Collection Methods

Sampling Design

We plan on sampling Wildwood Lake and Silverbrook Pond at one location each. The locations are located at the spillway, or surface water outlet point, of each of the water bodies, and provide a public access location to avoid trespassing on private property. Samples for Total Nitrogen (TN), Total Phosphorus (TP), other nitrogen compounds (NOx), field parameters including Temperature, pH, Specific Conductance (SC), Total Dissolved Solids (TDS), Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) will be collected once each season (Spring/Summer/Fall/Winter) and twice during the months of June, July and August.

Samples will also be collected weekly during the months of June, July and August for field parameters. Each time samples are collected, we will also make observations regarding evidence for the presence of a HAB. We will record those observations, including a “No HAB” observation, using a CSLC designed digital form that was created with ESRI’s Survey123. Should we observe a HAB, we will also use the digital form designed by the NYSDEC using ESRI’s Survey123 to report such an observation..

Samples for nutrient analysis will be collected using a dedicated secondary sample bottle (1-liter) and transferred into laboratory prepared sample bottles provided by UFI, Labs.
Samples will be transferred into an amber 125 mL glass bottle for TP analysis, a 60 mL Nalgene bottle for TN analysis, and a 125 mL Nalgene bottle for NOx analysis. The sample for TP will also be acidified in the field using 0.2 mL of H2SO4. All samples will be saved in a cooler containing ice-packs until they are shipped to the lab. At the end of the day, samples will be either transferred to a dedicated insulated and ice packed shipping container provided by the lab or placed in a refrigerator (maintained between 2 - 4 degrees C) until they are shipped to the lab the following day.

Samples for field parameters are transferred from the secondary sample bottle (1 Liter dedicated Nalgene bottle) to a pre-cleaned and dedicated I-gallon plastic sample bucket. Both the secondary sample bottle and sample bucket are rinsed with sample water three times before the final sample is collected for processing. Samples for field parameter measurements are transferred to a two cup, glass measuring cup after rising three times with sample water before the final sample is used for measurements. The glass measuring cup is rinsed with activated carbon treated tap water after each sample is processed.

Sampling teams will include at least two individuals for each sampling event. At least one person on the team will be fully trained and informed about the sampling program protocols and its objectives.

Table 5: Sampling frequency

Matrix	# of Sampling Locations	# of Samples per Location	Parameter	Field QC Samples	Total Number of Samples/event	Sampling SOP Reference	Project Objective for Sampling and Analysis or Monitoring
Water	2	1	Total Nitrogen	None	1/ sampling event	UFI, Labs SOP	Meets the objective to sample for Total Nitrogen in Wildwood Lake and Silverbrook Pond
Water	2	1	Total Phosphorus	None	1/ sampling event	UFI, Labs SOP	Meets the objective to sample for Total Nitrogen in Wildwood Lake and Silverbrook Pond
Water	2	1	Nitrous Oxide	None	1/ sampling event	UFI, Labs SOP	Meets the objective to sample for NOx in Wildwood Lake Silverbrook Pond
Water	2	1	Temperature	None	1/ sampling event	CSLC	Meets the objective to sample for Temp. in Wildwood Lake Silverbrook Pond

Water	2	1	pH	None	1/ sampling event	CSLC	Meets the objective to sample for pH in Wildwood Lake Silverbrook Pond
Water	2	1	Specific Conductance (SC)	None	1/ sampling event	CSLC	Meets the objective to sample for SC in Wildwood Lake Silverbrook Pond
Water	2	1	Total Dissolved Solids (TDS)	None	1/ sampling event	CSLC	Meets the objective to sample for TDS in Wildwood Lake Silverbrook Pond
Water	2	1	Dissolved Oxygen (DO)	None	1/ sampling event	CSLC	Meets the objective to sample for DO in Wildwood Lake Silverbrook Pond
Water	2	1	Oxidation Reduction Potential (ORP)	None	1/ sampling event	CSLC	Meets the objective to sample for ORP in Wildwood Lake Silverbrook Pond

Equipment List and Instrument Calibration

Equipment List

Table 6: Equipment list

4 liter sample buckets
Nitrile Gloves
1 liter Nalgene secondary sample bottles
Extendable sampling pole
Coolers with ice
Field forms
Sample bottle labels
125 mL amber glass bottles
100 mL Nalgene sample bottle
60 mL Nalgene sample bottle
H2SO4 and pipettes
Temp, pH, SC, and TDS meter
DO meter
ORP meter
Pens

Instrument Calibration and Maintenance

Table 7: Instrumentation and Calibration

Instrument/Equipment	Calibration Frequency	Maintenance Requirements
VIVOSUN 4-in-one meter	Calibrate before use at the beginning of the summer season per manufacturer's instructions. Calibrate every two weeks during the summer season.	As per manufacturer's instructions
Yeiryi Dissolved Oxygen Meter	Calibrate each day before sampling as per the manufacturer's instructions.	As per manufacturer's instructions
Milwaukee MW500 ORP Meter	Factory calibrated; no further calibration required	As per manufacturer's instructions

All calibrations for this project will be conducted by the field team leader and documented. Calibration records will be kept on calibration data sheets specific to each piece of equipment. Calibration records will include date, time, name of individual doing calibration, and the calibration results themselves. Acceptance criteria for calibration checks will also be included on the data sheets. If the instruments are not working the data will not be collected and documented as such.

Analytical Methods:

Upstate Freshwater Institute, Inc. (UFI) located in Syracuse, NY will analyze water samples for Total Phosphorus (TP) using Method SM 4500-P F-H, 2011; Total Nitrogen (TN) using Method SM 4500-N C, 2011, and; Nitrous Oxide (NOx) using Method SM 4500NO3 F, 2016.

UFI will provide the required bottles for sample collection and the insulated shipping containers. See the table below for a summary of the Analytical Methods.Adopt-a-Pond Water Quality Monitoring and Pond Keeper Education Program

Table 8: Analytical Methods

Matrix	Analytical Parameter	Limit of Detection	Limit of Quantitation	Analytical Method	Sample Volume	Sample Containers	Preservation Requirements	Holding Times	Laboratory
Water	Total Phosphorus (TP)	2.5 µgP/L	7.5 µgP/L	Method SM 4500-P F-H, 2011	125 mL	glass amber	Acidify with H2SO4, Place on ice in field, 4°C	3.5 weeks	UFI, Inc., Syracuse, NY
Water	Total Nitrogen (TN)	44 µgN/L	144 µgN/L	Method SM 4500-N C, 2011	60 mL	plastic	Place on ice in field, 4°C	3.5 weeks	UFI, Inc., Syracuse, NY
Water	Nitrous Oxide (NOx)	10 µgN/L	30 µgN/L	Method SM 4500NO3 F, 2016	125 mL	plastic	Place on ice in field, 4°C	3.5 weeks	UFI, Inc., Syracuse, NY

Field Data Sheet:

Table 9:Field Data Sheet

Project:					
Waterbody name:					
Hamlet:					
Station ID:					
Collectors:					
Date:					
Time:					
Weather:					
Field measurements					
	Value	Units			
Water temperature:		°C			
pH:					
Specific Conductance:		uS/cm			
TDS:		PPM			
DO:		mg/L			
Aver Wind speed:		m/sec			
Max Wind Speed:		m/sec			
Wind direction:					
Air temperature:		°C			
Water clarity:					
ORP					
Notes:					

Training and Specialized Experience

Training

Personnel/Group to be Trained	Description of Training	Frequency of Training
Citizen Scientists, Undergraduate and high school interns	Proper use of field portable meters and water sampling equipment. Instruction on information to be recorded in the field.	Session at the beginning of the sampling season and as new personnel enter the program

Specialized Experience

Person	Specialized Experience	# Years of Experience
Robert Mozer, CPG	Professional hydrogeologist; Experience in the collection of water samples for multiple chemical parameters and the use of field portable monitoring equipment.	40+
Chris DeVivo	QA/QC Director; Experience in the collection of water samples for multiple chemical parameters.	40+
Dr. John Gross	Professor of GIS and Remote Sensing; Experience in the collection of water samples for multiple chemical parameters.	10+

Assessments and Oversight

Assessment Type	Frequency of Assessment	What is Being Assessed	Who will Conduct the Assessment	How Issues or Deviations will be Addressed
Data Checks and Assessments	1/month	Field data entries into spreadsheet and database	Chris DeVivo	Verify with sampling team and documented in the final report accordingly
On-Site Field Inspection	2 weeks into sampling season and mid-season	Undergraduate and high school interns against QAPP/SOP	Robert Mozer	Re-train if necessary

Data Management

Field Datasheets and Field Data:

All data from the field will be recorded on pre-printed datasheets . In the field data will be transcribed from datasheets to a digital form on a mobile device and uploaded to our ArcGIS database. 100% of the data will be checked for accuracy and transcription errors by the QA/QC reviewer. If there are any discrepancies in data entries, QA/QC Officer will check the field datasheets and discuss them with the field sampling team. Original datasheets will be stored in the CSLC office for five years after the completion of the project. The electronic database is located in the cloud on CSLC's ArcGIS ESRI account and will be maintained for five(5) years.

Laboratory Analytical Results:

Lab results will be electronically delivered to Robert Mozer in both PDF and XLS formats. Any data that did not meet the quality control requirements of the laboratory will be flagged. Once received by Robert Mozer, the laboratory data will also be entered into the electronic database.

Please note: This is a citizen science based project therefore any data generated by this project is for informational purposes only and should not be used to make any official scientific determinations.

Data Review and Usability Determination

Data Checks:

Field/Lab	Data Management
Monitoring performed per SOPs or QAPP	Data entry and transcription errors
	Calculation/reduction errors
Measurements performed correctly	Proper data and document storage
Calibrations performed correctly	Missing data documented
Data meets acceptance criteria	
Holding times	
Evaluate any deviations from QAPP or SOPs to determine the impact to the data and project objectives	

All data issues identified will be discussed with the QAM to determine data usability on a case by case basis. All decisions to allow data that did not fully comply with QC criteria or QAPP requirements will be explained, and any resultant limitations on data use fully discussed in the final project report. Note: At the time of project execution and data collection, an approved QAPP was not in place. This will be indicated in the final project report. As such, the federal reviewing agency of this QAPP cannot determine whether all data quality objectives and controls were met and adhered too by the recipient organization. Any subsequent uses of the data from this project will be flagged and noted accordingly.

Reporting

The Project Director or Manager is responsible for submitting quarterly project reports to the EPA Project Officer. The quarterly reports will provide a status update for the project and will include a summary of the quality assurance data checks conducted and the results of those checks. The final project report will summarize the quality assurance data check results for the entire project along with the data usability determinations made by the Project Quality Assurance Officer. The rationale for the use of any data that does not fully comply with the quality criteria requirements of the approved QAPP will be fully explained in the final report.

Sample Log

Citizen Science Learning Center, Inc.

POB 282
Remsenburg, NY 11950
CitizenScienceLearningCenter@gmail.com
802.716.1960

Project:					
Waterbody name:					
Hamlet: Station					
ID: Collectors:					
Date:					
Time:					
Weather:					

Field measurements

	Value	Units
Water temperature:		°C
pH: Specific		
Conductance: TDS:		uS/cm
DO: Aver Wind speed:		PPM
Max Wind Speed:		mg/L
Wind direction: Air		m/sec
temperature: Water		m/sec
clarity: ORP		
		°C

Notes:					

Upstate Freshwater Institute, Inc. Certifications

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2026
Issued April 01, 2025
Revised January 26, 2026

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. GINA F. KEHOE
UPSTATE FRESHWATER INSTITUTE
224 MIDLER PARK DRIVE
SYRACUSE, NY 13206

NY Lab Id No: 11462

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Mineral	
Alkalinity	SM 2320B-2011
Chloride	SM 4500-Cl- C-2011
	SM 4500-Cl- E-2011
Miscellaneous	
Color	SM 2120B-2011
Silica, Dissolved	SM 4500-SiO2 C-2011
Specific Conductance	SM 2510B-2011
Turbidity	SM 2130 B-2011
Nutrient	
Ammonia (as N)	SM 4500-NH3 H-2011
Nitrate (as N)	SM 4500-NO3 F-2016
Nitrate-Nitrite (as N)	SM 4500-NO3 F-2016
Nitrite (as N)	SM 4500-NO3 F-2016
Orthophosphate (as P)	SM 4500-P E-2011
	SM 4500-P F-2011 or G-2011
Phosphorus, Total	SM 4500-P E-2011
	SM 4500-P (F-H)-2011
Residue	
Solids, Total Suspended	SM 2540 D-2015
Sample Preparation Methods	
	SM 4500-P B(5)-2011

Serial No.: 71586

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov

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