



COSEE Great Lakes

Excellence in Great Lakes and Ocean Sciences Education

The newly announced NSF/NOAA regional Center for Ocean Science Education Excellence (COSEE Great Lakes) will connect formal and informal educators, students in grades 4-10, and the public with the science of the nation’s Great Lakes and world’s oceans. More than 2,000 teachers will enhance their Great Lakes/ocean sciences competencies and develop working relationships with researchers during the period 2005-2010, and more than 350 researchers will be engaged in the education of new audiences.

Public understanding of Great Lakes and ocean sciences is key to helping stakeholders make informed decisions on coastal and ocean management and personal stewardship issues. COSEE Great Lakes will engage the public in ways that promote a deeper understanding of our inland seas – the Great Lakes – and their influence on our quality of life and our national prosperity.

COSEE Great Lakes Theme

“Now I will tell you something!” said the boy to the little figure in the canoe. I have learned in school that when this snow in our Nipigon country melts, the water flows to that river. The river flows into the Great Lakes, the biggest lakes in the world. They are set like bowls on a gentle slope. The water from our river flows into the top one, drops in the next, and on to the others. Then it makes a river again, a river that flows to the Big Salt Water. ... You will go with the water and you will have adventures that I would like to have.” — Holling

Paddle-to-the-Sea is the title of an award winning children’s book by Holling Clancy Holling. The story is about the voyage of a carved wooden Indian in a canoe, set adrift in Lake Superior, as it winds its way through the culture, environment and geography of the Great Lakes region to cross the Atlantic Ocean. As with the book, COSEE Great Lakes will focus on connections from freshwater to salt, from watershed to sea. It will also focus on progress, from historical water quality issues to current challenges; from traditional science methods to new technologies; and from fragmented management to ecosystem approaches.

COSEE Great Lakes Goals

- Inspire citizens to become more scientifically literate and environmentally responsible through standards-based science curricula and programs that bridge the ocean and freshwater sciences
- Create dynamic linkages between the education and research community
- Implement coordinated research, education and outreach initiatives connecting Great Lakes topics and issues with counterpart ocean science concepts
- Link COSEE science literacy and education/research goals with regional and national audiences
- Improve ocean/Great Lakes sciences education throughout the Great Lakes region
- Involve regional Tribal educational institutions, teachers and students in Great Lakes/ocean sciences

COSEE Great Lakes Objectives

- Facilitate collaborative relationships that improve communication between Great Lakes researchers and 4-10th grade educators and students
- Assist research scientists in gaining better access to educational organizations and use appropriate pedagogy in relating the Great Lakes/ocean sciences story
- Enhance teacher capabilities for accessing science information and delivering high quality educational programs in Great Lakes/ocean sciences
- Integrate ocean and Great Lakes research into existing high quality educational materials
- Make research findings about the Great Lakes available to the public to encourage public science literacy and appreciation of water resources
- Increase access to Great Lakes/ocean sciences information for underrepresented groups
- Facilitate direct student connections to Great Lakes/ocean sciences experiences
- Collaborate with existing COSEE programs in uniquely synergistic ways to advance mutual goals

<p>COSEE Great Lakes Activities</p> <p>The project activity agenda is grounded in pedagogical research and regional data. The planned interactions fostered in the project are Great Lakes/ocean sciences connections and teacher/researcher support. To achieve program goals, each project objective is matched to one or more primary activity or task, focusing on Great Lakes and oceanic research, including:</p> <ul style="list-style-type: none"> • Teacher enhancement through research encounters • Research scientist interaction with teachers, students and informal educators • Public education on Great Lakes and ocean sciences for the public through informal settings and the Internet • Teacher engagement in curriculum development • Student connections via stewardship projects/summits • Active collaboration with other COSEE centers 	<p>Activity Summary</p> <ul style="list-style-type: none"> • Lake Exploration Workshops. Topics include: coastal processes, climate and weather, life in the water, hydrology and remote sensing, special habitats and special issues (AIS, etc.) • Lake Guardian Workshop. Teachers aboard the <i>R/V Lake Guardian</i> • Marine Immersion. A scholarship program for teachers • Teachable Moments. Facilitating connections to events external but relevant to COSEE Great Lakes • LimnoLinks. Research scientist interactions with educators and students via workshops, “house-calls” and a school for scientists at the annual meeting of the International Association for Great Lakes Research • Great Lakes and Ocean Sciences for the Public, Media and Schools. Facilitating free-choice learning through project collaborators, featuring an Inland Seas Science Seminar series • COSEE Great Lakes Online. Information via the Internet to promote program activities and help increase awareness of opportunities for researchers, teachers, students, and the public; link to other COSEE programs; provide access to Great Lakes curriculum materials; and host ecology course materials for teachers and students • Teaching with GLOS. Development of tools and educational materials to facilitate the use of GLOS/IOOS datasets for teaching about Great Lakes/ocean sciences • Engaging Teachers in Curriculum Development and Enhancement. Teachers examine and select Great Lakes curriculum materials, match these materials with ocean topics, and assist in developing a new <i>Fresh and Salt Curriculum</i> • Student Connections to Great Lakes/Ocean Sciences & Research. Includes O'LAKERS group field trips, Student Summits, Great Lakes Ecology Course for high schools
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<p>COSEE Great Lakes Partners</p> <p>The Great Lakes Sea Grant Network is composed of formal and informal educators, researchers and others throughout the Great Lakes region.</p> <p>COSEE Great Lakes partners include Sea Grant programs from Illinois-Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, with additional research support from NOAA's Great Lakes Environmental Research Laboratory (GLERL) and Michigan's Cooperative Institute for Limnology and Ecosystem Research (CILER).</p> <p>COSEE Great Lakes collaborators and Advisory Board will assist with various technical and outreach aspects, including the involvement of underserved populations.</p>	<p>Michigan Sea Grant Involvement</p> <p>Dr. Donald Scavia, Director of Michigan Sea Grant, is the Principal Investigator for COSEE Great Lakes. Steve Stewart, Michigan Sea Grant Extension Educator, will be leading the following COSEE efforts:</p> <ul style="list-style-type: none"> • Lake Huron activities, including the Exploration Workshop • Great Lakes Observing System and COSEE Great Lakes educational curriculum collaboration <p>Michigan Sea Grant will also be collaborating with educators from other Great Lakes Sea Grant programs on the following activities:</p> <ul style="list-style-type: none"> • Lake Superior, Michigan and Erie Exploration Workshops • Teachable moments • COSEE Great Lakes online • Teacher curriculum development and enhancement <p>Michigan-based Collaborators</p> <ul style="list-style-type: none"> • USGS Great Lakes Science Center • Great Lakes Environmental Research Laboratory • Great Lakes Commission • Bay Mills Community College • Detroit Public Schools, Monroe Public Schools • Grand Valley State University, Michigan Technological University • Thunder Bay National Marine Sanctuary & Underwater Preserve • Michigan United Conservation Clubs • Michigan Alliance for Environmental and Outdoor Education • Inland Seas Education Association
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