

Schoharie River Center Environmental Study Team
Freshwater Field Ecology Field School Program
August 15 – 19, 2022
Collins Park, Village of Scotia

Contact: John McKeeby, Executive Director, Schoharie River Center
phone: 518-875-6230, cell: 518-320-4510, email: john.mckeeby@gmail.com .

The program will be provided by the Schoharie River Center and will be operated at Collins Park, in the Village of Scotia.

Program Goals:

- 1) To provide a high quality one week career exploration, academic enrichment and job skills development program for middle school and high school age students (grades 7 - 12 grade) interested in experiential learning in the fields of Field Ecology / Aquatic Biology.
- 2) To introduce participants to the scientific methods, practices and skills necessary to assess the water quality of local streams, rivers, ponds and lakes.
- 3) To collect baseline water quality data (water chemistry, Benthic Macro-invertebrate (BMI), bacterial and physical assessment) on targeted streams, focusing especially on un-assessed waters. All data collected will be documented in writing and photography and shared with NYS DEC.
- 4) The program will provide the initial momentum and motivation to a core group of local youth who will continue to be interested in participating in an on-going Environmental Study Team Youth Development Program serving youth from Albany and Schenectady.

Maximum number of Student Youth – 20 youth ages 13 – 17 yrs. old or going into grades 7th – 12th.

Program Format:

The Environmental Study Team - Freshwater Field Ecology Program will meet five days a week (Monday – Friday) from 9:00 a.m. – 4:00 p.m. for a total of 35 hours per week. The program will begin and end each day at the Collins Park, Village of Scotia Youth will work with SRC Program staff both on-site at Collins Park and off-site at local freshwater streams and other study sites within walking / bike riding distance of Collins Park during the day. All activities will begin and end here at Collins Park, Village of Scotia. The SRC will ensure that all student youth will return to Collins Park, Village of Scotia by 4:00 p.m. daily. Parents should pick up between 4:00 – 5:00 pm.

Vocational and Career Development Skills

Youth will work with, learn about and receive training from Schoharie River Center staff (and Interns) and volunteers in the skills, behaviors and work attitudes needed to be successful in the fields of water quality monitoring, field biology research, environmental conservation, and cultural documentation.

In addition to teaching the youth in generic vocational and career skills, such as the importance of prompt and on-time attendance at work, the wearing of appropriate work attire, proper attitude display, and the use of appropriate language and communication skills with co-workers, supervisors and the public; youth

will also training and on-the-job experiential learning from aquatic biologists, environmental scientists, counselors and educators conducting ongoing environmental studies and bio-assessments of local streams and watersheds. Youth will work in teams (social distancing practiced), under adult supervision, in-the-field on projects assessing local water quality conditions, conducting stream bank assessments and clean ups, riparian buffer zone restoration and replanting projects, and local community based environmental education and outreach programs.

Academic Enrichment:

The projects and activities conducted during the week long program will also focus on encouraging and assisting the youth to understand how to utilize, apply and integrate what they are learning in their academic studies (Science, Math, History, Language, and Arts) to the local environmental studies, field research projects and community education activities of the EST Program.

Using professionally developed resources, reference materials and testing equipment, program youth will learn, under adult supervision and professional guidance, to utilize the methods and techniques necessary to conduct an ongoing stream monitoring and environmental conservation projects in accordance with accepted environmental science field research standards. Focusing primarily on the ecology of the Mohawk River and it's tributaries, youth will participate in ongoing stream monitoring study using skills, methods, and techniques they will learn through their participation in the project.

The skills the youth will learn are those used in assessing the physical, chemical, and biological properties of healthy freshwater streams, rivers, lakes and ponds and ground water.

Specific skills Youth will be trained in include:

Physical Assessment: Assessing and describing the geology, typology and geography of the monitoring sites utilizing standard techniques of identifying rocks, minerals, and soils; topographical maps and hand held global positioning satellite location devices, and historical records. **(Integrates with NYS Next Generation Earth Science and Math curriculum)**

Chemical Assessment: Utilizing EPA approved tests kits and chemical analysis equipment youth will learn the proper techniques, safety practices and skills needed when conducting basic chemical analysis of water samples to determine a monitoring sites (streams) ability to support life. Specific chemistry tests of water will include **pH, Alkalinity, Dissolved Oxygen, Turbidity, Conductivity, Nitrate – Nitrogen, and Orthophosphate**. Youth will become proficient in both data collection, and in the field analysis of results in accordance with EPA quality assurance guidelines. **(Integrates with NYS Next Generation Chemistry curriculum)**

Biological Assessment: Youth will learn the skills needed to collect and conduct a scientifically valid sample analysis of the Benthic Macro-invertebrate (BMI) population present at a monitoring site. Youth will learn to identify organisms to the level of order (i.e. stone flies, caddis flies, beetles, true bugs etc.), and utilize the NYS DEC approved Wadeable Assessments by Volunteer Evaluators (WAVE) methodology and protocol to assess the diversity (EPT richness) of a site, and interpret and analyze the results to determine the ecological health of the site and the need for further testing or possible intervention. Youth will learn how to utilize such tools as dissecting microscopes, computers, and the NYS Department of Environmental Conservation inter-net web site BMI identification database. BMI

data will be prepared for and shared with NYS DEC (**Integrates with NYS Next Generation Biology curriculum**)

Lunches and snacks:

All participants should bring their own lunch daily. We will provide drinks, Water, or Gatorade

We will provide Snacks and water bottles as well.

The SRC will provide healthy snacks throughout the day that are prepackaged, not home made to reduce the chance of exposing anyone to the virus. Fresh fruit that can be peeled, such as bananas, and oranges, as well as packages cheese and crackers, energy bars, etc., and drinks such as bottled water will be provided by the SRC.

What should youth bring to the program daily?

- **Youth should bring their lunch daily. As well as a complete change of clothes and shoes or Sneakers that they can hike in and walk in water in. We will wading in water, and through woods and meadows. Old sneakers work best.**
- **Please do not bring flip flops or Crocs for creek walking, they are not safe and will not hold up to creek walking.**
- **Sunscreen and insect repellent**
- **Some type of hat or cap**
- **Sun glasses are helpful**
- **Your uncurbed enthusiasm**
- **If students have medication for serious allergies or other needs that they plan to bring with them please let us know.**

Evaluation and Assessment

Success will be measured through the completion of journals and “field notes”, attendance in the program, and participation in the culminating exhibit event where program participants will present their research findings in poster presentations, power points, video, and or through oral presentation. All water chemistry and WAVE data will be shared with DEC. Each youth who completes the program will receive a certificate of completion as well as the opportunity to continue to participate in the Schoharie River Center Environmental Study Team Program.

Program Staff:

Program Director: John McKeeby, Executive Director of the Schoharie River Center.
Contact numbers: SRC: 518-875-6230, home 518-875-6889,
Cell: 518-320-4510,
email: schoharierivercenter@gmail.com.

Schoharie River Center, Inc.

Environmental Educators: Samuel Bruckman, BS, Pratt Institute. Industrial Design
Patrick Powers, BS SUNY Cortland. Environmental Studies

Digital Media Educator: Eric Ayotte, film maker.

Terry McCoy: HS Special Education Teacher.

Cost Breakdown:

Maximum attendance is 20 youth.

1. 4 staff daily minimum @ 40 hours per week X \$35.00 / hr = \$5600. / week
2. Snacks and drinks for 20 youth for 5 days = \$125/week
3. Operating Supplies, Office and program
(Water Chemistry Chemical Reagents, tests, PPE, first aid, paper supplies, student binders, printer ink, copy paper, batteries.

\$300 wk

Liability insurance (prorated)

\$500 wk

Total cost for one week program:

\$6525.00

Schoharie River Center Environmental Study Team
Freshwater Field Ecology Field School Program
August 15 – 19, 2022
Collins Park, Village of Scotia

Weekly Schedule (Subject to change based on weather and other factors)

Day 1 Monday 9 am to – 4 PM Collins Park, Village of Scotia

9:00 Introductions and Ice Breaking activities,
Overview of Watershed Ecology -

- Knowing your watershed address. What makes this home?
- How we know what we know.
- Field Journals: Describing your home watershed, history, places, and uses.
- Data collection methods, equipment, and protocols
- Maps and using maps and GPS.

12:30 Tour hike of Collins Park pond and Collins Creek and Mohawk River.

- Introduction to Water Quality Assessment
- In-stream Observation
- Lesson in Photo Documentation / Video documentation / video project planning
- Review day and photos back at SRC, discuss next day.

4:00 -4:30 Back to Collins park for pick-up or release home

Day 2 Tuesday 9 am – 4 pm –

A.M. Hike throughout Collins Park Lake and tributaries to the Mohawk River. Nature study. We will conduct water quality testing at Collins Park Lake and Collins Creek: collect data, and learn about how forest ecology and watershed ecology are interdependent.

P.M. -Lunch in the field and if time permits we will explore and conduct sampling (water chemistry and BMI) at locations on Collins Creek

Day 3 Wednesday 9 am – 4 p.m.

- Kayak and Canoe paddle /sampling trip along Mohawk River from Collins Park west through the islands of the Mohawk to Lock 8.
- BMI Sampling,
- Micro-plastics survey,
- Chemistry testing,
- WAVE Documenting water quality.
- Photo / video documentation

Lunch in the field.

Return to Collins Park by 3:30

Day 4 Thursday 9 – 4

AM field laboratory work at the Pavilion. Analysis of water chemistry and BMI data collected thus far.

P.M. – Field Trip to Lock 8 to meet with NYS Canal Corp lock workers. Record interviews with Boats owners / travelers in transit.

Return to SRC by 3:00 p.m. Review video and pictures shot for the day with discussion of video presentation for Friday

Day 5. Friday 9 – 4

A.M. 9 – 12

Finish up research presentations / posters regarding water quality testing, and video/photography presentations

12:00 - 1:00 Lunch at Jumping Jacks.

3 – 4 pm. Public open house and presentation of student research posters or power point presentation. Parents invited, student will demonstrate skills in macro-invertebrate identification, water chemistry testing, and act as ecology ambassadors for the public, provide tours of the test sites.

Award Student Certificates.

Schoharie River Center's 2022 Summer Program –
Integration of safety procedures for COVID 19.

The Schoharie River Center is committed to providing the highest quality experiential learning and youth development programming we can. Our program philosophy seeks to immerse the learner in a hands –on learning field work experience that allows them to work with others and develop skills in specific subject areas such as watershed ecology, community archeology, cultural documentation, local history, videography and various traditional arts.

With the immergence of the COVID 19 novel corona virus and the advent of the Pandemic of 2020, we are committed to protecting and safeguarding the health of all youth and staff participating in our summer field school programs. To this end, we have sought out the guidance of the Center for Disease Control (CDC) and the New York State Department of Health (NYSDOH) and we are instituting changes in our policies and practices in how we operate our 2022 field schools in order to protect as best we can the health and safety of our students and staff. As we move to implement these new safety practices and behaviors into our program, we recognize the importance that all participants (students, staff, program administration and parents) must agree to follow and cooperate to institute these practices, and work together to continuously practice COVID 19 safe behaviors in order to reduce the chances of spreading this dangerous virus to anyone else in their community, family, or circle of friends. All SRC summer program staff and employees have been vaccinated and booted against COVID 19.

To protect ourselves and our participants from Covid-19 while in our summer field schools the following practices will be adopted:

- **Daily health screening, body temperature check**
- **Healthy Hygiene practices such as hand washing and daily disinfection,**
- **Social distancing and where that is not possible,**
- **The wearing of face masks.**

Health screening questionnaire:

On a daily basis each program participant and staff member will be screened and assessed for any indicators of illness, including measuring body temperature, and surveying how they are feeling. If any participant, youth or staff should not feel well they should stay home for the day. If, during the day they begin to not feel well or run a temperature, they will be isolated from the group (with appropriate supervision) and parents will be contacted to arrange an early pick-up from the program.