

QUEEN'S UNIVERSITY BIOLOGICAL STATION TEACHER'S GUIDE FOR ELBOW LAKE

Revised January 2023

This *Teacher's Guide* is intended to outline matters of safety, procedures and policy for outreach programming at the Elbow Lake Environmental Education Centre (ELEEC).

Teachers must read this guide. This is to provide all pertinent information to bring a group to ELEEC for a day and participate in outreach programming.

Other general information about the ELEEC and Queen's University Biological Station (QUBS) are available on our websites at <http://elbowlakecentre.ca> and <http://qubs.ca>.

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1.0 PLANNING FOR YOUR VISIT

1.1 Booking

To book a date for your group to visit Elbow Lake and take part in outreach programs, contact Emily Verhoek, Outreach and Teaching Coordinator (emily.verhoek@queensu.ca). Once an available date has been confirmed, fill out our online [Field Trip Booking Form](#). This will provide the necessary information to QUBS staff to facilitate the programming. On the form, you will specify your group size, timing, and the type of programs you would like to participate in. You are also asked to specify any special needs or health concerns in the group. For confidentiality, we do not ask the names of the students on the online form.

All participants (students, teachers, and volunteers) must sign our [Waiver Form](#) in order to participate in our programs. All signed forms must be given to ELEEC staff upon arrival.

Registration information for Eco-Adventure Camp can be found at <http://ecoadventurecamp.ca>.

1.2 What to Bring: Student Checklist

Packing List for Students:

- Litterless lunch
- Appropriate clothing (see below)
- Personal medical items (epi pens, inhalers, etc., if required)
- Signed Participation Form
- Refillable water bottle

We will be outside for most of the field trip. Please remind students to wear appropriate clothing for the weather. We suggest dressing in layers to stay comfortable if weather changes throughout the day. Please Note: clothing and footwear may get dirty and/or wet.

For Warm Weather:

- Hat
- Sunglasses
- Rain Jacket
- Hiking/running shoes or rubber boots
- Insect repellent and sunscreen

For Cold Weather:

- Hat
- Mitts
- Neck warmer/scarf
- Warm, water resistant coat
- Sweater
- Snow pants (if snow is on the ground)
- Warm socks
- Winter boots

Note: When checking the weather forecast, remember to check for Sydenham, Ontario. In the event of severe weather, staff will modify the program to ensure comfort and safety.

1.3 Before You Come: Teacher Checklist

- Determine field trip date and complete [Field Trip Booking Form](#).
- Distribute and collect signed [Waiver Forms](#) from students, teachers, and volunteers.
- Ensure applicable students have all personal medical items with them
- Encourage all students bring a litterless lunch and refillable water bottle
- Access to a mobile phone. If you need to contact staff the morning of, call Emily Verhoek at (613) 464-9559.
- Bring a map to Elbow Lake. Our address is [1500 Hewlett-Packard Lane, Perth Road Village \(or South Frontenac\), ON](#). Please park at the Main Pavilion (there is room for the bus to turn around). See directions below.

1.4 Sample Field Trip Itinerary

9:00am	Welcome and Introduction
Split Class into two groups (~20 students/group)	
9:15am - 10:30am	Group 1: Limnology and Benthos Group 2: Fisheries and Aquatic Life
10:30am - 11:15am	All: Diversity & Adaptations of Birds
11:15am - 12:00pm	Lunch/Free Time
12:00pm - 12:45pm	All: Ecology Scavenger Hunt
12:45pm - 2:00pm	Group 1: Fisheries and Aquatic Life Group 2: Limnology and Benthos
2:00pm	Wrap Up and Departure

1.5 Fees and Payment

Please contact Emily Verhoek, Outreach and Teaching Coordinator for a quote.

A full program (4 hours) for a maximum of 35 students* is \$14/student and no charge for teachers, EAs, or parent volunteers.

For information about staying overnight and the associated reduced program rates, visit our website or contact us.

An invoice will be issued to the school after the group has visited ELEEC. Payment of the invoice can be cash or cheque. Cheques should be made payable to “Queen’s University at Kingston” and sent to the Biology Department at:

Elbow Lake Environmental Education Centre
c/o Queen’s University Department of Biology
Biosciences Complex
116 Barrie St.
Kingston, ON K7L 3N6

*Though 35 or less is our preferred group size, larger groups can be accommodated. For larger groups, please contact Emily Verhoek for information about possible modified programs

1.6 Cancellation Policy

Cancellations can be made by sending an email to the Outreach and Teaching Coordinator (emily.verhoek@queensu.ca) up to 7 days prior to your trip date. *A minimum of seven (7) working days notice is required for cancellation. If the ELEEC is notified of the cancellation less than seven working days in advance of the scheduled visit, a cancellation fee of \$50 will be charged.*

If you must cancel your trip less than 7 days before your trip date, please call the Outreach and Teaching Coordinator, Emily Verhoek, at (613) 464-9559 to reschedule.

If cancellation is due to inclement weather or board bus cancellations, a phone call and email will be made by the Outreach and Teaching coordinator before 8 am on the day of the trip.

1.7 Driving Directions

Our address is 1500 Hewlett-Packard Lane, Perth Road (or South Frontenac), ON. Please park at the Main Pavilion (there is room for the bus to turn around).

From Kingston:

- Travel North on Perth Rd/Route 10
- Turn Right on North Shore Crescent
- Turn Right on North Shore Road
- Turn Left on Hewlett-Packard Lane
- Stay left until you reach the Main Pavilion Parking

From Westport:

- Travel South on Perth Rd/Route 10
- Turn Left on Leland Rd
- Turn Left on North Shore Road
- Turn Left on Hewlett-Packard Lane
- Stay left until you reach the Main Pavilion Parking

2.0 GENERAL INFORMATION – ELBOW LAKE

2.1 Property History and Current Use

The Elbow Lake property arose from a 2011 agreement between QUBS and the Nature Conservancy of Canada (NCC). NCC is most interested in protection of the lands and constituent biodiversity of the 445 hectare (1100 acre) property that is part of the greater Frontenac Arch UNESCO Biosphere Reserve. QUBS uses the existing infrastructure and diversity of the site to offer programming grounded in environmental research, natural history and conservation work done by scientists at Queen's, NCC and other institutions, but aimed at a wider audience than just universities. Included in these programs are activities aimed at children and youth, particularly those visiting in a school group setting.

Originally a corporate retreat of Hewlett-Packard employees, ELEEC – with its overnight cabins, a main lodge, a log cabin museum and other outbuildings, as well as waterfront facilities and marked hiking trails – is poised to become a significant public outreach site of QUBS.

Since 2011, Eco-Adventure Camp has operated through the summer out of Elbow Lake. The focal age span of participants for this day camp is 8 to 18 years. Eco-Adventure Camp stimulates campers'

interests in nature, biology, conservation and ecology in an outdoor setting that affords opportunities for swimming, hiking and canoeing.

2.2 Administration

QUBS is administered as part of the Department of Biology, at Queen's University. The cascade of responsibility for operations is as follows: Dean, Arts and Science; Chairman, Department of Biology; QUBS Director, Dr. Stephen Loughheed; QUBS Associate Director, Dr. Shelley Arnott; and the QUBS Manager, Ms. Sonia Nobrega.

The Operations & Maintenance Coordinator, Mr. Adam Morcom, and the QUBS manager/director are responsible for the day-to-day operation of the facility and collaborate on planning, reservations and all aspects of general operations. The Outreach and Teaching Coordinator, Emily Verhoek, is responsible for planning and delivering all outreach programs.

Eco-Adventure Camp Director, Melissa Kehoe, is responsible for the delivery of day camp programming through July and August, and for the supervision of day camp counsellors.

2.3 Basic Services

Basic services (water supply, septic systems, electrical supply, heat, telephones etc.) are all available on site. Drinking water is provided only from the water cooler and large blue jugs in the Pavilion. Water delivered to any tap is not treated or tested, so should be presumed unsafe to drink – suitable for hand-washing, dish-washing and showering but not for regular consumption.

Toilets are located at the Pavilion and Day Lodge. Showers and an accessible washroom is also located in the Pavilion.

All buildings at ELEEC have heat. In the colder months, building used for programming will be heated. For overnight guests, heat is available in all of the cabins.

Please inform the QUBS Manager of problems or concerns if they arise.

2.4 Campfires

The stone fire pit, located between the Pavilion and the Nature Centre, is the only designated area for campfires. This central area is shared among users.

Firewood is available for purchase by users; if possible, please indicate the amount anticipated when booking. Fallen twigs and branches from around the designated fire area may be collected for kindling, but larger deadfall is to be left in its natural state.

The Co-ownership Agreement between NCC and Queen's University directs that, to reduce the risk of invasive species introduction and dispersal, firewood may not be brought in from outside the property boundaries. Firewood for use at ELEEC is sourced from within the property.

2.5 Swimming

Through summer, the designated swimming area at Elbow Lake is clearly outlined with floating buoys. Safety equipment in the form of throw rings and poles are in place at the beach and docks. Do not remove or play with safety equipment.

Other than for the Eco-Adventure Camp, the beach at Elbow Lake is unsupervised – there are no lifeguards. Those who choose to swim in Elbow or Spectacle lakes do so at their own risk. There are inherent dangers in recreational swimming: be safe, and recognize the hazards.

2.6 Fishing

Only catch and release fishing is permitted, within the season. Barbless hooks must be used, and live bait is not permitted.

2.7 Canoes

At Elbow Lake, canoes may be available for overnight guests and specified day user groups. The required safety gear (including life jackets, paddles, and safety kit) is provided and must be in place at each use. Life jackets or PFDs must be worn at all times when in watercraft at Elbow Lake.

Elbow Lake is free of Zebra Mussel (*Dreissena polymorpha*) and Spiny Water Flea (*Bythotrephes longimanus*). To reduce the risk of accidentally introducing these or other harmful invasive aquatic species, watercraft and boating equipment (e.g., paddles, PFDs) must not be brought into Elbow Lake from other locations without thorough cleaning and disinfection. Contact the Manager to request permission to bring outside watercraft and equipment into Elbow or Spectacle lakes.

2.8 Maps of QUBS Facilities and Properties

Maps detailing the Elbow Lake Environmental Education Centre facility and surrounding Frontenac Arch Natural Area property are available on the [ELEEC website](#), while mapping and imagery of the greater QUBS landholdings can be found on the [QUBS website](#).

3.0 OVERNIGHT VISITS

3.1 What to Pack to Stay Overnight

The Pavilion can comfortably host groups of 30-40 people. There is a modest supply of plates, bowls, mugs/cups and cutlery to accommodate that number of visitors, as well as cooking utensils, cutting boards, pots and pans. Appliances include three stove cooktops, one built-in oven, one microwave, one toaster oven, three coffee makers and a tea kettle. During low use periods, users are encouraged to share the Pavilion fridge for storing personal food items. Toilets and showers are located at the Pavilion.

A propane BBQ is located outside the Pavilion but is not to be operated within 3m of the building, for fire safety reasons. A lighter may be found inside with the utensils in the kitchen area. If you empty a propane tank please notify management so that it can be replaced in a timely manner. Compost bins for vegetable and fruit matter only are located adjacent to the Pavilion patio.

All cabins are serviced with electricity for light and baseboard heat (off-season use only). Each cabin has a double bed in one bedroom and a bunk bed in the second bedroom with a single bed bunked over a double bed. A pull-out single cot can be found in the closet. There is a fridge in each cabin, in which users are asked to store personal food items during periods of peak use.

The following is a simple checklist of items you should bring:

- ✓ Food (keeping in mind that kitchen facilities are shared)
- ✓ Food storage supplies e.g., plastic containers/lids or zip bags
- ✓ Plastic bags for garbage and recyclables, paper bag for compost
- ✓ Pillows, bedding (mattress cover, sheets, blankets/sleeping bag)
- ✓ Towels, facecloths, personal toiletry items
- ✓ Flashlight or headlamp with charged batteries
- ✓ First Aid supplies

4.0 HEALTH AND SAFETY

The foremost concern of QUBS staff is the maintenance of a healthy and safe living/working/teaching environment. Users must abide by the rules safety guidelines outlined herein and do everything in their power to assist staff with health and safety matters. All field activities entail some risk; the QUBS website (<https://qubs.ca/booking/field-lab-safety>) and Page 3 of the waiver (see below) summarizes the most relevant field safety hazards and best practices for mitigation. Users must be aware of inherent risks and endeavour to make others aware of risk factors. In conjunction with staff, plans must be put in place to minimize field risks. Each user group must conduct a risk assessment session prior to arrival and develop a group-specific operations plan for field safety.

Monthly checks are made of all buildings and equipment to ensure safe use and operation.

The QUBS Safety Officer is the QUBS Manager, Mrs. Sonia Nobrega, who can be reached at the Opinicon Station at 1-613-359-5629.

4.1 Telephones and 9-1-1 Emergency System

There is a telephone in the Pavilion, which runs on a main line that also connects to phones in the Day Lodge, Staff Cabin and maintenance building. Emergency information and contact numbers are posted by each phone.

IN CASE OF EMERGENCY CALL 9-1-1

Elbow Lake is serviced by the 911 emergency system. Dialling 9-1-1 from any phone gives access to fire, ambulance and police services, but note that cell phone service from your provider may not work on the property, particularly in more remote areas of the Frontenac Arch Natural Area.

A sample script for calling 9-1-1 is posted above all telephones. The municipal address for Elbow Lake is 1500 Hewlett-Packard Lane, Township of South Frontenac. The facility is located about 5.6 km east of Perth Road (County Road 10), just off of North Shore Road running north of Loughborough Lake. For a waterfront emergency, direct emergency services to 1400 Hewlett-Packard Lane.

The phone number for ELEEC is (613) 353-7968

The Queen's Department of Biology office number is 613-533-6160 and can be used as an emergency contact where departmental staff can provide assistance with contacting ELEEC users (during business hours, Monday to Friday, 8am to 4pm).

The phone number for QUBS (Opinicon Lake) is (613) 359-5629

4.2 First Aid

First Aid kits are located in the Pavilion, Day Lodge, and Rec Hall, and are checked monthly. However, if required items are used or missing, notify staff immediately.

4.3 Accident or Injury

Management must be notified immediately of any accident or injury sustained while at Elbow Lake. First aid and transport for medical attention can also be arranged by staff. In serious instances, call an ambulance via **9-1-1**.

QUBS endeavours to provide a safe environment at all facilities, working to ensure safe conditions at all times. If users note deficiencies, hazards or unsafe conditions, report these immediately to staff and/or the ELEEC Manager.

4.4 Ticks

In recent years, the range of the Black-legged Tick (*Ixodes scapularis*) has spread to include the Frontenac Arch area, and can be found on all QUBS properties. This insect is the carrier of bacteria that can cause a very serious illness known as Lyme Disease. Learn how to recognize a Black-legged Tick and protect yourself from tick bites – always check for ticks after any visit to an area where ticks are known to occur. Know how to recognize and respond to symptoms of infection: See www.health.gov.on.ca/en/public/publications/disease/lyme.aspx for additional information.

APPENDIX I: HAZARDS, DANGERS, and RISK of INJURY inherent during this EVENT

Hazard	Risk
Extreme heat	<ul style="list-style-type: none"> • In the summer months, consequences to visitors can include heat stroke, exhaustion, head-aches, sunburns; episodes of light headedness, fainting, chest discomfort, leg cramps, nausea and fatigue. Signs of excessive heat must be reported and never ignored. Every PARTICIPANT should bring sun protection such as sunscreen, a hat, <i>etc.</i>
Dehydration	<ul style="list-style-type: none"> • Visitors will be outside and active much of the day. There is a risk of dehydration, resulting in headaches, episodes of light headedness, fainting, chest discomfort, leg cramps, nausea and fatigue if inadequate amounts of water are consumed. Every PARTICIPANT should bring adequate water
Hypothermia	<ul style="list-style-type: none"> • Visitors may experience cool, wet days • Without proper clothing, there is a risk of hypothermia • A boat could be capsized and visitors or staff could spend some time in the water, resulting in cold wet clothes. Every PARTICIPANT should bring a dry changes of clothes
Extreme cold	<ul style="list-style-type: none"> • In the winter months, consequences to visitors can include frostnip, frostbite, and if symptoms are ignored, excessive loss of body heat can lead to hypothermia. Every PARTICIPANT should wear proper winter clothing
Rough & slippery terrain	<ul style="list-style-type: none"> • The terrain at Elbow Lake is rugged, often with loose debris or exposed wet rock. The terrain can be steep, uneven or slippery, with branches, rocks, or other obstacles present risks of slipping and falling that may result in bone and muscular skeletal injury, such as breaks, sprains and strains, or broken limbs, concussion or spinal cord injuries • This risk is increased in the winter months with the addition of snow and ice.
Insect bites & stings	<ul style="list-style-type: none"> • Visitors are at risk of being stung/bit by insects, including bees, mosquitoes, flies, and ticks. • While this is primarily just an inconvenience it could pose a serious problem for people with allergies, if the tick is infected with Lyme disease, or if the mosquito is a West Nile Virus carrier. Every PARTICIPANT must advise EVENT organizers of any allergies to insect bites and stings and carry, or provide staff with, their EpiPen
Lightening and wind storms	<ul style="list-style-type: none"> • There is a risk of storms, including lightening and high winds. • There is a risk of being struck by lightning or being hit by falling tree branches or other debris.
Swimming accident	<ul style="list-style-type: none"> • There is a possibility that a visitor could be injured while swimming (e.g., cramps, cuts, <i>etc.</i>)
Watercraft accident	<ul style="list-style-type: none"> • There is a possibility of capsizing in canoes, kayaks, and row boats.
Wildlife	<ul style="list-style-type: none"> • Visitors may encounter wildlife, including raccoons, porcupines, squirrels, skunks, deer, bears, etc. • Under most circumstances, wildlife will stay away from visitors and won't present a risk • However, wildlife can be unpredictable and may respond aggressively to visitors (biting, charging, spraying). PARTICIPANTS are prohibited from attempting to engage or interact with any wildlife
Getting lost	<ul style="list-style-type: none"> • Visitors will explore areas (trails, wetlands, lakeshore) beyond the building envelope. • There is the possibility of becoming lost or disoriented. PARTICIPANTS must stay with and follow the instructions of the EVENT Staff.