

# Identification of Ontario's Benthic-invertebrate Families

A course co-hosted by Conservation Ontario,  
Lakehead University and Ontario's Ministry of the  
Environment, Conservation and Parks

19-21 February 2019

Lakehead University  
500 University Avenue, Orillia,  
ON L3V 0B9

Instructors:

Chris Jones Ph.D.  
Sarah Sinclair

In partnership with:

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Lifelong Learning



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## COURSE ANNOUNCEMENT

### Purposes:

- (1) To fast-track the process of learning family-level benthic-invertebrate identification for those who have mastered basic OBBN 27- group level taxonomy
- (2) To prepare registrants for the family-level certification exam that is administered by the Stroud Centre (Society for Freshwater Science's (SFS's) Taxonomic Certification Program)

### Instructors:

Chris Jones is Ontario's Ministry of the Environment, Conservation and Parks (MECP) benthic-invertebrate-biomonitoring scientist. His research is aimed at improving biomonitoring methods by better characterizing reference conditions for Ontario's waterbodies, deriving biocriteria (numerical pass/fail thresholds) for biomonitoring indices, and understanding sources of variation in benthic community composition. Chris is an SFS-certified taxonomist, and coordinates Ontario's Benthos Biomonitoring Network (a province-wide, lake-, stream-, and wetland-biomonitoring collaboration).



Sarah Sinclair is posted at the Dorset Environmental Science Centre as Conservation Ontario's Biomonitoring Technician. Sarah is an SFS-certified taxonomist. She oversees the OBBN's quality-assurance program by checking taxonomic identifications and enumerations for hundreds of samples each year.



### Format:

To pass the SFS certification, taxonomists must have mastered the terminology used in family-level keys; they must have learned the characters that distinguish families in each major group of invertebrates; and they must have studied a wide variety of specimens, so they understand the morphological variability that exists within families. This course provides students an opportunity to acquire such skills and experience. Emphasis is on taxa from eastern North America (especially Ontario).

The course provides an intensive 3 days of learning (9 am to 5 pm). Lectures and demonstrations will proceed for most of each day, with a portion of each afternoon reserved for instructor-guided practice (students will identify their own, or with provided specimens). Optional evening sessions (5 pm-7 pm each day) will review important concepts.

## Taxonomic Groups Covered

Day 1: Families in Ephemeroptera, Anisoptera, Zygoptera, Hemiptera, Megaloptera, Trichoptera, and Lepidoptera

Day 2: Families in Plecoptera, Coleoptera, and Diptera

Day 3: Families (or higher taxonomic ranks) in Coelenterata, Platyhelminthes, Nemata, Annelida, Mollusca, Isopoda, Amphipoda, and Hydrachnidia

Registrants who demonstrate proficiency during the course are encouraged to challenge the SFS taxonomic certification exam. The exam may be written at testing centers around Ontario, including The Dorset Environmental Science Centre. If you are interested in completing the exam, please book an appointment with a testing center and contact Mike Broomall at [tcp@stroudcenter.org](mailto:tcp@stroudcenter.org) to pay for the test. A \$100 USD fee applies.

### **Suggested Equipment:**

Students will require a microscope, benthic-invertebrate specimens, laboratory tools (e.g., forceps), and taxonomic references. We will be referring to *An Introduction to the Aquatic Insects of North America, 4th Edition: Merritt, Cummins and Berg* specifically during the course. A limited supply of equipment will be provided at the course; however students are asked to be as self-sufficient as possible. Registrants having access to their own stereo microscope, preferred taxonomic keys, or other resources are encouraged to bring them. Microscopes that provide acceptable illumination of benthic-invertebrate specimens, and have magnification of at least 40X, are suitable.

### **Hospitality:**

Registrants are responsible for their own meals and lodging. There are rooms available on campus and other types of accommodations available in Orillia. There is limited food service at the cafeteria during the reading week so plan accordingly.

For campus accommodations please contact:

Phone: 705-330-4009, ext. 3030

Email: [orilliaresidence@lakeheadu.ca](mailto:orilliaresidence@lakeheadu.ca)

### **Course Fee:**

**Lakehead Student:** \$199.00 plus HST

**Others:** \$399.00 plus HST

### **Registration Process:**

Please register online at the following link: [mysuccess.lakeheadu.ca/cell](https://mysuccess.lakeheadu.ca/cell)

Contact Sarah Sinclair for further information: (705) 766-2821 or [obbn@ontario.ca](mailto:obbn@ontario.ca)

**Course Location and Classroom:**



Classroom: Room OA2014 Simcoe Hall building.

***IDENTIFICATION OF ONTARIO'S BENTHIC-INVERTEBRATE  
FAMILIES COURSE  
AGENDA***

**Day 1**

Time*	Topics**
08:30-09:00	Sign-in
09:00-09:15	Welcome to the Course Purpose and format of Course Goals for Day 1
09:15-11:00	Families in Tricoptera - Lecture and Demonstration
11:00-12:00	Families in Ephemeroptera - Lecture and Demonstration
12:00-13:00	Lunch
13:00-13:30	Families in Anisoptera and Zygoptera- Lecture and Demonstration
13:30-15:00	Families in Lepidoptera and Megaloptera and Hemiptera - Lecture and Demonstration
15:00-17:00	Instructor-guided practice
17:00-19:30	Optional Evening Session-Review slideshow images of families covered that day

**Day 2**

Time*	Topics**
09:00-09:10	Goals for Day 2
09:10-10:15	Families in Plecoptera- Lecture and Demonstration
10:15-12:00	Families in Coleoptera - Lecture and Demonstration
12:00-13:00	Lunch
13:00-15:00	Families in Diptera - Lecture and Demonstration
15:00-17:00	Instructor-guided practice
17:00-19:30	Optional Evening Session-Review slideshow images of families covered that day



### Day 3

Time*	Topics**
09:00-09:10	Goals for Day 3
09:10-10:30	Families in Mollusca <ul style="list-style-type: none"><li>• Gastropoda</li><li>• Bivalvia</li></ul>
10:30-11:00	Families in Annelida <ul style="list-style-type: none"><li>• Oligochaeta</li><li>• Sabellidae</li><li>• Hirudinea</li></ul>
11:00-12:00	Families in Crustacea <ul style="list-style-type: none"><li>• Amphipoda</li><li>• Isopoda</li></ul>
12:00-13:00	Lunch
13:00-17:00	Instructor-guided practice or review slideshow images of families covered that day plus review the first 2 days

\*\*Timeslots are approximate. Breaks inserted where appropriate. \*\*

