Introducing the R/V Agassiz

This custom-built, 36-foot, aluminum-hulled vessel supports Michigan Tech’s mission in water quality research and education.

The Agassiz is available for educational cruises for middle/high school students and their teachers, extending their classrooms to include the waters of Lake Superior and the Keweenaw Waterway. Students have enthusiastically embraced this hands-on learning experience.

The Agassiz has served as a platform for research on Lake Superior sponsored by the Michigan Great Lakes Protection Fund, the Environmental Protection Agency, the National Science Foundation, and others.

Scientific Equipment Available Aboard the Agassiz

- Compound and dissecting microscopes
- Secchi disk
- Temperature probe
- Van Dorn water bottle sampler
- Portable spectrophotometer
- Phytoplankton & zooplankton nets
- PONAR sediment dredge
- Handheld scientific probes
- GPS units
- HydroLab for CTD profiles

Availability

The Agassiz sails from ice-out (mid-April) through October.

Each season offers its own opportunities:

**May and June** cruises help integrate principles developed in the classroom over the school year.

**July and August** cruises visit the lakes during their most dynamic period.

**September and October** cruises provide an exciting start to the school year with hands-on experiences that support classroom studies.

Cost

Available ship time:

- Half-day (4 hours) $387
- Full-day (8 hours) $751

MTU faculty are available for $60/hour to:

- lead the cruise,
- provide an in-class, pre-cruise introduction that sets the stage for the cruise,
- conduct a two-hour post-cruise laboratory experience analyzing samples.

To Make Reservations

Joan Chadde, Education Program Coordinator
Western U.P. Center for Science, Mathematics & Environmental Education
105 Dillman Hall
Michigan Technological University
1400 Townsend Drive, Houghton, MI 49931
Tel: 906-487-3341 Fax: 906-487-1620
Email: jchadde@mtu.edu

Agassiz Web Page
http://techalive.mtu.edu/resources/agassiz/index.htm

Water Quality Investigations

Aboard Michigan Tech's Research Vessel Agassiz

An Opportunity for Middle & High School Students to Study Lake Superior and Connecting Waters.

Season: mid-April through October

Investigation Topics:

- Biological Limnology
- Physical Limnology
- Chemical Limnology

Offered by:

Michigan Tech

and

Western Upper Peninsula Center for Science, Mathematics and Environmental Education
Safety

The Agassiz has been inspected by the U.S. Coast Guard and certified as a passenger vessel. The ship is operated by an MTU captain licensed by the U.S. Coast Guard. The Agassiz is equipped with a full complement of safety (life jackets, fire suppression system, lifeboat), navigation (electronic charting, GPS, radar) and communications (cell phone, marine radios, EPIRB) equipment.

Investigation Topics

Below are examples of topics that can be addressed in educational cruises. These can be tailored to meet students’ age level and a teacher’s curricular needs.

Biological Limnology

A PONAR dredge is used to collect samples of the invertebrate animals which inhabit the bottom sediments. Samples are processed to separate the animals from the sediment and the collection is inspected. Plankton nets sample the phytoplankton and zooplankton that inhabit the open waters. Stops can be made to conduct shoreline seineing of the fish community. On board discussion focuses on the diversity of aquatic life in different habitats and the role of invertebrate animals as indicators of ecosystem health.

Physical Limnology

The physical composition of sediment samples collected with the PONAR sediment dredge is evaluated. The sand-silt-clay content of the sediment is compared for sites at various depths. On board discussion focuses on the role of particle size, density, and their interaction with wave energy in determining sediment character and the types of organisms which inhabit various environments.

Chemical Limnology

Depth profiles of dissolved oxygen and water temperature are developed at several sites using a HydroLab. Vertical structure in oxygen and temperature is explored as a basis for understanding the significance of thermal stratification. On board discussion focuses on the interplay of physics (temperature), chemistry (oxygen), and biology (oxygen consumption) in determining the oxygen resources of lakes.