

INNOVATIVE LAKE
EDUCATION PROGRAM IS
MAKING SURE NO CHILD
IS LEFT ON SHORE.

Taking a LEEP

The majority of the LEEP curriculum is hands-on. Students paddle to critical habitat study sites. Here students prepare to disembark on Middle Eau Claire Lake in canoes provided by Canoes on Wheels (COW).

Story by John Kudlas and photos by Carol Rusch

“No child left on shore” became our lake association’s mantra after we learned that many of our area students did not have the opportunity to explore and learn about Wisconsin’s pristine Northern waters – resources right in their backyards. This revelation initiated a chain of events resulting in an innovative modular lake association curriculum, the Lake Ecology Education Program (LEEP).

In 2009 the Eau Claire Lakes Area Property Owners Association (POA) near Barnes collaborated with the Drummond Area School District and embarked on a unique educational journey.

The POA Education Committee, supported by a \$3,000 DNR Small Lakes Management Planning Grant (facilitated by Pam Toshner, aquatic invasive species regional coordinator) and encouraged by the Barnes town board, developed and implemented aquatic educational LEEP modules that could be embedded in the local seventh-grade science curriculum.

The material was not intended to be another “layer” of classroom teacher instruction, but was designed to creatively deliver state standards by using an enjoyable and experiential approach flavored with adventure.

Although an enthusiastic and cooperating teacher was crucial to the program’s success, the majority of instruction was designed so that it could be conducted by POA members and local citizens to create community involvement, support and ownership, while also supporting the local school and educators.

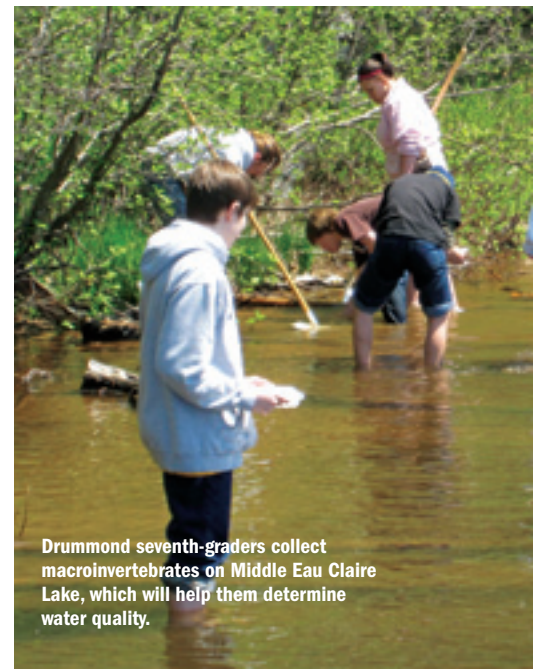
LEEP Education committee members

included Cris Neff, Jerry Kaiser, John Kudlas, Bob Hershey, Ted Eastlund and Fred Haueter. Bayfield Aquatic Invasive Species (AIS) Coordinator Jeremy Bates, Bayfield County Land and Water Conservation Department Land Use Specialist Travis Tulowitzky and DNR’s Alex Smith provided additional expertise. Douglas County AIS Coordinator Carrie Sanda was instrumental in the project.

The committee aligned the curricular material with state standards in concert with Andy Arthur, a seventh-grade science teacher in the Drummond School District. The Friends of the St. Croix Headwaters (FOTSCH) Canoes on Wheels (COW) program became an integral part. FOTSCH provides — at no cost — a canoe trailer, eight canoes, paddles and life preservers to nonprofit educational and research organizations. Canoes are an enjoyable, effective and efficient vehicle of choice for conducting aquatic investigations and adventure.

For the LEEP aquatic curriculum, each lesson was developed so it could be plugged into an existing curriculum. Although preferable, the total curriculum does not need to be implemented to enrich the present school curriculum. Modules need to “fit” into existing curriculum and be grade appropriate. The LEEP curriculum is designed for seventh-graders, but would be appropriate for sixth-graders and could be made more sophisticated for higher grade levels.

The majority of the LEEP curriculum is “hands-on” rather than rote memorization. Modules are delivered in a relaxed educational environment and students are encouraged to work in teams. Modules ad-



Drummond seventh-graders collect macroinvertebrates on Middle Eau Claire Lake, which will help them determine water quality.

dress various learning styles and use an interdisciplinary modular approach.

LEEP founders believe Wisconsin lakes, rivers and wetlands are unique and precious areas that can and should be explored with citizen instructors (lake associations) in collaboration with local schools.

Activities are designated in fall and spring to coincide with plant and animal life cycles. Preparatory indoor laboratory sessions are used before the students move outdoors to apply what they have learned.

Indoor fall classes find students studying at computers as they check data to prepare for an upcoming lake visit. Students use investigative activities to learn the chemical and physical qualities of unknown samples of water. Temperature, pH (acidity), clarity (turbidity) and dissolved oxygen are checked. Plankton is analyzed and categorized. Phosphates and nitrates are discussed.

Students are introduced to free-floating, submersed, floating leaf and emergent aquatic plants and are presented with an array of aquatic invasive species that might threaten lakes and waters.

Safe canoeing, avoiding hypothermia and wearing life jackets are emphasized and practiced before the LEEP Day experience.

When the class moves outdoors, students and chaperones paddle canoes to various critical habitat sites and use scopes to view, identify and photograph each unique site. Students key various plants from an assortment of aquatic plants and rake unknown plants to classify on site.



The author, John Kudlas, with Drummond seventh-graders categorizing macroinvertebrates.

They are awarded “stars” for plants identified to add a fun, competitive component.

Later, students ride pontoon boats to a deep water site where they measure temperature and dissolved oxygen at 5-foot increments and also measure surface pH and clarity using a secchi disc. Plankton nets are also used to collect and identify microorganisms. Students are asked to make a qualitative lake analysis.

Students photograph critical habitat sites, learning activities they enjoy and wildlife they discover. Students then create poster collages that they present to the class during the wrap-up day. Each session concludes with a group assessment time.

In the spring, the indoor module finds students using lab materials to differentiate macroinvertebrate types and learn how they indicate water quality. Students also learn about the value of terrestrial plants around lakes and transplanting methodology. They study how living and nonliving things are connected and how the flow of materials and energy are established in healthy terrestrial and aquatic environments. Students learn the importance of trees and shrubs to lakes and they distinguish tree species indigenous to the area by leaf, needle and cone structures. Students also learn how to take basic tree measurements using clinometers and measuring tapes.

When the spring class moves outdoors, students gather lakeside and classify macroinvertebrates as sentinels to determine water quality. The bugs are then returned to the environment unharmed.

At another site, students plant buffer plants and seedlings under the guidance of Bayfield County personnel. They ethically gather and record aquatic plants and animals and place them into appropriate categories of producers, consumers and decomposers. After classification, all samples are photographed or sketched and returned to their habitat.


Students take what they have learned

and apply it to a fun-filled, competitive scavenger hunt session featuring canoeing and gathering lake quality, tree indicators and tree measurements. Students use photography, writing, various media and poetry to present a creative project during the final wrap-up day under the guidance of the language arts teacher.

LEEP Day concludes with a student-teacher evaluation and assessment.

The LEEP program has already rendered valuable dividends. A sixth-grader recently discovered Eurasian watermilfoil in George Lake and a seventh-grade student found curly-leaf pond weed in Middle Eau Claire Lake during 2011 LEEP Day.

After completion of a LEEP Day, several students have volunteered to help with the Clean Boats, Clean Water initiative. The education committee has learned that with training and opportunity, students can become conscientious lake stewards.

More than 20 volunteer instructors today have coalesced into a unique instructional lake camaraderie. They cooperatively work on delivering the program goals and objectives with an enjoyable attitude and renewed appreciation for the symbiotic enthusiasm that exists between the outdoors and young learners. The lakes, schools, students and the community all benefit from the lake association’s initiative. 

John Kudlas writes from Barnes, Wis.

Any and all parts of the LEEP curriculum may be used and duplicated by any nonprofit organization to help teach students about the aquatic outdoors. The LEEP curriculum is available online at leepeducation.wordpress.com.

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To learn more about Canoes on Wheels, visit canoesonwheels.org/.

