

2024 ONTARIO FISH IDENTIFICATION WORKSHOPS

If you are a fisheries biologist or a student registered in a fisheries biology program, the Royal Ontario Museum (ROM), Department of Natural History provides an opportunity to improve your fish identification skills. The workshops are designed primarily for professionals, technicians, field biologists, and environmental consultants -- but other interested individuals, including university and college students, are welcome.

PowerPoint presentations and hands-on exercises will familiarize you with the characteristics that are used in distinguishing families, genera, and species. Exercises will develop your skills of counting, measuring, and examining the pertinent anatomical structures that are necessary to use identification keys to Ontario's fishes. Workshops will be held at The **University of Guelph**, and experienced staff from both the ROM and Fisheries and Oceans Canada will be on hand to assist you with exercises, provide advice, and access the specimens housed in the reference collection brought from the ROM.

A variety of courses are being offered this year:

- Three-day introductory workshop that will cover the broad array of Ontario fish families and provide an opportunity to develop specialized knowledge of a group of interest
- Four-day introductory workshop that will cover the same information as the three-day introductory workshop but has an additional one day in the field (Marden Lake/Eramosa River) with Jason Barnucz and Robin Gaspard from Fisheries and Oceans Canada, and ROM staff. A presentation on preservation, documentation, photographing and sampling tissues for genetic studies will also be given in the field.
- Two-day workshop on fish species at risk in Ontario
- Three-day workshop on Ontario's minnows, including the new families to Ontario: Leuciscidae, Tincidae, and Xenocypridae.

Introductory Workshop Presentations

- Fish anatomy
- Families of fishes
- Lampreys, gars, herrings, pikes, suckers, and catfishes
- Trouts and salmon
- Carps and minnows
- Sculpins, temperate basses, sunfishes, perches and gobies
- Barcoding and eDNA of fishes, given by Dr. Bob Hanner, Dept of Integrative Biology, U of Guelph.

- Preservation, documentation, tissue sampling, and photographing fishes (4-day workshop only)
- Review

Hands-on exercises

Approximately half the classroom time will be devoted to hands-on exercises, which focus on anatomical characteristics that separate species and test your ability to key fishes to family and species. The remaining time focuses on presentations, group identification, and testing. A reference collection of all Ontario freshwater fishes of a variety of sizes will be made available so that you can specialize in a group of your choice. The introductory workshops have 9-10 hours of hands-on exercises, which are interspersed between presentations.

Two-day Species-at-Risk Workshop

This workshop will focus on the identification of fishes classified as Endangered, Threatened or Special Concern. Groups covered include gars, whitefishes, minnows, suckers, madtoms, darters, and sunfishes. Emphasis will be placed on how to assess the distinguishing characteristics and comparison with similar species. **Completion of at least an introductory workshop is required for participation in this workshop.** Lecture material will include information on habitat.

Minnows and Carps Workshop

This workshop will focus exclusively on Ontario's minnow and carp fauna primarily through guided hands-on exercises and lectures. This will include fishes in the recently recognized family names Leuciscidae, Tincidae, and Xenocyrididae, as well as the well-known family named Cyprinidae. Preserved specimens of both adult and juvenile minnows and carps of all Ontario's 42 species are available so that you can compare closely related species. There will be time to practice keying out species individually and in groups. Lecture material will focus on anatomical features used to identify Ontario's minnows and carps. ***It is highly recommended that you take the introductory workshop before taking this workshop.***

Tests

The introductory and species-at-risk workshops will conclude with a 30-minute slide test, and a 1.5-hour specimen test. The minnow workshop will include a test jar of 20 assorted minnows to be completed during the workshop and a specimen test at the end of the workshop. A passing grade of 70% is required for all workshops to obtain a certificate.

Workshop Course Materials

Workshop registration for the introductory workshops includes a complimentary copy of the second edition (2022) of *The ROM Field Guide to Freshwater Fishes of Ontario*, and two spiral-bound lab manuals. These lab manuals include PowerPoint presentations (which will be sent electronically in advance of the workshops) and a revised *Keys to the identification of Ontario Freshwater Fishes* by E. Holm and B. Wells. Laminated guides to redhorse suckers and blackline shiners will be available on request for \$2 each at the workshops. Also included in electronic format:

- Random access electronic key to minnows of Ontario
- Illustrated glossary of terms used in the electronic minnow key
- Habitat preferences of Ontario minnows
- Ontario recognized common and scientific fish names and OMNRF species codes
- Selected bibliography useful in the identification of Ontario's fishes

- Companies that sell supplies for collecting, identifying, and documenting collections
- Useful fish-related websites

The fish species at risk workshop includes a lab manual with illustrated guides to the identification of fishes at risk and other similar-looking fish species. You are expected to bring your manual *Keys to the identification of Ontario Freshwater Fishes* that you received at the introductory workshop, as we will not supply a second copy free of charge. The minnow workshop includes a lab manual of lecture notes, and an identification key to Ontario's minnows and carps.

Time & Place

The workshops have been scheduled as follows (*Please note the 4-day workshop, which includes one day in the field, will be run concurrently with the 3-day workshop).

- Introductory Workshop (3 and *4-day) April 16-29*; April 29-May 1, May 7-9
- Minnows and carps Workshop Apr. 23-25
- Species at Risk Workshop May 2-3

Place: **University of Guelph**, Science Complex, Room 2304 (highlighted in green on attached map)
 Time: All workshops will begin promptly at 9AM and end at 5PM.

Resource Staff

- Erling Holm, ROM Departmental Associate
- Mary Burridge, ROM Assistant Curator
- Brenna Wells, ROM Technician
- Kathy Wang, ROM Technician Assistant
- John Furlone, ROM Technician Assistant
- Jason Barnucz, Fisheries and Oceans Canada
- Robin Gaspardy, Fisheries and Oceans Canada

What to Bring

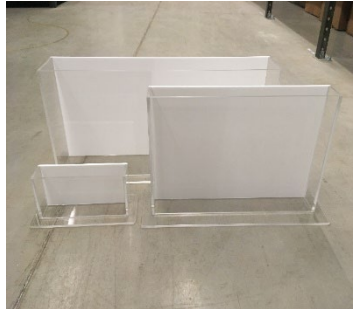
Microscopes and dissecting tools will be made available for your use. You are welcome to bring some of your own collections of fishes. We will endeavour to assist you as much as possible to make positive identifications.

Books and Fish Viewers

If you would like a copy of *Freshwater Fishes of Canada* by W. B. Scott and E. J. Crossman (1978) and *Fishes of the Great Lakes Region* by C. L. Hubbs, K. F. Lagler, Revised by G. R. Smith (2004), they can be pre-ordered (see registration form). Note that the former is not a revised edition. There are plans for supplements, which include accounts for species new to the fauna, updated distribution maps, and revised keys.

If you conduct fieldwork, identification of small living fishes in the field is facilitated by viewing and photographing them in plexi-glass fish viewers. We recommend that all fish crews have at least a small "Chub" viewer, which helps to keep a fish alive during its identification in the field and results in a better photograph for identification confirmation. If you are interested in purchasing one or more of the following plexi-glass fish viewers, note this on the registration:

- Chub viewer with inside dimensions 1.25" wide X 6.0" long X 3.0" deep – \$30
- Sunfish viewer with inside dimensions 1.5" wide X 12.0" long X 8.0" deep – \$40
- Trout viewer with inside dimensions 3.0" wide X 18.0" long X 8.0" deep - \$50



Nearby Accommodation

- Delta Hotels Guelph Conference Centre, 50 Stone Road West, Guelph. 519-780-3700
- Staybridge Suites Guelph, 11 Corporate Court, Guelph. 519-767-3300
- Fairfield Inn & Suites by Marriott Guelph, 35 Cowan Place, Guelph. 519-763-2339

Please note that hotel availability is limited due to several conferences taking place in Guelph at the same time as the workshops.

Travel

See attached map. If you are driving into Guelph for the day, please allow ample time to arrive. Parking is available on the University of Guelph campus. Information about rates can be found at <https://www.parking.uoguelph.ca/find-parking/visitor-parking> The closest lot to the Science Complex is P31.

Registration/Cancellation

To inquire about availability or reserve a spot in one or more workshops, contact Brenna Wells by e-mail (see below). Print a copy of the registration form and e-mail it to:

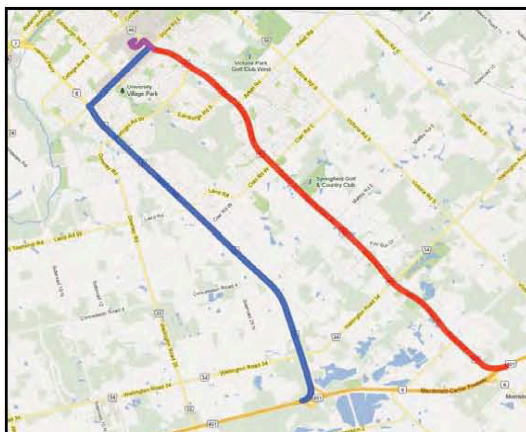
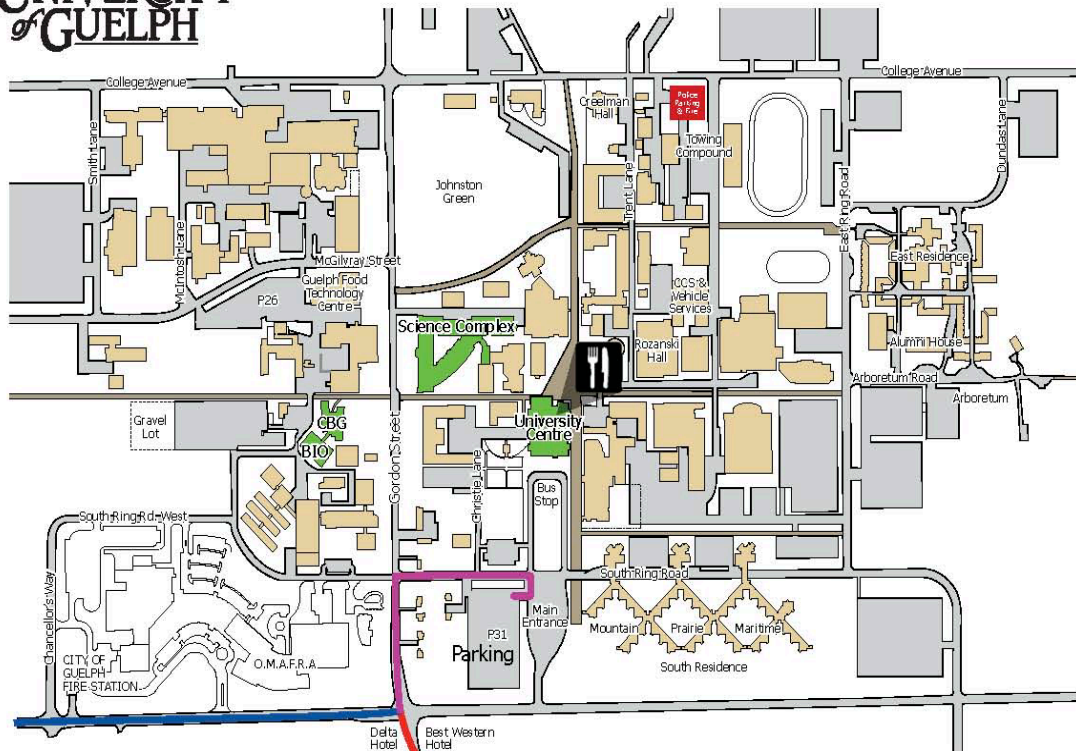
E-mail: brennaw@rom.on.ca

If you need to cancel your registration, the registration fee will be refunded to you minus a \$50 administration charge if you cancel up to within two weeks of the workshop. None of the registration fee will be refunded if you cancel less than two weeks before the date of your workshop.

Additional Information:

For information about course content or matters other than registration, contact:
 Mary Burrige, Department of Natural History (Ichthyology), Royal Ontario Museum 100
 Queen's Park, Toronto, Ontario CANADA M5S 2C6
 e-mail: workshop-ichthyol@rom.on.ca

UNIVERSITY of GUELPH



Science Complex

From Highway 401 (Toronto)

- Take the Brock Road (#299) exit and head North
- Continue along Brock Road as it turns into Gordon Street
- Take the first right past Stone Road, onto the South Ring Road
- Turn right into P31 and pay the attendant at the booth

From Highway 401 (London)

- Take the Highway 6 North (#295) exit
- Travel along Highway 6 and turn right on Stone Road
- Follow Stone Road into town and turn left on Gordon Street
- Take the first right past Stone Road, onto the South Ring Road
- Turn right into P31 and pay the attendant at the booth