

**LAKE
SUPERIOR**



**BINATIONAL
PROGRAM**



**LAKE SUPERIOR LAKEWIDE
MANAGEMENT PLAN (LaMP)**



HIGHLIGHTS 2004



Breathtaking rocky cliffs towering over shimmering aquamarine waters ...hidden, mysterious coves, protecting an astonishing array of habitat for fish and wildlife . . . deep, crystal clear, frigid waters silently guarding the final resting place for more than 350 shipwrecked vessels...These are some of the images evoked by the “greatest” of the Great Lakes: Lake Superior, or as the Ojibwe Indians named it, “gichigami.”

Several binational and national programs have been developed to protect, restore, and maintain the Great Lakes ecosystem. Foremost among them is the Great Lakes Water Quality Agreement (GLWQA), which has been hailed as an important example of international environmental cooperation. The 1978 GLWQA between the United States and Canada commits the governments to “restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem.”

To achieve that goal, the Canadian and U.S. federal governments, the Province of Ontario, and the States of Michigan, Minnesota and Wisconsin, in 1991, announced a “Binational Program to Restore and Protect Lake Superior”. The Binational Program identified two major areas of activity: A Zero Discharge Demonstration Program dedicated to the goal of achieving zero discharge or emission of nine persistent bioaccumulative toxic substances (mercury, PCBs, Dioxin, HCB and five pesticides); and a “Broader Program” focusing on the protection and restoration of the broader Lake Superior basin ecosystem.

The Lake Superior Binational Program (LSBP) represents a partnership of federal, state, provincial, and Tribal/First Nation governments working together to ensure the protection of this international treasure. These partners are assisted in their work by the Lake Superior Binational Forum, the citizen’s public outreach and input group comprised of 12 Canadians and 12 Americans representing various sectors from around the basin and including individual citizens.

Scope of the Lake Superior Binational Program

The Binational Program is concerned with the Lake Superior basin and the lands and waters within its watershed boundary. The program is also concerned with activities that affect the lake either directly or through impact on the basin. Some problems which originate outside the basin (e.g. air-borne contaminants and exotic species), are being dealt with through other mechanisms, but the LSBP will advocate progress on those issues. The Binational Program is intended to add value to existing and future programs and activities by linking initiatives and coordinating efforts towards common objectives.

LAKEWIDE MANAGEMENT PLANS

To accomplish the goals of the GLWQA and the Binational Program, and to address the continuing challenges remaining in the basin, a Lake Superior Lakewide Management Plan (LaMP) was developed in 2000, to develop a strategic, action-focused management plan for restoring and protecting the ecosystem. The LaMP focuses on partnership activities targeted at zero discharge of nine critical pollutants, protecting and restoring high quality

habitat, and sustaining high-quality terrestrial and aquatic communities. Every two years, a LaMP update is produced detailing progress, successes and continuing challenges.

The LaMP contains actions for restoration and protection to bring about improvement in the ecosystem including commitments by governments to use regulatory programs, as well as voluntary actions that could be taken by non-governmental partners. LaMP 2000 identified these actions in six ecosystem themes which recognize the interaction of land, air and water with living things, including humans. LaMP theme areas and their primary goals are: critical pollutants: to achieve zero discharge of nine persistent chemicals; habitat: to protect, maintain and restore high quality habitat; terrestrial wildlife communities: to sustain diverse, healthy wildlife communities; aquatic communities: to sustain diverse, healthy aquatic (fish) communities; human health: to eliminate risks to people from contaminants of human origin; and sustainability: to cultivate a society in which humans utilize but do not degrade the basin's natural resources.

A LaMP update in 2002 reported on the success of those actions, and identified challenges remaining to achieve established goals and ecosystem objectives. LaMP 2004 builds on the LaMP 2000 document and includes progress reports and an accomplishment summary of the 1) actions completed or underway to improve the lake, 2) challenges, and 3) next steps or changes to ongoing management actions.

The Lake Superior Binational Forum

The Lake Superior Binational Forum has been key to establishing an effective multi-stakeholder process with the Program. The Forum has held many workshops over the years to acquire necessary background information to help develop recommendations and proposals for sustainable development, human health and reducing the Lake Superior nine critical pollutants. The Forum has also published many documents on key issues relating to the LaMP.

Accomplishments include:

- initiating joint projects on chemical reductions, outreach and stewardship;
- organizing elected officials in two states, four cities, and one tribe to sign a proclamation declaring the third Sunday in July 2003 as Lake Superior Day; and
- holding workshops on household garbage burning, mercury, and riparian areas. The mercury workshop in Thunder Bay in June 2003 featured speakers on human health issues, the mercury inventory of Lake Superior sources, and on a variety of mercury reduction activities, including those in the municipal, industrial, and commercial sectors.

Next Steps include:

- establish Lake Superior stewardship and awards program;
- expand and celebrate Lake Superior Day on an annual basis;
- expand outreach on residential garbage burning;
- prepare and publish a newspaper insert; and
- continue public input sessions at Forum meetings.

A VISION FOR LAKE SUPERIOR

As citizens of Lake Superior we believe...

That water is life and the quality of water determines the quality of life.

We see a Lake Superior watershed...

That is a clean, safe environment where diverse life forms exist in harmony; where the environment can support and sustain economic development and where the citizens are committed to regional cooperation and personal philosophy of stewardship;

That is free of toxic substances that threaten fish, wildlife and human health; where people can drink the water or eat the fish anywhere in the lake without restrictions;

Where wild shorelines and islands are maintained and where development is well planned, visually pleasing, biologically sound, and conducted in an environmentally benign manner;

Which recognizes that environmental integrity provides the foundation for a healthy economy and that the ingenuity which results from clean, innovative and preventive management and technology can provide for economic transformation of the region;

Where citizens accept the personal responsibility and challenge of pollution prevention in their own lives and lifestyles and are committed to moving from a consumer society to a conserver society; and

Where there is greater cooperation, leadership and responsibility among citizens of the basin for defining long-term policies and procedures which will protect the quality and supply of water in Lake Superior for future generations.

We believe that by effectively addressing the issues of multiple resource management in Lake Superior, the world's largest lake can serve as a worldwide model for resource management.

PROGRESS TOWARD ZERO DISCHARGE

The Lake Superior Binational Program is a unique activity led by governments, industries and community groups. One of our goals is to bring about zero discharge and zero emissions of certain toxic chemicals now being released in the basin. We have an ambitious set of reduction schedules to remove nine chemicals from the waste in industrial processes, municipal discharges and from consumer products by 2020.

As the first in the chain of Great Lakes, Lake Superior is cleaner than the other Great Lakes and has a smaller population and industrial base. This makes it the logical place to pioneer projects to eliminate sources of toxic chemicals for all of the Great Lakes. Since the release of the LaMP in 2000, many chemical reduction activities have been carried out by the program and our partners. There is a complete listing in the LaMP 2002 and 2004 updates. In the following sections are highlights showing the types of projects we are doing in the Lake Superior watershed.

Reduction Schedules

In 1991, the governments around the lake announced the Lake Superior Binational Program which included an important challenge: the Zero Discharge Demonstration. The Lakewide Management Plan (LaMP) published reduction schedules which used 1990 as a baseline year and set a series of reduction targets ending with zero discharge in 2020 for mercury; PCBs; the pesticides chlordane, DDT, dieldrin and toxaphene; and industrial and combustion by-products dioxin, octachlorostyrene and hexachlorobenzene.

Mercury

Removal of mercury in consumer products has been progressing successfully. EcoSuperior in Thunder Bay, Ontario, set up a program to recover mercury switches from automobiles. To date they have collected 1,340 switches from nine auto companies in Thunder Bay, Marathon and Sault Ste. Marie. In Superior, Wisconsin, approximately 60 cars were checked by the students from Indianhead Technical College and 38 mercury switches were replaced. The Cities of Superior and Ashland set up a program with auto dealers to replace mercury switches in vehicles before they leave the lots. Members of the Bad River Reservation also carried out a program to survey abandoned cars and remove their switches, fluids and batteries. The Red Cliff Tribe has hired a mercury elimination coordinator. In addition to removing auto switches, cities throughout the basin have been carrying out thermometer swaps, thermostat collections and fluorescent bulb recycling.

Elimination of dental amalgam from the waste stream is also continuing. In Ontario, a 2003 regulation required that dental offices install dental amalgam separators to prevent mercury from getting into the sewer. In Minnesota, the Western Lake Superior Sanitary District, Hibbing, Virginia and Two Harbors installed amalgam separators. The Minnesota Pollution Control Agency has distributed additional separators to dentists in other cities. The City of Superior, Wisconsin, has offered workshops on best management practices to dentists.

Several local governments including the cities of Duluth, Minnesota; Superior, Ashland, and Douglas County, Wisconsin have passed ordinances restricting the sale and/or banning landfill disposal of certain mercury bearing products.

Energy conservation can significantly reduce the amount of mercury released from coal fired power plants. Recent energy conservation projects include the Duluth Zoo, which installed solar hot water; photovoltaic cells; and a geothermal heat exchanger that uses the earth's crust to cool polar bear and seal pools. Not only is this a benefit for the environment, but the new equipment is projected to save about \$136,000 (U.S.) annually! At the park building at Hartley Nature Center in Duluth, solar panels cover the roof, passive heat and lighting are incorporated in the design and a geothermal heat pump is the primary heating and cooling system. Grand Portage, Bay Mills and the Bay Mills Tribes are assessing wind generation feasibility. In addition, Minnesota Power constructed an innovative, high-efficiency home in a northern climate with a goal of heating it for \$300 (U.S.) per year. The Millennium Star house in Duluth incorporated energy efficient design, materials and appliances.

PCBs

The phasing out of PCBs in the basin is happening in both Canada and the United States. A canvass of seven pulp and paper mills on the north shore of Lake Superior revealed that three mills (Marathon Pulp, Smurfit Stone (closed 2003) and Norampac) are entirely PCB-free and the remaining four are phasing out their in-use and in-storage PCBs. Algoma Steel Inc. in Sault Ste. Marie, Ontario, under its Environmental Management Agreement has already destroyed 83 percent of its PCB inventory.

In the United States, the Minnesota Pollution Control Agency has evaluated transformer inventories at several utilities in the basin and found roughly 700 transformers have a moderate to high risk of containing PCBs. The current phase of the project is to remove as many of the transformers as possible, starting with those that are closest to waterbodies.

PCB Phase-Out Award

The City of Thunder Bay was recently recognized by the Great Lakes Binational Toxics Strategy for successfully phasing out its PCB containing equipment. Beginning with an inventory in 1991, the City systematically removed PCB-containing transformers, capacitors and light ballasts from service and in 2001 sent over 25,000 kilograms of materials for destruction. Today 60 municipal buildings, plants, arenas and old age homes are virtually PCB-free.

Dioxin, Hexachlorobenzene, Octachlorostyrene

Dioxin, Hexachlorobenzene and Octachlorostyrene are released during the incineration process. This is particularly true during the open burning of household wastes where lower burn temperatures do not allow for materials to be completely burned. A number of LaMP partners have engaged in outreach efforts to convince people to reduce open burning of household waste.

Pesticides

Collections of waste pesticides continued in Michigan, Minnesota and Wisconsin and the first ever hazardous waste collections were held in two Ontario towns. Thunder Bay continued to collect pesticides as part of its hazardous waste program.



Between 1999 and 2003, various pesticide collections have been carried out in the watershed. A total of 25,693 kg (56,525 pounds) of pesticides were collected. In Minnesota and Wisconsin where the type of pesticide was tallied, 28 kg (62 pounds) of aldrin/dieldrin, 280 kg (616 pounds) of chlordane, 788 kg (1,734 pounds) of DDT and 17 kg (37 pounds) of toxaphene were collected.

THE BROADER PROGRAM

Ecosystem Activities

Under the **Aquatic Communities** theme the LaMP has linked up with the Great Lakes Fishery Commission and its programs. By working together, we can **protect, restore and rehabilitate fish populations, habitats and fisheries in a more effective way.**

What's Aquatics?

- Fish populations
- Fish habitat
- Management plans
- Commercial catch

Member agencies have worked on many projects focused on Lake Superior and its watershed. Three of these projects seek to answer important research questions related to fish production and habitat supply, predator/prey relationships and restoration of native species. Because of their lakewide scope these kinds of projects are expensive and challenging to execute. It was only by forming partnerships between agencies and non-government organizations that sufficient resources, expertise, and funding were pooled to do the work. The Canada-Ontario Agreement (COA) respecting the Great Lakes Basin Ecosystem has been instrumental in funding the Ontario portion of many of these projects in 2003 and 2004.

Remote Sensing Techniques can answer important questions about the aquatic environment. Bouncing sound waves off the lake bottom or off schools of fish and recording the strength of the return signal allows scientists to count and describe things that are beyond our reach and resources to observe personally. Two separate projects have been underway for the past two years using remote sensing techniques.

As partners, the Ontario Ministry of Natural Resources, U.S. Geological Survey Lake Superior Biological Station, Great Lakes Environmental Research Laboratory of the National Oceanographic and Atmospheric Administration, the University of Minnesota-Duluth and others have developed a lake-wide acoustic assessment program to estimate fish population in Lake Superior. The information gathered will provide valuable insight into the important relationship and balance of predators (lake trout) and their prey (rainbow smelt, chubs and herring) in Lake Superior.

The second project contributes to a better understanding of the relationship between the amount of good habitat and fish production. To a fishery biologist that means answering questions such as: Does the amount of spawning habitat limit the number of walleye or lake trout produced annually? Could there be greater numbers of young fish if nursery areas were larger? How many more fish might be produced if proximity between habitats was improved or critical habitats rehabilitated?

Experts in acoustic technology are presently identifying critical spawning and nursery areas around the lake. When this is finished, fisheries managers will know what substrates (sand, clay, gravel, cobble) are present, in what quantity, at what depth and exactly where they are relative to other substrates or bottom features. This will provide information needed to manage and protect fish communities.

Radio telemetry and genetic profiling are two means of learning more about a fish population and its habitat. Rehabilitation of **lake sturgeon** is a lake wide effort involving many agencies sharing staff and resources to survey rivers where sturgeon spawned historically. Progress is being made toward establishing an understanding of the status of local populations, their use of large tributaries via telemetry and describing the uniqueness of each population through genetic profiling. This information will assist in making local plans for protection and rehabilitation where it is needed.

These projects fill in large knowledge gaps about the Lake Superior ecosystem and will allow for more informed planning and decision making as we seek to rehabilitate and sustain Lake Superior fish communities and fisheries.

With regard to the **Terrestrial Wildlife Communities** theme, activities have focused on monitoring and inventory of **rare native plants and wildlife** and of **species at risk** within the basin as well as completion of long-term and short-term ecosystem goal-setting. Besides monitoring and planning, some recovery projects have been implemented. Two examples are the *Wood Turtle Recovery Plan Implementation Project* and the *Superior Coastal Wetlands Initiative - Phase II*.

What's Terrestrial Wildlife?

- Mammals
- Birds
- Insects
- Reptiles/amphibians

Wood turtles are a small docile turtle displaying colourful markings that make them popular targets for the pet trade. They have been designated a species of "Special Concern" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); in Ontario they have been recommended for "Endangered" status by the Committee on the Status of Species at Risk in Ontario (COSSARO). Despite these listings, and the inclusion of wood turtles on CITES (Convention on International Trade in Endangered Species), this species has suffered population declines throughout their range due to habitat destruction and commercial collecting. During the spring and summer of 2002, a study was undertaken which resulted in locating wood turtle populations in 4 streams, one of which was found to have a healthy population. Therefore this stream has been proposed as a new protected area under "The Room to Grow" program. Due to the undisturbed nature of the habitat in the Lake Superior Basin, this population is one of the last refuges for the wood turtles in Ontario. The newest wood turtle project was initiated in 2003 and funded under Ontario's commitment to COA. Its focus is to locate new, and monitor existing populations for population demographics in adherence with the Ontario Wood Turtle Recovery Plan (revised, 2002).

The Superior Coastal **Wetlands** Initiative is a highly successful partnership made up of communities, tribes, non-government organizations and agencies working together to conserve wetlands in Lake Superior's Chequamegon Bay area. Through the hard work and over \$5,500,000 in matching contributions by the partners, North American Wetland Conservation Act (NAWCA) grants totaling nearly \$2,000,000 have been secured. Wetlands make up 10 percent of Wisconsin's Lake Superior watershed and play a critical role in the preservation of the region's wildlife populations. Nearly 10,000 acres of fish and wildlife

habitat were restored, enhanced or protected in Phase I of the project. Highlights included establishment of the Whittlesey Creek National Wildlife Refuge and acquisition of lands within it, the restoration and enhancement of 4,383 acres of wildlife habitat in the watershed, and the acquisition of over 2,000 acres of critical coastal wetland/bottomland forest and associated uplands in the Kakagon/Bad River Sloughs. Phase II of the Initiative is now underway and the partners are targeting priority wetlands and their watersheds. The objectives of Phase II are to acquire 1,037 acres of wetlands and 1,433 acres of upland in fee title, acquire 250 acres of wetland and 435 acres of uplands through easements, restore 249 acres of wetlands, enhance 70 acres of wetlands, and set aside 2,500 acres through a conservation stewardship program on private lands.

The focus of the LSBP regarding the **Habitat** theme is to protect, maintain, and restore high-quality habitat sites in the Lake Superior basin as well as the ecological processes that sustain them. Projects to advance these goals include: implementing watershed management and forest stewardship projects; implementing monitoring, assessment and inventory projects; and implementing habitat restoration projects including culvert replacement, dam removal, stream restoration, stream-bank improvement and wetland restoration.

What's Habitat?

- Watershed management
- Forest stewardship
- Protect and restore ecosystems
- Wetlands

An example of one of these projects in action is the *Central Lake Superior Watershed Partnership Works to Restore and Protect Lake Superior Ecosystems* facilitated by the Marquette County Conservation District. The Partnership includes concerned citizens, area watershed councils, local governments and businesses. It was established to provide watershed planning services, stream restoration, habitat protection, zoning improvement and other services related to ecosystem protection and restoration.

The Watershed Partnership has completed some notable habitat restoration projects including many on the Salmon Trout River near Marquette. The Salmon Trout River is the only river on the south shore of Lake Superior that supports a naturally reproducing population of coaster brook trout. However, degradation has taken place over many years due to sedimentation from many different sources. Over the past three years the Partnership, with help from the United States Fish and Wildlife Service, the Lake Superior Basin Trust, the Huron Mountain Club and the U.S. EPA's Great Lakes National Program Office, has completed projects including bridge installations, critical erosion control, bottomless arch culverts and sediment traps.

The Partnership has also produced two land use planning tools. The first is a document, "Your Upper Peninsula: A Guide to Planning for Tomorrow's Shorelines," which was distributed to every township and county in the Upper Peninsula. The second is an example of wording that communities could use to produce legislation designed to provide a buffer between the water and the land in order to protect water quality and shoreline habitats.

Remedial Action Plans for Areas of Concern

The GLWQA amendments of 1987 called for the federal governments of Canada and the United States to cooperate with state and provincial governments in the development of Remedial Action Plans (RAPs) for designated degraded areas (Areas of Concern (AOCs)) in the Great Lakes basin. There are eight AOCs in the Lake Superior basin; four in Canada, three in the U.S., and one shared between the two countries along the St. Marys River.

The RAPs and LaMPs are similar in that they both use an ecosystem approach to assess and remediate environmental degradation of the 14 proscribed beneficial use impairments. RAPs, however, encompass a much smaller geographic area, concentrating on an embayment, a single watershed or stretch of a river. The main focus of a RAP is on environmental degradation in that specific area, and remediating the beneficial use impairments locally. In most AOCs, the impairment (e.g. habitat loss) can be related to or connected to local activities. On the other hand, some fish advisories are attributable to the lakewide concentrations of persistent, bioaccumulative toxic chemicals.

Forging a strong relationship between the LaMPs and the RAPs is important to the success of both efforts. The AOCs, in many cases, serve as point source discharges to the lake as a whole. Improvements in the AOCs will therefore, eventually help to improve the entire lake. As much of the expertise about the use impairments and possible remedial efforts resides at the local level, cooperation between the two efforts is essential in order for the LaMPs to remove lakewide impairments.

SUSTAINABILITY

When we consider the risks associated with environmental problems in the Lake Superior basin, we rarely look beyond fixing existing problems. Watersheds can be rehabilitated; municipalities, industries, and citizens can be held accountable; or the air can be purified and the threat seems to “go away.” However, in order to ensure that these problems do not recur, a more fundamental puzzle must be solved: How should citizens around Lake Superior sustain their society now that we know just how easy it is to damage the environment upon which we depend?

The Lake Superior Binational Program is interested in more than protecting and restoring the ecosystem or reducing toxic chemicals produced and released in the basin. In developing a management plan for Lake Superior, government agencies have sought to develop regional sustainability to restore and preserve a range of social, economic, and environmental values. This emphasis provides a basis for assessing where we are as a society in the watershed, seeing how close we are to achieving our “Vision for Lake Superior,” and suggesting how to sustain an ecosystem in the Lake Superior watershed that supports thriving communities in the future.

Various groups interpret the concept of sustainability differently but, at the very least, it means that we must conserve existing resources so that future

residents are not left without access to vital elements of daily life. To achieve a sustainable society in the Lake Superior basin requires us to be flexible and responsive to changes in the social, economic, and environmental conditions of the region. It also requires us to engage in ongoing education and to measure progress about the natural resources we need, the quality of life in the area, resource consumption patterns, citizens' awareness of their ability to contribute to sustainability, and economic vitality. As an initial attempt to measure these indicators, we have examined a wide range of existing databases to determine trends in our progress toward sustainability. Overall, research to-date reinforces the fact that humans must be seen as a part of, rather than apart from the Lake Superior ecosystem.

In addition to measuring indicators of sustainability, the Lake Superior Binational Program has initiated a “Community Awareness Review and Development” project to survey residents of the basin, identify community priorities, and begin a person-to-person dialogue regarding sustainability issues. We are examining the status of “Sustainability Education” in the region, as well as the causes of urban and rural sprawl in the watershed. More importantly, there is increasing evidence that grassroots initiatives are at the heart of successful gains in sustainable development. Consequently, we have partnered with several local and regional groups to facilitate homegrown self-reliance in the quest for sustainability. For example, by assisting local communities to stretch existing resources through conservation and recycling, we hope to show how economic growth is directly tied to ecological sustainability.

Communities play a critical role in sustainable development and the LSBP provides an important means for coordinating our efforts.

WHAT CAN YOU DO TO HELP?

We often hear from citizens that it is beyond their control to reduce critical pollutants, restore wildlife habitat or build sustainable local economies. Your everyday choices as a consumer, investor or volunteer, however, can help to protect and restore Lake Superior.

The backyard burning of household trash produces dioxin that enters the food chain and contaminates food sources all over the continent. Individuals can prevent this through recycling, reducing their waste and utilizing landfills instead of burning.

You can buy mercury-free products. Become involved in projects that recycle mercury found in fluorescent lamps, thermometers, dental amalgams, thermostats and button batteries. You can help remove hundreds of kilograms per year from the waste stream and prevent it from entering the air and water of the Lake Superior basin.

When constructing or renovating homes and other buildings, investigate and buy products made from recycled materials.

Become involved in community-based groups which are busy restoring small watersheds and habitats. Everyone has a role to play in the Lake Superior Binational Program. If you are a citizen, contact the Forum (at 1-888-301-LAKE

(1-888-301-5253)) and learn about what you can do to help. Participate at the level you wish but please get involved!

If you are a government agency at any level, including tribes and tribal authorities, a First Nation or indigenous peoples organization or any organization whose primary purpose is environmental restoration, protection, management, or health, and who have an ability and commitment to implement the LaMP, contact us. We need your help!

CHALLENGES AHEAD

Although there are many success stories to tell, ongoing vigilance and hard work are necessary to combat the issues still facing the Lake Superior ecosystem. Some actions include:

Critical Pollutants:

- Continue reduction of persistent bioaccumulative toxics (PBT) into the lake, including mercury emissions from electrical utilities and mining operations in the basin
- Clean up the industrial legacy of contaminated bottom sediments
- Measure and report against the 2005 toxics reduction target

Habitat:

- Reflect basin-wide goals and strategies in land use decisions, and monitor land use change
- Develop watershed management plans to address threats associated with development and forest fragmentation
- Expand the geographic database and projects associated with the Lake Superior Decision Support System, including public information kiosks

Aquatic Communities:

- Ensure the maintenance of healthy aquatic communities on rivers with, and those identified for hydro power development
- Complete around the lake mapping of near shore fish habitat
- Protecting critical lake and tributary habitats

Terrestrial Wildlife:

- Develop and implement biological community monitoring programs
- Monitor herptiles and work on medium sized carnivores

Water:

- Address threats to protect Lake Superior from inter-basin transfers and exports

- Support strategies that protect drinking water sources, including groundwater
- Reduce storm water impacts on lakes, streams, and wetlands

Sustainability:

- Help communities to live and work sustainably
- Identify community priorities, needs and opportunities for participation

General:

- Enhance resources available for restoration/protection, development and maintenance of long-term monitoring programs, and public outreach
- Develop a consensus on uniform monitoring protocols and techniques.
- Prevent, control and monitor exotic terrestrial and aquatic species
- Target restoration opportunities and monitoring (land, water, and biological) in watersheds that score lower in relative water health, including AOCs



Even though the idea of sustainability has long provided a foundation for the Lake Superior Binational Program, it is difficult to decide how we should go about facilitating sustainable practices on the ground. To promote practices that provide for sustainable outcomes requires consideration of a variety of issues that go beyond the prevention of pollution. To produce a truly sustainable society, we must grapple with issues that are more general in scope than those associated with other aspects of the LaMP. Though progress

has been made, we are still a long way from promoting a full range of social and economic initiatives that will make for a sustainable future.

Future accomplishments will be dependent upon commitments by governments, NGOs and individuals to support the science, resource management and legislative activities that will protect and restore the basin.

Monitoring the environment is key to understanding the Lake Superior ecosystem - how it functions and changes. In addition to ongoing long-term monitoring programs, priorities which will be the subject of special monitoring efforts in 2005 and 2006 include obtaining additional information related to contaminant levels in fish, air and open water; land use change; prey fish; lower trophic levels; invasive species and fish community changes; and herptiles (reptiles and amphibians).

Lake Superior Watershed



Photo Credits: Dave Hansen, Minnesota Extension Service; Wisconsin Division of Tourism; Robert F. Beltran, USEPA. All photos are courtesy of the US EPA Visualizing the Great Lakes web site.

For More Information

For further information about the Lake Superior Binational Program, please view the Lake Superior Binational Program website at www.binational.net. As the Program has many partners, additional reports and documents relevant to people interested in the Program may be found on the Partner Agency Sites. Links to those sites can also be found on binational.net or contact:

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Information Kiosks

Check out the LSBP Information Kiosks found at the following locations:

- Great Lakes Aquarium - Duluth, MI
- Northern Great Lakes Visitors Center - Ashland, WI
- Watersmeet Visitor Centre, Ottawa National Forest - Watersmeet, MI
- Terry Fox Memorial Visitors Centre - Thunder Bay, ON
- Bush Plane Heritage Museum - Sault Ste. Marie, ON