



Great Lakes Maritime Transportation Education Program
for Communities and K-12 Teachers & Students

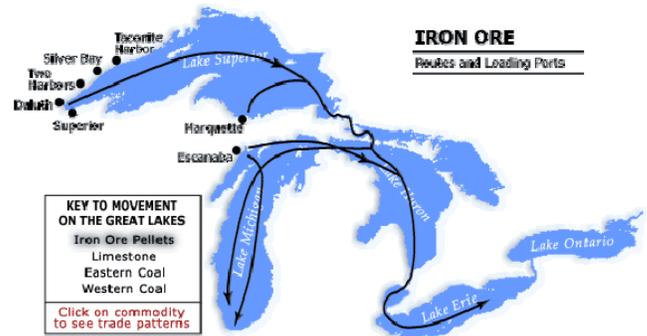
**Purchase Great Lakes Shipping Education “Chest”
For Your Museum or Education Center – ONLY \$150!**

WHY?

The economics and environmental benefits of Great Lakes shipping is becoming more apparent amid rising fuel prices and growing concerns with air quality, atmospheric deposition of pollutants (from vehicle emissions and power plants), and global warming. Industries which rely on moving large quantities of raw materials and/or products to distant markets in a cost-efficient manner are turning to Great Lakes shipping as an attractive alternative to rail or trucking. Yet few teachers, students, and Great Lakes residents have any knowledge of the maritime transportation industry operating on the Great Lakes. The shipping industry plays an essential role in moving 70-90% of the nation’s iron ore used in steel manufacturing, both western and eastern coal used by power plants throughout the Great Lakes basin, salt, and limestone, as well as many oversized items like wind generator parts. These cargoes are used in the manufacture of many household products, as well as for road construction, and to power homes, communities, and industries.

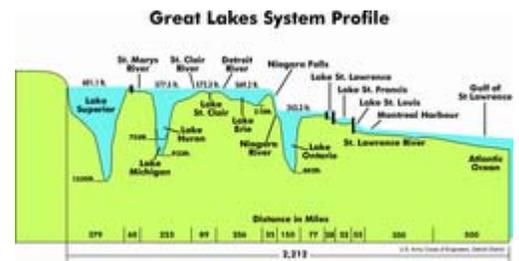
For Whom?

The goal is to distribute 12 Great Lakes Shipping Education ‘Chests’ throughout the Great Lakes basin to maritime museums and education centers in Minnesota, Michigan, Wisconsin, Illinois, Indiana, Ohio, New York, and Pennsylvania that conduct educational programs about the Great Lakes for schools and the public. This chest will help educators present the role of shipping in the Great Lakes basin and U.S. economy.



Successful Applicants will:

1. Host a Great Lakes Maritime Education workshop for 10 or more formal or non-formal educators that focuses on Great Lakes shipping topics: history, economics, geography, etc.
2. Be able to act as a lending library for formal and non-formal educators to use the chest.
3. Be located in the Great Lakes basin.
4. Be able to host shipping education programs for K-12 students and community members.
5. Willing to provide a record of chest users for one year after receiving the chest for grant reporting purposes.
6. **Be able to pay \$150 fee** for teaching chest (includes shipping). (\$300+ value)



How To Apply?

Complete attached form and provide typed responses to questions on a separate page. Send application by mail, fax, or email. **Applications due by February 1, 2008.**

Coordinated by the Western U.P. Center for Science, Math and Environmental Education at Michigan Tech University with a grant from the Great Lakes Maritime Research Institute to advance public understanding of Great Lakes shipping

www.glmri.org

Great Lakes Shipping Education Chest – ONLY \$150 !
Application Deadline: February 1, 2008

Contact Person _____ Date _____

Organization _____

In which Great Lakes watershed are you located: _____

Shipping Address: (street address required for UPS delivery) _____

City, State, Zip _____

Phone _____ Email: _____

Amount Due: \$150 Payment Method:

____ Cash/Check ____ Purchase Order Credit Card (circle one): Master Discover Visa

Payable to: Michigan Technological University Name on credit card: _____

Credit Card Number _____ Exp. Date _____
(include 3 digits on back of card __ _)

Please provide a typewritten response to the following questions on a separate page:

1. Describe your education/outreach program. What is your educational goal? Who is the target audience? How many people (K-12 students and adults) participate in your programs annually?
2. How will the *Great Lakes Shipping Teaching Chest* fill a niche in your center's/museum's programming and/or the services that you provide to educators in your area?
3. Will your site be able to act as resource library for area educators and maintain complete records? Describe your publicity plan for advertising the availability of the *Great Lakes Shipping Teaching Chest* to educators in your area.
4. When do you plan to offer a Great Lakes Maritime Education workshop for educators on Great Lakes shipping topics? Would you like me to help present the workshop?

Submit your completed application to:

Joan Chadde, K-12 Education & Outreach Coordinator
Western Upper Peninsula Center for Science, Mathematics & Environmental Education
105 Dillman Hall – Michigan Technological University
1400 Townsend Dr Houghton, MI 49931
Email: jchadde@mtu.edu Phone: 906-487-3341 Fax: 906-487-3341

What Trunk Recipients are saying about the Great Lakes Shipping Education Trunk:

We received the traveling trunk on Great Lakes Shipping and have already used it in one workshop! It's wonderful. Thanks so much!
Wendy W. Smith, Great Lakes Research and Education Center, Indiana Dunes National Lakeshore, Porter, IN

The trunk has already been used... and the large Great Lake floor map is a wonder addition to our programs!
Carolyn Rock, Whitefish Dunes State Park, Sturgeon Falls, WI

Great Lakes Shipping Education ‘Chest’ Contents

HANDS-ON TEACHING SUPPLIES

Great Lakes Floor Map

15' x 20' canvas floor map of the Great Lakes Basin, including adjacent states and provinces. The map is a great way to teach students of all ages (with shoes off!) about the Great Lakes watershed, shipping, geography, and more. Includes laminated labels for shipping and receiving ports, major rivers, states, provinces, and countries.

Samples:: low-sulfur western coal, iron pellets (taconite), grain, salt, limestone, containerized cargo

Great Lakes playing cards (52 vessels)

Poster of a ship – to identify parts of a ship

Ship captain’s hat & foam replica of a Great Lakes ‘laker’

CHILDREN’S LITERATURE

Armbruster, Ann. (1996). *A True Book: St. Lawrence Seaway*.

Grades 2-5

Describes the route of ships carrying cargo from Lake Superior to the Atlantic Ocean, including the history, geography, industry, and benefits of shipping on the Seaway.

Barker, Charles Ferguson. (2005). *The Day the Great Lakes Drained Away*.

Grades 2-5

What would happen if the Great Lakes drained away? This unique children's book shows the interesting landscape that would be revealed if all the water in the Great Lakes was to suddenly disappear. This book educates children and adults about the geologic features under the Great Lakes, and reminds us never to take the Great Lakes for granted.

Bergel, Colin. (2000). *Mail by the Pail*.

Grades K-5

This book illustrates the mail delivery system for Great Lakes freighters. The J. W. Westcott Company operates the mailboat for the U.S. Postal Service marine post office in Detroit-the only mailboat that delivers mail to freighters while they are moving.

Gibbons, Gail. (1992). *The Great St. Lawrence Seaway*.

Grades K-5.

Explains the history of this great trade route. Early French explorers and fur traders were halted by the treacherous rapids 500 miles upstream and eventually developed a system for carrying their trade canoes and cargoes around the dangerous stretches of the river, reaching the Great Lakes. Eventually, locks were built. The lock system is clearly explained in a series of animated diagrams.

Hertel, Captain Robert. (1999) *The Edmund Fitzgerald: Lost With All Hands*.

Grades 3-6

A factual account describing the fate of the Edmund Fitzgerald, including Great Lakes geography, shipping, and theories as to why the ship sank. Also contains a simple maritime glossary.

Holling, Holling Clancy. (1941). *Paddle to the Sea*.

Grades 3-5

An Indian boy carves a wooden canoe and sets it into Lake Nipigon to watch it float away. The canoe spends four years on the water, being picked up by loggers, fishermen, and families before finally making it to the ocean. The canoe’s adventures give children a sense of the wonders and diversity in the Great Lakes.

Wargin, Kathy Jo. (2003) *The Edmund Fitzgerald: The Song of the Bell*.

Grades K-5

The giant ship leaves Superior, Wisconsin loaded with iron ore. But disaster looms as the storm clouds, known as the ‘gales of November’ gather. This is the story of what happened to the 29 sailors and their ship.

REFERENCES

Lake Carriers Association. *U.S.-Flag Shipping on the Great Lakes* (brochure) and *Map of U.S. and Canadian Great Lakes Ports* (brochure). Describes major cargoes and provides a useful map of shipping and receiving ports.

Great Lakes Facts Map Set by Michigan Sea Grant (includes map of each Great Lake and GL watershed)

Great Lakes Environmental Atlas by U.S. Environmental Protection Agency and Environment Canada. 1995. Maps, history, management, diagrams, facts on the five Great Lakes.

Map of the Great Lakes: from Lake Champlain to Lake of the Woods (NOAA #14500). View at www.irnha.org

Videos / CDs / DVDs

Great Lakes Shipwreck Museum at Whitefish Point DVD (15 min.)

Great Lakes Shipwreck Historical Society, 111 Ashmun St., Sault Ste Marie, MI 49783 Tel: 906-635-1742
Tour of the Whitefish Point museum site, indoors and physical setting.

Living on the Edge: Great Lakes-St. Lawrence Shoreline DVD (25 min.) by US Army Corps of Engineers and International Joint Commission. Erosion processes, habitat diversity, commercial shipping, dredging, fluctuating water levels, and recreational boating.

Perspectives of A Vital Waterway – The Great Lakes St. Lawrence Seaway System Video (21:38 minutes)

St. Lawrence Seaway Development Corporation www.greatlakes-seaway.com

Contains more detail than the above video, describing both the channel, locks, rivers and Great Lakes that make up the waterway, as well as, the bulk carriers, tankers, cruise ships, and pleasure craft that share in the convenience and efficiency of one of the world's premier inland waterways.

Shipwreck: The Mystery of the Edmund Fitzgerald DVD (15 min.)

Donated by Great Lakes Shipwreck Historical Society, 111 Ashmun St., Sault St Marie, MI 49783 Tel:906-635-1742

The 729-foot Edmund Fitzgerald traveled the Great Lakes for 17 years until November 10, 1975 when she and her crew disappeared beneath the waves of one of Lake Superior's worst storms. On July 4, 1995, honoring a request of the families, the Great Lakes Shipwreck Historical Society led an expedition to recover the Fitzgerald's bell.

Steel Starts Here DVD (12:00 minutes) Cleveland Cliffs, Inc. Michigan Operations (2005)

www.cleveland-cliffs.com

Follow a hunk of iron ore as it is mined and transformed into a taconite or a pelletized ball that is 60% iron and goes on to become the steel used in automobiles, rail lines, buildings, and many more of our everyday products.

Top Ten Threats to the Great Lakes CD (54:00 min)

A radio program broadcast by the Great Lakes Radio Consortium in 2005, describes the top ten Great Lakes issues through interviews with scientists, decision-makers, organizational representatives, and concerned citizens. The threats include: water diversions from the Great Lakes, invasive species, polluted beaches, and shipping. See the entire list at: <http://www.gllrc.org/topten.php3>

Tragedies in the Mist DVD (30:00 min.) by Thunder Bay Marine Sanctuary & Underwater Preserve, Alpena, MI.

Thousands of vessels plied the Great Lakes for exploration, transportation, and trade. Many never reached their destination. An area of Lake Huron known for extreme weather, treacherous waters, and dense fog has claimed over 200 ships. Today these sites are protected by the Thunder Bay National Marine Sanctuary & Underwater Preserve.

A Vital Waterway – The Great Lakes St. Lawrence Seaway System Video (10:28 minutes)

St. Lawrence Seaway Development Corporation www.greatlakes-seaway.com

Captures the grandeur and economic importance of *The Great Lakes St. Lawrence Seaway System*--- its bustling ports, comprehensive marine transportation infrastructure, diverse intermodal transportation connections, and scenic vistas which all contribute to the making of North America's premier inland waterway.

CURRICULUM MATERIALS

Exploring the Great Lakes: A Logbook of Adventures by Patricia Westfield and Nan Soper (2003) Ages 8+

Includes information and activities on Great Lakes geography, history, shipping and commerce, folklore, environmental issues, and a map of the lakes, along with mapping activities. CD-ROM includes video selections of Niagara Falls, locks and canals, ships, light-houses, and more. Presents 5 themes of geography in a lively and relevant way, linking the lakes' importance to the region & nation.

Lake Effects: The Lake Superior Curriculum Guide for Grades K-8 (1998)

The Lake Superior Center/Great Lakes Aquarium, Duluth, MN

Lessons related to the history, geography, management and stewardship of the Great Lakes & Lake Superior.

Lake Rhymes – Folk Songs of the Great Lakes Region CD & Book by Lee and Joann Murdock. (2004)

18-song CD with 71 minutes of Lee Murdock performance, plus 146-page book of musical scores, and over 70 historic photos, maps and illustrations. Focuses on Great Lakes maritime history and traditional folk music, providing the stories behind each song, and ideas for using the songs to teach history, English, music and geography.

Paddle to the Sea Curriculum Activities by Marcia Seager, Rosane Fortner, Timothy Taylor. Ohio State University. Grades 2-6.

Forty activities on Great Lakes geography, shipping, lake ecosystems, and stewardship.

Notebook of lessons, resources, list of what students should know about Great Lakes Maritime Transportation (prepared by teachers), plus ***Great Lakes Shipping PowerPoint CD*** and notebook contents