

Guide to the Great Lakes for Senior Managers

PURPOSE: This informational booklet was prepared for the orientation of senior managers with the resources, issues, and stakeholders of the Great Lakes.

The Great Lakes Basin, including the international section of the St. Lawrence River above Massena, New York, covers about 299,000 square miles. Because of the large size of the watershed, physical characteristics such as climate, soils and topography vary across the basin.

To the north, the climate is cold and the terrain is dominated by granite bedrock called the Laurentian Shield consisting of Precambrian rocks under a generally thin layer of acidic soils. Conifers dominate the northern forests. In the southern areas of the basin, the climate is much warmer and the soils are deeper with layers or mixtures of clay, silt, sand, gravel and boulders deposited as glacial drift or as glacial lake and river sediments. The lands are usually fertile and can be readily drained for agriculture.

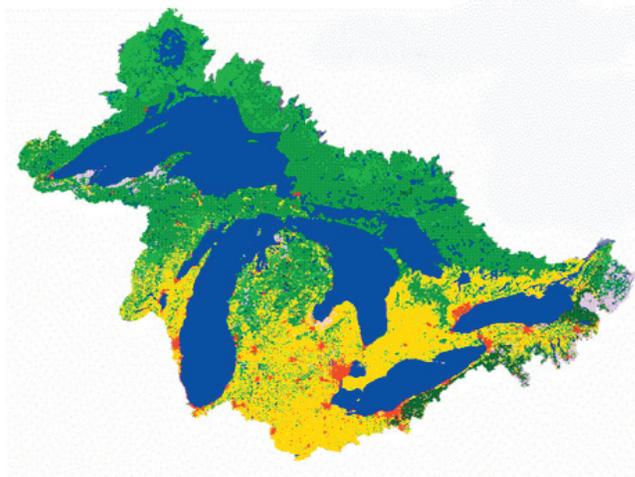
About 52 percent of the Great Lakes basin is forested; 35 percent is in agricultural uses; 7 percent is urban/suburban; and 6 percent is in other uses. Major commerce and industries include manufacturing, tourism, and agriculture. Almost 20 percent of the U.S. population and 40 percent of the Canadian population resides within the basin.

Human development has been concentrated around the rim of the Lakes and lower reaches of tributaries where the water resources provided for transportation in addition to supplying water for industrial and potable uses. Most of the population centers around the Great Lakes were heavily dependant on the lakes for waterborne commerce during their rapid growth in the 19th century. Over the past 30 years, residential and recreational uses have been the focus of additional development along the shorelines.

Geography and Environment

The Great Lakes are the largest group of freshwater lakes on Earth holding 95 percent of the United States' fresh surface water. They are an important

part of the physical landscape and cultural heritage of North America. Shared with Canada, these "freshwater seas" boast more than 10,000 miles of coastline and more than 30,000 islands and provide a reliable source of drinking water, transportation and power. The region's climate, uniquely influenced by the Great Lakes, hosts a wide array of recreational opportunities including boating, fishing, diving, beach enjoyment and other activities that support the region's outdoor heritage.



The environment of the Great Lakes region includes wide swaths of forest and wilderness areas, rich agricultural land, extensive mineral deposits, hundreds of tributaries, and tens of thousands of smaller lakes. The region's sand dunes, coastal marshes, rocky shore lines, lake plain prairies, wetlands and other

landscapes contain features that are globally unique or best represented within the Great Lakes basin. For example, the world's largest freshwater dunes line the shores of Lake Michigan. The region's glacial history and the influence of the lakes themselves create unique conditions that support a wealth of biological diversity, including over 200 globally rare plants and animals and more than 40 species that are found nowhere else in the world.

Social and Economic Context

If the Great Lakes region were its own nation, it would have the second largest economy in the world, second only the United States itself. The Great Lakes region provides transportation for raw materials and finished goods, fresh water to serve industry, electrical power, drinking water, and recreation for the basin's more than 30 million citizens. The 4.3 million recreational boats registered in the eight Great Lakes states generate nearly \$16 billion in spending each year. That spending alone directly supports 107,000 jobs. The Great Lakes environment supports a world-class recreational and commercial fishery, with an estimated 180 species of native fish contributing more than \$7 billion dollars to the economy.

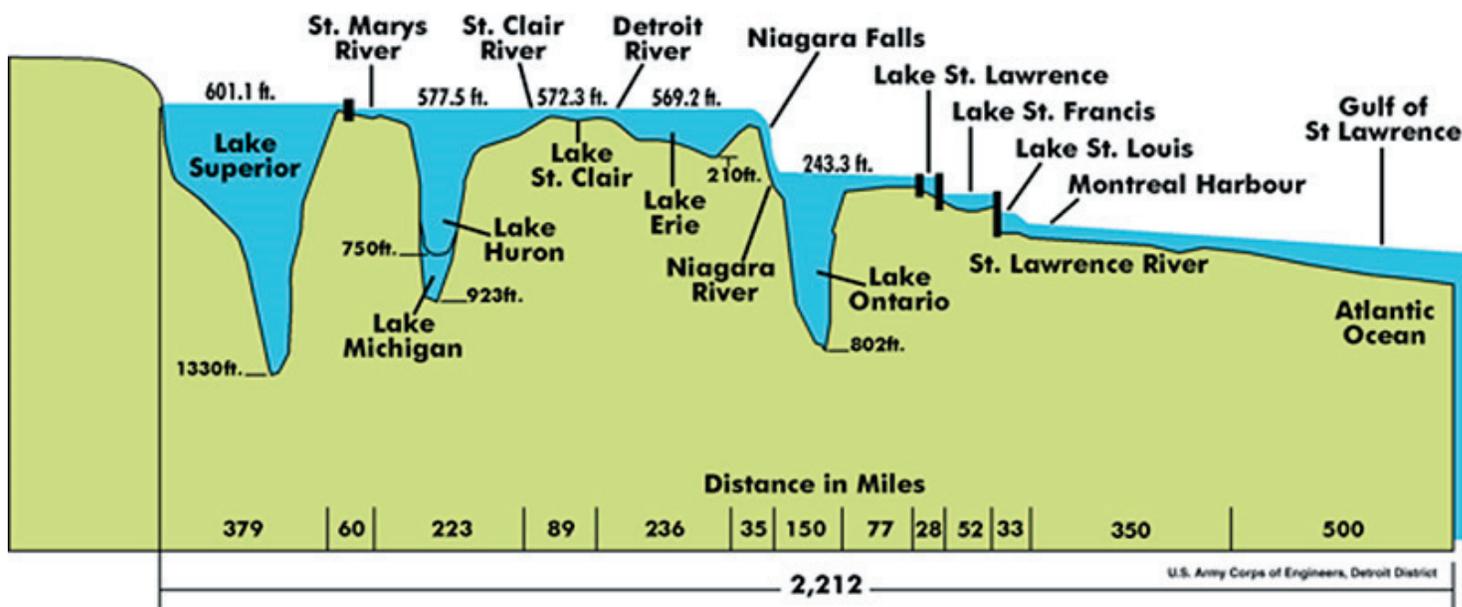
The water levels of the Great Lakes are primarily driven by meteorological conditions, although man-made structures control the flows through the rivers and channels connecting the lakes. The St. Marys River is the most upstream of these connecting channels, and drains from Lake Superior through the locks, powerhouses and dam at Sault Saint Marie to Lake Huron. Lake Michigan is connected to Lake Huron at the Straits of Mackinac (these lakes are at the same level). The St. Clair and Detroit Rivers drain from Lake Huron to Lake Erie (through Lake St. Clair). The Niagara River drains from Lake Erie to Lake Ontario, with the Welland Canal running in parallel. The Chippawa Grass Island Pool Control Structure regulates flows over the Niagara Falls. Finally, Lake Ontario is drained to the Atlantic Ocean through the St. Lawrence River which has two sets of locks and dams.

Great Lakes water levels fluctuate in response to seasonal, short-, and long-term events. The lakes are generally at their lowest levels in the winter months. With snow melt and spring rains, the water levels rise and peak in the summer. In the early fall, evaporation and outflows begin to exceed the amount of water entering the lakes. The range of seasonal fluctuations on the Great Lakes averages about 12-18 inches.

Short-term fluctuations in lake levels are due to winds or changes in barometric pressure. They can last from a couple hours to several days and be very dramatic. Fluctuations due to storms or ice jams are two examples. Lake Erie is most susceptible to storm surges, or seiches, due to its east-west orientation in an area of prevailing westerly winds and its generally shallow western end.

Long-term fluctuations on the Great Lakes occur over periods of decades and have varied as much as 3-4 feet from average levels since water levels have been recorded. Continuous wet and cold years will cause water levels to rise while consecutive warm and dry years will cause levels to decline. The Great Lakes experienced extremely low levels in the late 1920's, mid-1930's, and again in the mid 1960's. Extremely high water levels were experienced in the 1870's, early 1950's, early 1970's, mid 1980's and mid 1990's. Water levels have been below average the past eight years.

Great Lakes System Profile



Water Management – The diversion of water from the Great Lakes to areas outside the basin is a hot button of the largest magnitude and the subject of considerable litigation and legislation. Section 1109 of WRDA 1986 directed that additional diversions could only occur with the consensus of all the governors of the eight Great Lakes states and prohibited the federal government from spending federal funds on any study of new diversions, unless under the direction of the IJC. The governors and premiers of Great Lakes states and provinces have developed a process for joint decision-making on future withdrawals and diversions of Great Lakes waters through the creation of a new interstate compact and regional body.

Navigation – The Great Lakes, connecting channels and St. Lawrence Seaway are a complex and interconnected navigation system than includes more than 130 specifically authorized federal harbors and channels. While commercial navigation is active at about 65 of these harbors, all of these harbors are important to the history, identity and economy of Great Lakes coastal cities and towns. An issue of concern to the maritime community is the backlog of dredging required at federal harbors and channels. The most critical issue to cities and town with harbors that do not have commercial traffic is that funding for the operation and maintenance of recreational harbors is not currently supported.

Coastal Infrastructure – The majority of federal harbors on the Great Lakes include breakwaters, piers, and other structures built in the late 1800s and early 1900s that are significantly beyond their design life. These structures provide protection from waves, storm surges, and ice floes for the public infrastructure that developed along urban waterfronts, including water supply and wastewater treatment facilities, electric power facilities, industry, housing, and recreational facilities. Federal maintenance of breakwaters has been severely limited due to shrinking O&M funds and the lack of budget priority for more than half of these Great Lakes harbors that are recreational or have limited commercial navigation.

Aquatic Invasive Species –Between 1840 and 2007 more than 180 aquatic invasive species have become established in the Great Lakes with more than 40% discovered since the opening of the St. Lawrence Seaway in 1959. The threat of the Asian carp has made the electric fish barrier on the Chicago Sanitary and Ship Canal and regional discussion of ecological separation between the Great Lakes and Mississippi River an issue of the highest regional priority. Another issue of regional importance is the role of ballast water in the introduction and spread of aquatic nuisance species. NOAA in partnership with Sea Grant and USGS maintains the Great Lakes Aquatic Nuisance Species Information System data base, supports the work identifying the economic and environmental cost of potential species to the Great Lakes and supports the development and maintenance of State Management Plans for control and rapid response to new invasions.

Contaminated Sediments – The sediments at the bottom of Great Lakes tributaries and connecting channels reflect the abuses from decades of uncontrolled discharges from industries and municipal sewers. In many rivers and harbors, the pollutants in bottom sediments have become the primary factor limiting ecological restoration and recovery, and are responsible for most of the “beneficial use impairments” found at Areas of Concern (AOCs) designated by the Great Lakes Water Quality Agreement.

Wetlands and Aquatic Habitat – The Great Lakes have lost more than half of its original wetlands. These losses are continuing due to intense development pressures near the shores of the lakes and tributaries. The decline of habitat and continued introduction of invasive species is also causing the loss of native species.

NOAA established the Regional Collaboration effort to support integrated, regionally-tailored implementation of NOAA-wide programmatic priorities and provide a more systematic approach to both internal and external communications. NOAA has a responsibility to produce relevant, reliable and timely scientific information to support decision-makers and fulfill its stewardship mandates. Regional Collaboration enables NOAA to achieve this by identifying and applying NOAA's full range of capabilities, within and across regions to improve our productivity and value to stakeholders.

Regional Teams add value to NOAA's mission by:

- *Understanding stakeholder needs,*
- *Understanding NOAA's capabilities in the region,*
- *Being aware of the activities and capabilities of NOAA's current and prospective partners,*
- *Synthesizing regional needs and capabilities into a list of achievable and nationally significant priorities,*
- *Building and maintaining relationships with stakeholders and partners.*

Regional Collaboration expands upon existing regional coordination and communication efforts by helping to integrate program activities to address NOAA's priorities at both the national and regional scale. The purpose of regional collaboration is to improve NOAA's productivity and value to customers, using existing authority and accountability structures. This effort does not entail any changes to NOAA's organizational structure. Rather, it seeks to identify and apply NOAA's full range of capabilities, within and across regions, to design the best, geographically-specific solutions for customers.



Dr. Marie Colton
Regional Team Lead

Regional Drivers

When running for president, Barack Obama issued a campaign promise to protect and restore the Great Lakes. The pledge built upon a May 2004 Executive Order that created the Great Lakes Interagency Task Force and Regional Working Group to coordinate multi-agency federal restoration efforts.

In 2005, some 1,500 stakeholders created the Great Lakes Regional Collaboration Strategy outlining challenges facing the lakes, a framework for restoration and protection, and a common set of recommended solutions across eight priority issues areas: aquatic invasive species, habitat/species, coastal health, Areas of Concern/sediment remediation, nonpoint source pollution, toxic pollutants, indications and information, and sustainable development. Released in May 2009, the President's FY2010 budget included \$475 million for a new Great Lakes Restoration Initiative, strategically targeting programs and projects to address the most significant problems in the Great Lakes. NOAA in concert with other federal agencies on the Task Force is actively participating in this initiative.

Also driving the work in the Great Lakes is the Great Lakes Water Quality Agreement between the United States and Canada, which is a bi-national agreement to protect the Great Lakes resource. This agreement is the foundation for many governance structures that exist in the region today. These include terms used within this work plan including, Areas of Concern, Remedial Action Plans, Lakewide Management Plans (LaMPs) and many more that are contained within the lexicon of the Great Lakes. Other programs of significance include the State of the Lake Ecosystem Conference and the Bi-national Toxics Strategy.



Jennifer Day
Regional Team Coordinator
Great Lakes

NOAA CAPABILITIES

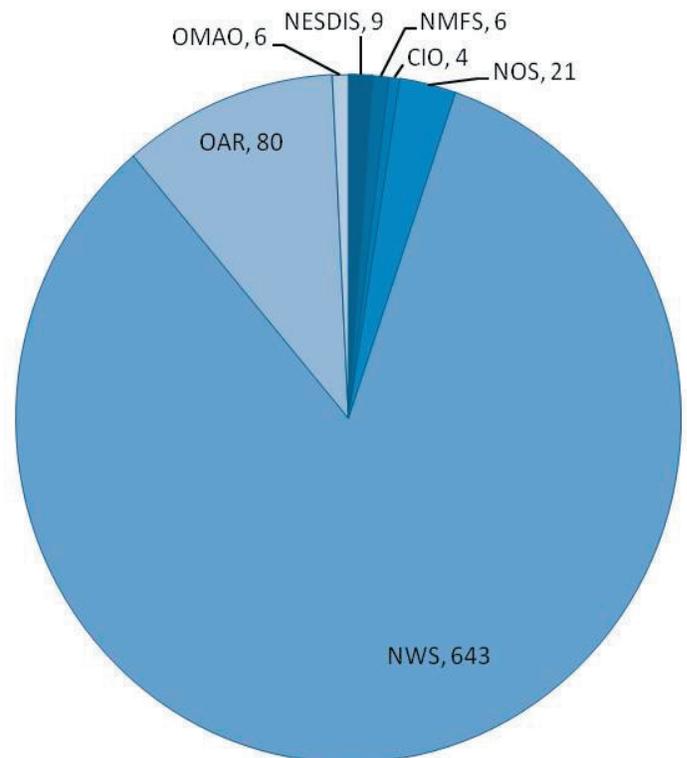
NOAA has substantial assets within the region that can be focused on addressing the challenges of the Great Lakes and taking advantage of the opportunities they present.

- The Great Lakes Environmental Research Laboratory, Ann Arbor, MI. While the Lab itself is OAR, several NOAA staff and contractors from NOS and NMFS are co-located to carry out the specific missions of their line offices and programs with respect to the Great Lakes region.
- The Thunder Bay National Marine Sanctuary, Alpena, MI.
- The Northern Hydrological Remote Sensing Center, Chanhassen, MN, which has NOAA Corps personnel and aircraft capabilities.
- The Advanced Satellite Products Branch, which houses NESDIS personnel.
- Scientific field stations located at Alpena and Muskegon, MI
- 6 research vessels, Laurentian, Storm, RV5501, Little Toot, Cyclops, Huron Explorer
- 19 Weather Service Offices
- 2 River Forecast Centers
- 2 offices of response and restoration

NOAA close partnerships in the region:

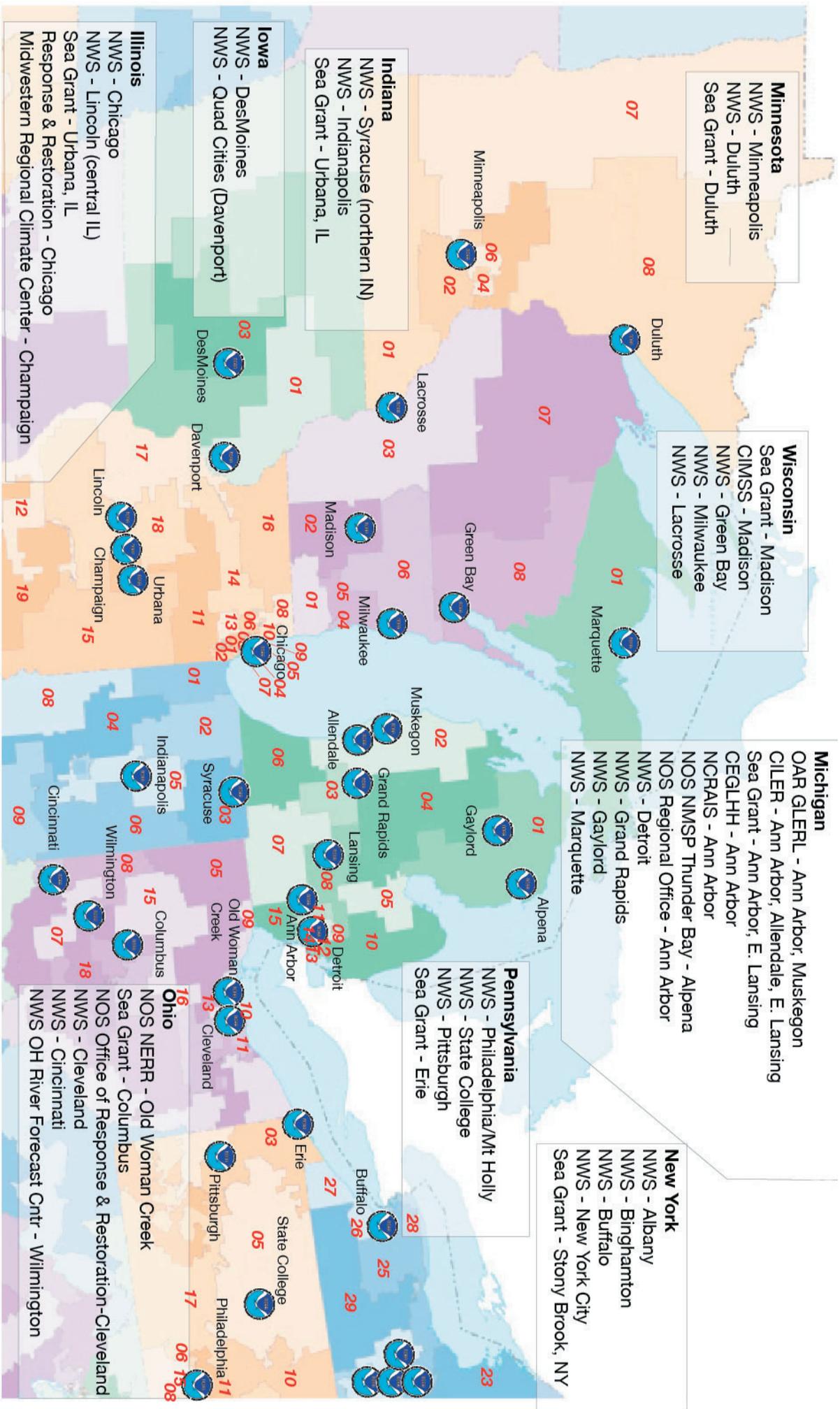
- State Geodetic Advisors
- Old Women Creek National Estuarine Research Reserve, Huron, OH
- 7 Coastal Zone Management Programs
- 7 Sea Grant Programs
- 2 Cooperative Institutes, Ann Arbor, MI and Madison, WI
- The Midwest Regional Climate Center, Champaign, IL
- The Great Lakes Observing System

Distribution of NOAA Great Lakes Employees by Line Office



Regional Collaboration works to improve cooperation among these NOAA and partner entities to more effectively address the challenges and opportunities presented in this diverse region. Investing NOAA's diverse expertise, established scientific experience, and resources in the region in cooperation with regional partners leverages NOAA's contributions and maximizes their impact resulting in an improved ability to address Great Lakes priorities through an integrated approach.

NOAA in the GREAT LAKES



KEY:

Numbers in red=U.S. Congressional district
 NOS=National Ocean Service
 OAR=Office of Oceanic & Atmospheric Research
 NWS=National Weather Service
 CILER=Cooperative Institute for Limnology & Ecosystems Research

CIMSS=Cooperative Institute for Meteorological Satellite Studies
 CEGLHH=Center of Excellence for Great Lakes & Human Health
 NCRAIS=National Center for Research on Aquatic Invasive Species
 NMSP=National Marine Sanctuary Program
 NERR=National Estuarine Research Reserve



NOAA OAR
 Great Lakes Environmental
 Research Lab (GLERL) Facility
 Ann Arbor, MI

Boundary Waters Treaty - Signed in 1909, this Treaty established the legal foundation and guiding principles for the U.S. and Canada to prevent and, if needed, resolve disputes related to shared water resources. The Treaty also established the International Joint Commission (IJC). The boundary waters are used for many purposes, including potable and industrial water supply, receiving treated wastewater, hydroelectric power generation, irrigation of agricultural lands, recreational and commercial navigation. In some cases, the IJC is empowered to authorize a particular use of the waters, while protecting competing interests in accordance with rules set out in the Treaty.

International Joint Commission (IJC) - The Boundary Waters Treaty established the IJC to assist the governments in implementing the terms of the Treaty and in finding solutions to problems in these waters. The IJC has six Commissioners, three appointed by the President with the advice and approval of the Senate, and three appointed by the Governor in Council of Canada, on the advice of the Prime Minister. Each Commissioner must act impartially in reviewing problems and deciding on issues rather than representing the views of their respective governments. The current U.S. Commissioners

The IJC has full-time staff at offices in Washington and Ottawa, and an office in Windsor, Ontario that addresses the Great Lakes Water Quality Agreement. It also has formed more than 20 boards, made up of experts from the United States and Canada, to help it carry out its responsibilities.

Great Lakes Water Quality Agreement – Signed in 1972, this agreement and subsequent amendments in 1978 and 1987 affirmed the commitment of the U.S. and Canada to restore and enhance water quality in the Great Lakes System (which includes the entire basin and St. Lawrence River where it ceases to be the international border). The objectives of the Agreement signed in 1972 were initially focused on the need to reduce loadings of nutrients causing algae blooms. Subsequent amendments have focused on the virtual elimination of persistent and toxic substances through the development of Remedial Action Plans (RAPs) for designated Areas of Concern (AOCs) and Lakewide Management Plans (LaMPs) for each Great Lake. For the first time since 1978, the Agreement is being renegotiated by the U.S. and Canada. Issues, such as climate change and invasive species, not currently included are being

The IJC may periodically conduct a Reference study on a particular issue or topic and establish a study board to oversee it. The recently completed Lake Ontario-St. Lawrence River Reference Study and ongoing Upper Lakes Reference Study are examples. The IJC also has Boards and a Council which provide recommendations related to the Water Quality Agreement. These include the Water Quality Board, Science Advisory Board, and the Council of Great Lakes Research Managers. NOAA's Dr. Marie Colton is a member of the Council of Great Lakes Research Managers.



Lana Pollack
(Chair)



Irene Brooks



Sam Speck

INTERNATIONAL COMMISSIONS (cont.)

Convention on Great Lakes Fisheries - Signed in 1954, this agreement between the U.S. and Canada established the Great Lakes Fishery Commission to formulate a fishery management research program, coordinate research, recommend measures to the governments, formulate and implement a comprehensive program for the purpose of eradicating or minimizing the invasive sea lamprey populations, and publish scientific and other information.

Great Lakes Fishery Commission (GLFC) – There are eight Commissioners (4 each from U.S. and Canada), with the U.S. Commissioners appointed by the President. The GLFC has a staff of about 20, based in Ann Arbor, MI. Dr. Chris Goddard is the Executive Director and Dr. Marc Gaden the Legislative POC.

GLFC has three advisory boards appointed by the Commission (Technical Experts; Sea Lamprey Integration, and; Fish Habitat Conservation). There are eight other committees that are appointed by the federal, state and provincial agencies, including the Lake Committees (one for each of the 5 Lakes) and Council of Lake Committees.

Lake Committees – Each of the 5 lakes has a Lake Committee determining fishing issues. Membership of each committee contains binational membership appointed by the governors and premiers of those jurisdictions bordering the lake.

Dr. Goddard also serves on the Chief of Engineers’ Environmental Advisory Board.



Chris Goddard



Marc Gaden

The following Members, and their primary committee assignments, are identified because of their continuing interest in Great Lakes regional issues and needs.

Jim Oberstar (MN-8) – Transportation & Infrastructure (Chair)

David Obey (WI-7) – Appropriations (Chair)

Pete Visclosky (IN-1) – Appropriations - Energy & Water (Chair)

Marcy Kaptur (OH-9) – Appropriations

Mark Kirk (IL-10) - Appropriations

Vernon Ehlers (MI-3) – T&I, Science & Technology (soon to retire)

Louise Slaughter (NY-28) – Rules (Chair)

Voinovich (OH) – Energy & Public Works (EPW)

Levin (MI) – Armed Services (Chair)

Durbin (IL) – Asst Majority Leader, Appropriations

Great Lakes Congressional Task Force – A caucus of 40 House and Senate Members from the Great Lakes Basin that jointly support Great Lakes environmental and economic issues and legislation. Joy Mulinex (below) is the staff lead for the Task Force, working out of the offices of Senators Levin (MI) and Voinovich (OH).



Fish & Wildlife Service (FWS) – FWS is under the Dept. of Interior. The primary Regional office of FWS in the Great Lakes is Region 3 (St. Paul, MN) although Region 2 (Boston) oversees portions of the lower lakes. FWS has field offices in every state that coordinate with Corps Districts on individual projects. Charles Wooley (right) is the Deputy Director of Region 3 and senior FWS representative on most Great Lakes committees.

U.S. Geological Survey (USGS) – A Dept. of Interior agency, USGS is primarily responsible for the collection and analysis of data on physical and natural resources, including water levels and flows. USGS has field offices located in each state and there is a biological research facility, the Great Lakes Science Center in Ann Arbor, MI. Dr. Leon Carl is the Regional Executive for USGS programs in the Midwest. Norm Granneman serves as the Great Lakes regional coordinator for USGS.

Natural Resources Conservation Service (NRCS) – A Dept. of Agriculture agency (formerly known as Soil Conservation Service), NRCS provides grants, subsidies and technical assistance to private land owners to support conservation farming practices, restore wetlands, and to keep lands that are highly erosive out of production. NRCS is organized by state offices, led by a State Conservationist. Regional coordination is managed by HQ. Ms. Jan Surface is the NRCS POC on the Great Lakes RWG. Vicki Anderson serves as their Great Lakes regional coordinator.

National Park Service – Another Dept. of Interior agency, the Service manages the national parks, lakeshores, historic sites and monuments in the Great Lakes watershed. Phyllis Ellen works as the Park Service liaison to EPA at the GLNPO office in Chicago.

Forest Service – Another Department of Agriculture agency, the Forest Service manages lands and resources within national forests. Region 9 (Eastern Region) is responsible for national forests within the Great Lakes watershed that are located in Minnesota, Wisconsin and Michigan. The Regional Forester is Kent Connaughton, located in Milwaukee, WI.

U.S. Coast Guard – The Coast Guard is under the Department of Homeland Security and is responsible for navigation safety measures, search and rescue operations, oil spill response, and enforcing regulations for controlling invasive species introduction through ballast water. Lorne Thomas is the POC on Great Lakes governance .

Federal Emergency Management Agency (FEMA) – FEMA, under the Department of Homeland Security, is responsible for disaster mitigation, preparedness, and recovery activities. Regional offices are aligned by states. Janet Odeshoo (right) is the Acting Administrator of Region 5, located in Chicago, with responsibility for Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.

Maritime Administration (MARAD) - MARAD is under the Department of Transportation and provides grants and other assistance to states, local governments and private interests for the development of maritime transportation capability. MARAD has a Great Lakes Gateway office located in Schaumburg (a suburb of Chicago). Floyd Miras is the Acting Director of this office.

St. Lawrence Seaway Saint Lawrence Seaway Development Corporation (SLSDC) - The SLSCD is a wholly owned government corporation, created in 1954 under the Department of Transportation, to construct, operate and maintain that U.S. portion of the St. Lawrence Seaway. Collister Johnson, Jr. (right) is the Administrator of the SLSDC.

Federal Highway Administration (FHA) – An agency under the Department of Transportation that provides financial and technical support to state and local governments for highway projects and provides funding for highways within national parks, national forests, Indian lands, and other land under Federal stewardship. Kimberly Majeris from a Resource Center in Matteson, IL (suburb of Chicago) is the POC for the FHA on the Great Lakes Regional Work Group.

U.S. Army Corps of Engineers (Corps or USACE)- The Corps is an agency under the Department of the Army/Department of Defense with both military and civil works missions. Unlike most other Federal agencies, the Corps has a three level structure: Headquarters in Washington DC; Divisional offices, and; District offices. Each office is commanded by a military officer, although the vast majority of Corps employees (>97%) are civilians. For civil works missions, the Corps is organized along watershed boundaries (although there are exceptions). The Corps' Great Lakes & Ohio River Division (LRD) is responsible for projects within the Great Lakes watershed. The Division office is located in Cincinnati, OH, although there is a small satellite office in Chicago, IL.

Environmental Protection Agency (EPA) – Regional offices of EPA are aligned by state boundaries, with three regions responsible for the eight Great Lakes states. Region 5 (Chicago) manages programs in IL, IN, OH, MI, WI, and MN. Region 2 manages NY and Region 3 (Philadelphia) manages PA. Susan Hedman (right) is the Regional Administrator for Region 5, which has a staff of about 1,200.



The Great Lakes National Program Office (GLNPO) is a small EPA office (staff of about 50) located in Chicago that coordinates Federal activities related to the implementation of the Great Lakes Water Quality Agreement and manages the Great Lakes Legacy Act (GLLA), a grant program for sediment cleanup. Gary Gulezian is the Director of GLNPO.

GLNPO is also the lead for the Great Lakes Regional Initiative (GLRI), an Administration Budget initiative that is putting over \$400M per year of new funds towards the restoration of the Great Lakes in FY 2010. Cameron Davis (right) is a Special Assistant to EPA Administrator Lisa Jackson who oversees the GLRI and chairs the Great Lakes Interagency Task Force for the Administrator.



National Oceanic & Atmospheric Administration (NOAA)- Great Lakes Environmental Research Lab Located in Ann Arbor, MI is directed by Dr. Marie Colton. **Coastal Zone Management (CZM) Program** NOAA provides grant funds to states with approved CZM programs. 7 of the 8 states have approved plans and the state of Illinois is in the process of gaining approval.

Great Lakes Interagency Task Force (IATF) – Formed by Executive Order 13340 in 2004, with Secretary-level representatives from nine Federal Departments and Agencies. Purposes are to coordinate Federal policies and actions in the Great Lakes region. The IATF is chaired by EPA Administrator. Dr. Larry Robinson is the current NOAA representative.. .

Regional Working Group (RWG) – Subordinate to Interagency Task Force with heads of Federal regional offices. Chaired by Gary Gulezian, Director of EPA's GLNPO, the RWG meets weekly by teleconference. Dr. Marie Colton is the NOAA representative. Action POC is Jennifer Day, regional coordinator

Great Lakes Regional Collaboration – Formed in 2004 in response to Executive Order 13340, with representatives of federal, state, local and tribal governments. Developed Strategy for Protection and Restoration of Great Lakes in 2005 and remains active to oversee implementation. NOAA representation is through Task Force and RWG.

Binational Executive Committee (BEC) – Committee of U.S and Canadian federal, state, provincial, and tribal governments established to coordinate implementation of the Great Lakes Water Quality Agreement. The BEC is co-chaired by USEPA and Environment Canada and meets twice a year. USACE representative is Jennifer Day, regional coordinator.

Great Lakes Regional Body – State and Provincial coordinating organization established to oversee implementation of new Compact for joint management policies for water withdrawals and diversions.

Lakewide Management Plans (LaMP) Committees – Managed by EPA and Environment Canada to facilitate agency and stakeholder participation in the LaMPs required under the Great Lakes Water Quality Agreement. LaMPs have been developed for lakes Erie, Ontario, Superior, Michigan with a binational partnership on Lake Huron and are updated periodically. These have become the primary mechanism for Great Lakes restoration collaboration. NOAA has an active participation in each of the 5 LaMP processes.

Remedial Action Plan (RAP)– Formed by state and provincial agencies and local governments to facilitate development and implementation of Remedial Action Plans for each of the 43 Areas of Concern designated by the Great Lakes Water Quality Agreement.

Great Lakes Panel on Aquatic Nuisance Species - Convened in 1991 in response to section 1203 of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990. The Panel identifies Great Lakes priorities, coordinated invasive species activities, and makes recommendations to a national Task Force on Aquatic Nuisance Species. NOAA's Panel representative is currently Jennifer Day, regional coordinator.

Coordinating Committee on Great Lakes Basic Hydrology & Hydraulic Data – Binational committee of federal agencies, established to coordinate the collection and analysis of data used for monitoring and forecasting water levels and flows of the Great Lakes, connecting channels, and tributaries. NOAA currently has NOS and OAR representatives on this group.

Great Lakes Wind Collaboration – Created in 2007, a coordinating body established to promote the sustainable development and use of wind power in the Great Lakes region. NOAA member is Ed Rutherford (OAR).

Coordinated Science and Monitoring (CSMI) – Created in response to a BEC directive to implement the combined Coordinated Science and Monitoring Initiative (CSMI). The plan builds upon the pre-established Cooperative Monitoring 5 year cycle. Enhanced monitoring and research field activities are conducted in one lake per year. Lake-specific activities in the other four years are: sample analysis, data interpretation, reporting, LaMP data needs compilation, CSMI monitoring and research workplan development and vetting through the LaMP, and planning and logistics for the next field year.



Illinois - Although less than 1% of the state is in the Basin, Illinois has 11 Congressional districts in the Great Lakes Basin. **Governor Pat Quinn (D)** is the current chair of the Great Lakes Commission. The Director of the Illinois DNR is Marc Miller (left). John Rogner (right) of the IL DNR represents Illinois at many Great Lakes meetings. Todd Main, Senior Policy Advisor with the IDNR Director's Office.



Indiana – About 10 percent of the state and four Congressional districts are in the Great Lakes Basin. The Governor is Mitch Daniels (R). The Commissioner of the Indiana Dept of Environmental Mgmt (DEM) is Tom Easterly (left) and the Director of the IN DNR is Robert Carter (right).



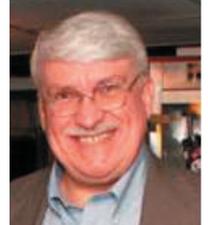
Michigan – The only state entirely within the Great Lakes Basin, with 15 Congressional districts. The Governor is Rick Snyder (R). Ken DeBeaussaert (right) is the Director of the DNRE Great Lakes Office.



Minnesota – About 7% of the state and 1 Congressional district are in Great Lakes Basin. The **Governor is Tim Pawlenty (R)**. The Commissioner of the Minnesota Pollution Control Agency (PCA) is Paul Eger (left) and the Secretary of the MN DNR is Mark Holsten (right).



New York – About 34% of the state and 8 Congressional districts are in the Great Lakes Basin. The Governor is Andrew Cuomo (D). The Commissioner of the New York Dept of Environmental Conservation (DEC) is Peter Grannis (left). Don Zelazny (right) is the NY DEC representative at most Great Lakes meetings.



Ohio – About 24% of the state and 9 Congressional districts are in the Great Lakes Basin. The Governor is John Kasich (R). The Director of the Ohio EPA is Chris Korleski (left) and the Director of the OH DNR is Sean Logan (right).



Pennsylvania – About 1% of the state and 2 Congressional districts are in the Great Lakes Basin. The Governor is Tom Corbett (R). The Secretary of the PA Dept of Environmental Protection (DEP) is Kathleen McGinty (left). Lori Boughton (right) is the PA DEP rep at most Great Lakes meetings.



Wisconsin – About 30% of the state and 6 Congressional districts are in Great Lakes Basin. Governor Scott Walker (R) is the current chair of the Council of Great Lakes Governors and State Chair on the Great Lakes Regional Collaboration. The Secretary of the Wisconsin DNR is Matthew Frank (left). Todd Ambts (right) is the Administrator of the DNR Division of Water and the Vice Chair of the Great Lakes Commission.



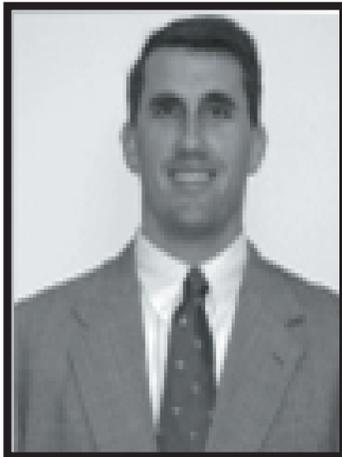
Great Lakes Commission (GLC) –

An interstate compact composed of governor-appointed or legislatively mandated representatives of the eight Great Lakes states. Canadian Provinces of Ontario and Quebec are associate members. The purpose of the GLC is to “promote the orderly, integrated and comprehensive development, use and conservation of the water resources of the Great Lakes basin.” The current GLC Chairman is Illinois Governor Quinn. GLC has full-time staff of about 25 in Ann Arbor, MI, led by Executive Director Tim Eder (right). The GLC partners with NOAA on habitat restoration projects and regular communication updates occur.



Council of Great Lakes Governors (CGLG) –

The Council is a partnership of Governors of eight Great Lakes states and Premiers of Ontario and Quebec that was formed in 1983 to encourage and facilitate environmentally sustainable economic growth. Interests include: international trade; decision making on future water withdrawals and diversions (Annex 2001), and; State lead on Great Lakes Regional Collaboration. Chair is Wisconsin Governor Doyle. The CGLG is NOAA’s Partner on the NOS FFO for the National Ocean Policy. CGLG has staff of about 10 in Chicago led by Executive Director Dave Naftzger (right).



Great Lakes Maritime Task Force – The Great Lakes Maritime Task Force membership includes most of the ports, shippers, ship builders, maritime industries and maritime labor organizations in the region. They have become very active advocates for Great Lakes shipping. Jim Weakley is the President.

Great Lakes –St. Lawrence Cities Initiative –

Initiated in 2003 by Mayor Daley, this group represents over 150 mayors and municipal leaders from U.S. and Canadian cities in the Great Lakes Basin. Primary interests have been funding for wastewater infrastructure, beach closings, and sediment cleanup. Executive Director David Ullrich (right) leads a staff of 4 in Chicago. Mr. Ullrich is a U.S. Commissioner on the Great Lakes Fishery Commission and is a former U.S. chair of the IJC Great Lakes Water Quality Board and former acting regional administrator (5) of the EPA.



Lake Carriers Association (LCA) –

Representing interests of U.S. shippers that navigate internally between Great Lakes ports, the LCA is a strong advocate for maintenance of harbors and connecting channels, and new Soo lock. Lake Carriers are less interested in the St. Lawrence Seaway than are foreign-flagged shippers. LCA President is Jim Weakley (right), based in Cleveland.



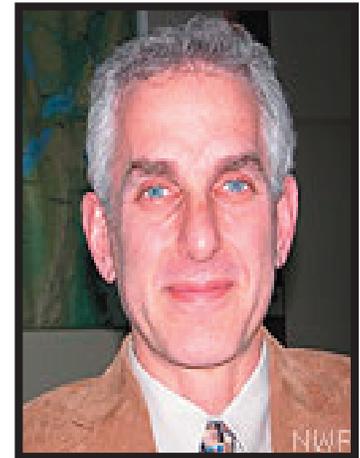
American Great Lakes Ports Association –

Group representing 12 of the larger U.S. ports on the Great Lakes. Advocate for maritime commerce, including navigation maintenance, the new Soo lock, and the GLSLS Navigation Study. Executive Director is Steve Fisher (right), based in Washington DC.



National Wildlife Federation (NWF) –

NWF is a national environmental organization. NWF has a regional office in Ann Arbor, led by Andy Buchsbaum (right). NOAA through NMFS currently partners with NWF on habitat restoration.



Great Lakes Shipping Association – This group represents the interests of shippers (domestic and foreign) that navigate between Great Lakes ports and other ports worldwide. The Saint Lawrence Seaway is a critical interest to this group. The Executive Director is Stuart Theis.

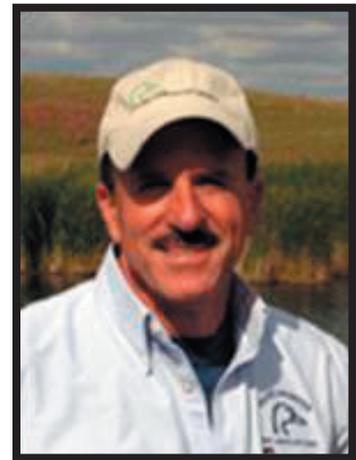
Council of Great Lakes Industries –

Group represents the interests of U.S. and Canadian Fortune 500 companies with significant investments, facilities, and products in the Great Lakes region. Primary focus is to advocate for sustainable development and against environmental regulations that would impair the ability of businesses to compete in a world market. President and CEO is George Kuper (right), based in Ann Arbor.



Ducks Unlimited (DU) –

DU is an international, nonprofit organization that supports conservation and restoration of wetlands and other habitat that is important to migratory waterfowl. DU is an advocate, owner and manager of land and water resources in trust, and provides planning, design and construction services for habitat restoration. Gildo Tori (right) is the Director of Public Policy at DU's Great Lakes/Atlantic Regional office in Ann Arbor.



Sierra Club

– The Sierra Club is an international organization, nonprofit organization that supports environmental protection and restoration. Emily Green (right) manages the Great Lakes region from Madison, Wisconsin.



National Association of Conservation Districts (NACD) –

The NACD is a national organization of county-level, soil and water conservation districts. Their primary interest is in Dept. of Agriculture programs. There is a coalition of the 208 soil and water conservation districts in the Great Lakes that has been supported by the Great Lakes Commission.

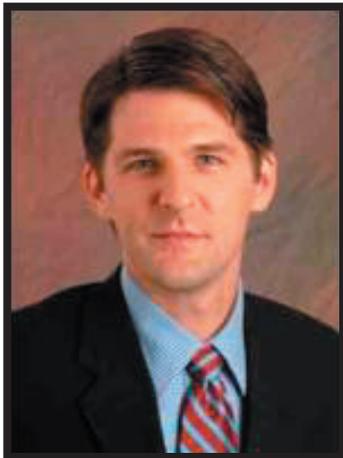
The Nature Conservancy (TNC) – TNC is an international, nonprofit organization that supports conservation of habitat for biodiversity through its advocacy and as owner and manager of lands held in conservation trusts. TNC has state-based offices. TNC's Great Lakes Program is coordinated through their Michigan office.

Healing Our Waters (HOW)-

Great Lakes Coalition – Association of national and regional environmental groups, created with funding from the Wege Foundation, to advocate for Great Lakes protection and restoration. The Coalition is led by the National Wildlife Federation and National Parks Conservation Association. Chad Lord (right) of the NPCA is one of the leaders.



Alliance for the Great Lakes (AGL) – Formerly known as Lake Michigan Federation, this group has a basin-wide focus on conservation and protection of Great Lakes resources. Joel Brammeier is the President and CEO, based in Chicago. Former President Cameron Davis is now the Great Lakes Special Advisor to the President at CEQ.



Great Lakes United (GLU) – A binational association of regional and local environmental, civic and labor groups that advocate for environmental protection and restoration of Great Lakes natural resources. Jennifer Nalbone (right) is the GLU coordinator for navigation and invasive species issues.



Great Lakes Indian Fish & Wildlife Commission – There is no single organization that represents the interests of all Indian tribes in the Great Lakes region. This group represents the interests of eleven Ojibwe Indian nations in MI, WI and MN. The director, Jim Zorn (right), has become the default tribal representative on several other Great Lakes forums.



Great Lakes Sea Grant Network – Sea Grant is a research and education program based in state universities with funding from NOAA. All eight Great Lakes states have Sea Grant programs (IL and IN are combined). Dr. Rochelle Sturtevant (right) is the coordinator of the Great Lakes network of Sea Grant programs. Rochelle is partially supported by NOAA and is co-located at NOAA GLERL.



LIST OF ACRONYMS

AOC – Area of Concern

BEC – Binational Executive Committee

CDF – Confined Disposal Facility (for dredged material)

DNR – Department of Natural Resources

DOT – Department of Transportation

DU – Ducks Unlimited

EC – Environment Canada

EPA – Environmental Protection Agency

FWS – Fish & Wildlife Service

GL – Great Lakes

GLC – Great Lakes Commission

GLFC – Great Lakes Fishery Commission

GLNPO – Great Lakes National Program Office (EPA)

GLRC – Great Lakes Regional Collaboration (interagency)

GLRCT – Great Lakes Regional Collaboration Team (NOAA)

GLRI – Great Lakes Restoration Initiative

GLU – Great Lakes United

HOW – Healing Our Waters

IATF – Interagency Task Force

IJC – International Joint Commission

LaMP – Lakewide Management Plan

LERRD – lands, easements, rights-of-way, relocations and disposal

NACD – National Association of Conservation Districts

NOAA – National Oceanic & Atmospheric Administration

NRCS – Natural Resources Conservation Service (Agriculture)

PAC – Public Advisory Committee

RAP – Remedial Action Plan

RTL – NOAA Great Lakes Regional Collaboration Team Lead

RWG – Regional Working Group

SOLEC – State of the Lakes Ecosystem Conference

TNC – The Nature Conservancy

USGS – U.S. Geological Survey

WRDA – Water Resources Development Act

KEY NUMBERS

VOLUME: Great Lakes hold 6.5 quadrillion gallons of fresh water; one-fifth of the world's fresh surface water; 95 percent of the U.S. supply

AREA: Water surface of Great Lakes is more than 94,000 square miles. Total watershed area is about 299,000 square miles.

DEPTH:
Maximum depth of Lake Superior is 1,332 feet
Maximum depth of Lake Erie is 210 feet

COASTLINE: United States and Canada -- 10,900 miles, including connecting channels, mainland and islands. The Great Lakes shoreline is longer than the entire east coast of the United States and equal to almost 44 percent of the circumference of the earth.

DEMOGRAPHICS:

Population: 25 million in U.S. and 8.5 million in Canada

Congressional districts: 54 (including Chicago metro area)

States (8): Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin

Provinces (2): Ontario, Quebec

Tribes: 35 federally recognized Indiana tribes in U.S. portion of Basin

Counties: 220 in U.S.

FEDERAL NAVIGATION SYSTEM:

71 deep-draft harbors

65 shallow-draft harbors

745 miles of navigation channel

138 miles of breakwaters

20 confined disposal facilities (CDFs) that are active

