

Chapter 6

Status of Habitat in the Lake Superior Basin Progress Report

This chapter will be updated in 2004 as part of the new, consolidated ecosystem chapter for inclusion in LaMP 2006.



Cove Point beach of Lake Superior, Lake Superior, MN
Photograph by Dave Hansen, Minnesota Extension Service

Lake Superior Lakewide Management Plan
2004

Chapter 6 Contents

- 6.0 INTRODUCTION6-1
- 6.1 LaMP 2002 TO 2004 ACCOMPLISHMENTS.....6-1
 - 6.1.1 Programmatic Accomplishment Highlights to Protect and Restore Lake Superior Habitat.....6-1
 - 6.1.2 Summary of Local Management Activities to Protect and Restore Lake Superior Habitat6-8
- 6.2 CHALLENGES FOR 2004 TO 2006.....6-10
- 6.3 NEXT STEPS FOR 2004 TO 2006.....6-11

Chapter 6

Status of Habitat in the Lake Superior Basin

6.0 INTRODUCTION

The Habitat Committee is an historic and unique collaborative endeavor by Lake Superior resource managers to protect, maintain, and restore high-quality habitat sites in the Lake Superior basin and the ecological processes that sustain them. The Committee is comprised of technical personnel from federal, state, and provincial resource agencies and tribal authorities. This report highlights the actions taken to protect and restore habitat in the Lake Superior basin since the release of the LaMP 2002 document.

As directed by the Lake Superior Task Force and Work Group, four chapters of the LaMP 2000 document, Habitat, Aquatics, Terrestrial Wildlife, and Invasive Species, will be consolidated into one chapter. The resulting document will present information on the characteristics, status, and trends of living natural resources in the Lake Superior basin in a coordinated fashion. For basin outreach, the final document will be distributed to all biologists working in the Lake Superior Basin for their use and reference. The final document will be available for public review by Summer 2004.

6.1 LaMP 2002 TO 2004 ACCOMPLISHMENTS

6.1.1 Programmatic Accomplishment Highlights to Protect and Restore Lake Superior Habitat

The accomplishments described below reflect state, provincial, federal, tribal, and non-governmental efforts to achieve the goals of protection and restoration of habitat. This summary in no way encompasses all efforts in the basin, but rather is representative of significant accomplishments made since the release of the LaMP 2002 report. One of the tasks of the Habitat Committee is to compile and maintain a comprehensive list of actions and projects that identify, protect and restore habitat in the Lake Superior basin.

Lake Superior Decision Support System and Land Use Primer

Land use has evolved to be one of the most important issues in ecosystem management. The Lake Superior Land Use and Decision Support project consists of data and interpretive materials that address land use issues in the Lake Superior basin. These decision support materials were developed for use by local governments, regional planning agencies, individual resource management units, advocacy groups, educational and interpretive organizations, and individual citizens.

The primary goal of the project was to provide users with data and practical tools they can apply to local land and resource decisions in a context of basin-wide objectives for long-term sustainability and stewardship. Local units of governments were asked to

assess the support tool using real land use issues. The tools are also of value to interpretive and educational institutions to foster public awareness of land use issues, since the real impact of forestry and development results from the cumulative effects of a large number of small land use decisions. The data are available in downloadable form or as interactive maps. The information is also available on CD and includes a Land Planning Primer developed in conjunction with the University of Minnesota Center for Rural Design. The Primer contains information on creating community-based land plans, developing landscape design strategies, and links to numerous data collection and planning resources. When integrated across time and space, these land use decisions have major impacts on the basin's resources. The Natural Resources Research Institute in Duluth, MN headed up this project in partnership with Minnesota DNR, the Habitat Committee of the LSBP, Minnesota Sea Grant, University of Minnesota Center for Rural Design, and ESRI, Inc.

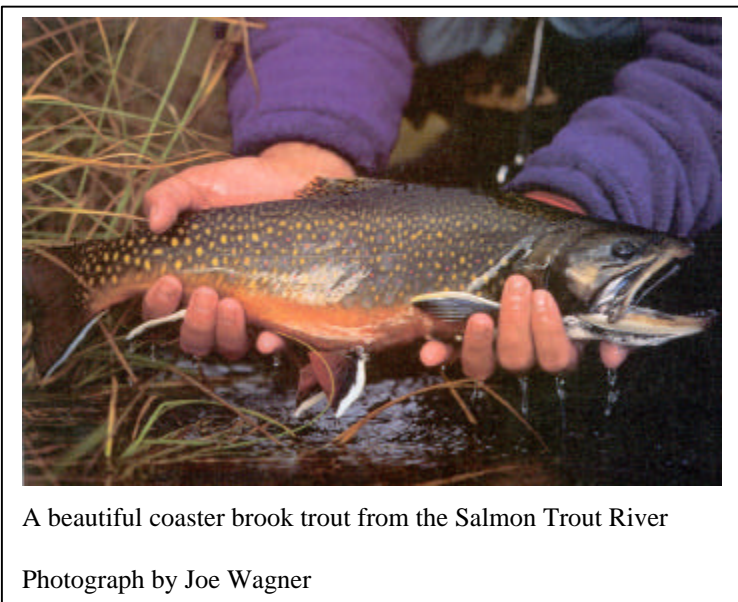
More information is available at <http://www.nrri.umn.edu/lsgis>.

Central Lake Superior Watershed Partnership

The Central Lake Superior Watershed Partnership was established in Marquette County, Michigan, to provide watershed planning services, stream restoration, habitat protection, zoning improvement and other services related to ecosystem protection and restoration. The Partnership is facilitated by the Marquette County Conservation District and includes concerned citizens, area watershed councils, local governments and businesses.

The Partnership has 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 planning tool was a model riparian buffer ordinance designed to protect water quality and property values.

The Watershed Partnership has also 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.

More information is available at <http://www.superiorwatersheds.org/>



A typical eroding culvert crossing in the Salmon Trout River Watershed
Photograph by Joe Wagner



One of several new, clear-span bridges that control erosion and allow fish migration
Photograph by Joe Wagner

The Status Of A Proposed National Marine Conservation Area In Lake Superior

The Lake Superior Binational Program (LSBP) promotes increased pollution prevention measures, special designations, and enhanced regulatory frameworks. In the early developmental stages of the program, one task of the Lake Superior Working Group was to identify opportunities for special designations which could apply to the lake basin --- to celebrate the unique and pristine character of the freshwater ecosystem and to maintain the integrity of this freshwater ecosystem. One such designation topped the list --- Parks Canada's national marine conservation area (NMCA) program.

National marine conservation areas (NMCA's) are established to protect and conserve representative marine areas for the benefit, education and enjoyment of the people of Canada and the world. They are managed for ecologically sustainable use to ensure lasting benefits of coastal communities. NMCA's also promote an understanding of the marine environment through research programs and monitoring initiatives and provide opportunities for education and public outreach. A Lake Superior NMCA could help achieve LSBP program objectives of enhanced awareness of a *Superior* environment, increased protection for critical habitats and endangered species while strengthening the existing management regime.

Between 1993 and 1995, scientific and technical data on the Lake Superior marine region was compiled and analyzed. By 1995, Parks Canada identified its preferred location for a

feasibility study in the western end of the lake. A Memorandum of Understanding between the Federal and Provincial Governments was signed in 1997, launching a consultation process that would ultimately determine whether or not there was public support for the initiative.

Based on public consultations during a three-year feasibility study process, a regional stakeholder committee concluded in July 2000 that there was strong public support for the proposal. An independent review of this work completed the following year, recommended proceeding immediately with the establishment of an NMCA.

In June 2002, Parks Canada presented its vision for the development and operation of a Lake Superior NMCA in a series of north shore open houses. This vision was supported by 91% of the respondents, setting the stage for Federal-Provincial negotiations. On September 1, 2003, the Premier announced that Ontario would dedicate the lands and lakebed to create the NMCA.

The next step is the completion of a Federal- Provincial Agreement respecting the establishment of the NMCA. The Lake Superior NMCA would be the first legislated under the new *Canada National Marine Conservation Areas Act*, assented to in June 2002. It would also be the first NMCA established under Canada's Action Plan for new national parks and marine conservation areas.

The Lake Superior NMCA is proposed to be over 10,000 km² and would represent the largest freshwater protected area in the world. Its establishment would be a remarkable achievement for Canada and Ontario, and would signal a firm commitment to protect and conserve freshwater ecosystems for the enduring benefit of future generations.

Interactive Kiosks Available to Public

Public education is an important principle recognized by the Habitat Committee to help achieve its goals to protect and restore fish and wildlife habitat in the Lake Superior basin. Pictures, maps and information on the special places and habitat of Lake Superior teach people the value of protecting the resource for future generations and in maintaining a sustainable economy. The Habitat Committee has been working with local governments around the basin to make interactive computer kiosks available to the public. The kiosks consist of a touchscreen computer using Site Explorer© software that allows people to access a variety of information on Lake Superior's wildlife, special places, and significant habitat. An important source of this information comes from another of the Habitat Committee's long-term projects, the Lake Superior GIS database and Decision Support System. There were four kiosks operating in 2003 in the following locations: Great Lakes Aquarium, Duluth, MN; Great Lakes Visitor Center, Ashland, WI; Thunder Bay Visitor Centre, Thunder Bay, ON; and Ottawa National Forest Visitor Center, Watersmeet, MI. A fifth Kiosk was also presented to the City of Sault Ste. Marie, Ontario by the Habitat Committee in September 2003.

Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA)

The Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA) is a commitment by the governments of Canada and Ontario to cooperate and coordinate their efforts to restore, protect and conserve the Great Lakes Basin ecosystem. It builds on the actions taken through previous agreements, and focuses priorities for future actions.

The COA recognizes the need to continue to tackle the most pressing issues - such as the clean up of the five remaining Canadian Areas of Concern on Lake Superior, increased binational cooperation on restoration, and the reduction of harmful pollutants. The Agreement can also be amended to respond to emerging issues. The COA recognizes the need for governments to help those at the local level tackle many pressing problems. In this way, community involvement is mobilized and the Lake Superior basin ecosystem benefits through actions targeted to meet specific area needs. This agreement has provided funds to complete a number of habitat related projects in the basin including habitat inventory and assessment projects and the stream rehabilitation effort described below.

Blind and Wildgoose Creek Rehabilitation in Thunder Bay, ON

Blind and Wildgoose Creeks are small tributaries of Thunder Bay with rainbow trout and potential coaster brook trout populations. Habitat in the lower reaches of both creeks has been degraded through flooding and improper water crossings. A rehabilitation plan has been prepared for both streams. The goal of increasing stream productivity in the lower reaches and removing impediments to fish migration is the focus of this project scheduled for completion in 2006. The plan also calls for one year of post rehabilitation monitoring on each of the tributaries.

In 2002 and 2003, perched culverts on Wildgoose Creek were replaced and stream sections were remediated. These modifications enhanced upstream fish passage and stabilized the lower reaches of Wildgoose Creek. Surveys of Blind Creek were also undertaken in the lower reaches where problematic sections had been identified. Engineering studies have now been completed and construction is scheduled for 2004.

St. Louis River Citizens Action Committee (CAC).

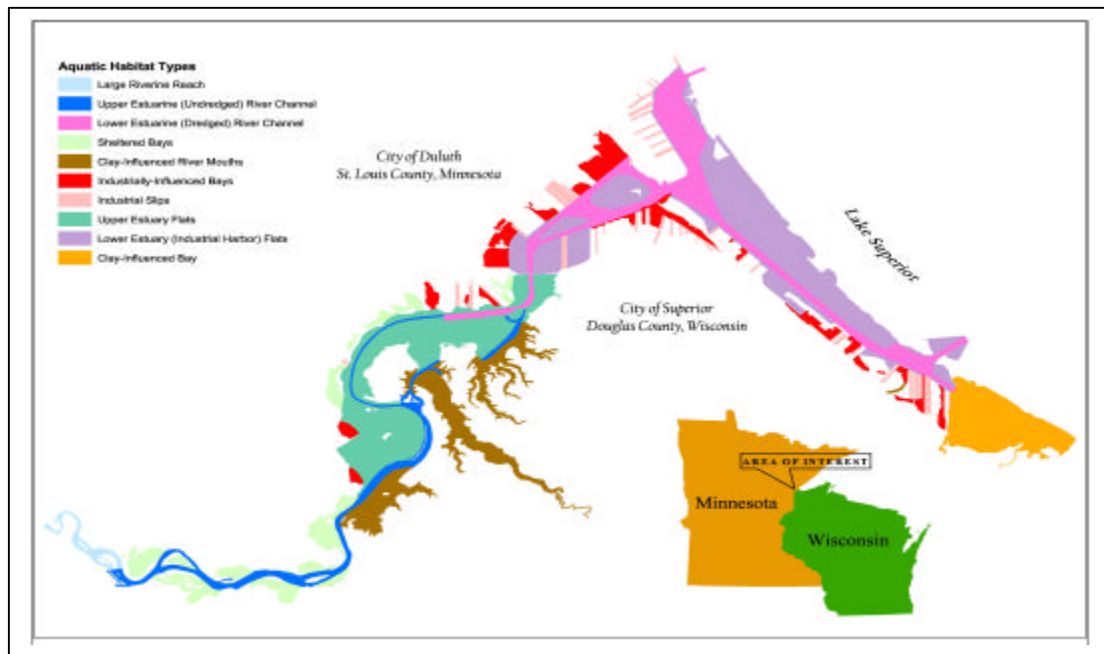
The St. Louis River Area of Concern (AOC) includes 39 miles of the St. Louis River below Cloquet, MN, the river estuary, Duluth-Superior Harbor, the lower Nemadji River and the near-shore waters of Lake Superior. Some of the impairments in the AOC not only include the physical loss and degradation of habitat but many years of impairment from industrial discharges, untreated wastewater, non-point source pollution and other disposal practices. Many of these pollution-based impairments are being addressed through the implementation of a Remedial Action Plan for this AOC.

The St. Louis River CAC worked with local, state and federal agencies to develop an overarching Habitat Plan that will guide protection and restoration of habitat in the AOC

for many years to come. The Habitat Committee of the CAC included the following in the plan:

1. A detailed and comprehensive synthesis of existing information.
2. An estuary-wide guide for resource management and conservation that would lead to adequate representation, function, and protection of ecological systems in the St. Louis River, so as to sustain biological productivity, native biodiversity, and ecological integrity.
3. A list of conservation and management objectives that reflects a consensus of the Habitat Committee members.
4. A suite of specific, obtainable, prioritized conservation and management actions that address specific threats.

More information is available at <http://www.stlouisriver.org/>



Map produced for St. Louis River Habitat Plan

Torch Lake River Superfund Site

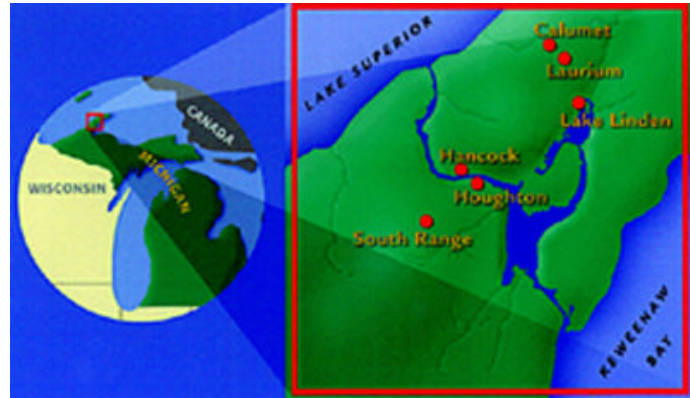
Cleanup Project Creates New Plant and Wildlife Areas

U.S. EPA's cleanup and restoration efforts on the Torch Lake Superfund site made excellent progress in 2003. Refuse from copper production activities was covered by soil caps and erosion protection was installed in the cleanup areas. Also in 2003, U.S. EPA enlisted assistance from science teachers and students from four area high schools to help monitor plants and wildlife as the cleanup areas recover.

Background

Torch Lake is located on the Keweenaw Peninsula which roughly divides Lake Superior's

southern shore into its eastern and western halves. The problem encountered in this area is widely scattered deposits of copper mining waste materials accumulated over more than 100 years of mining, milling, smelting, and recovery activities. These wastes occur both in upland areas and in the lake and occur in four forms: poor rock piles, slag and slag enriched sediments, stamp sands, and abandoned mine slurry settling ponds. The associated contaminants include copper, mercury, arsenic, lead, chromium, and other heavy metals.



Source: U.S. EPA

Restoration Activities

U.S. EPA began cleaning up the area in 1988 when the Agency removed dozens of buried and sunken barrels containing toxic waste. Torch Lake was placed on the Superfund list in the 1990's and clean up activities began focusing on removing copper wastes and restoring habitat. In 1999, U.S. EPA began work on cleaning and restoring 800 acres of contaminated sands and slag areas. This work was completed in 2002. Work was begun on additional sites in 2003. Cleanup activities at all of these sites includes:

- Leveling and grading the areas to be covered;
- Constructing waterways and water diversions;
- Creating access roads;
- Covering the contaminated sand with 6 inches of clean sandy soil and seeding;
- Putting large rocks or rip rap on shorelines for erosion protection; and
- Installing chain link fences for site security where necessary.

These cleanup activities have created new terrestrial and aquatic habitat. U.S. EPA formed a team of scientists to study the effect the cleanup was having. The scientists found plenty of life on the restored areas. Small mammals such as chipmunks, voles, and mice were live-trapped on the cleanup sections. Anywhere from 11 to 19 different bird species were also observed. Only six or seven species were planted on top of the soil coverings, but the survey identifies 76 different plant species growing there. This indicated that the cleanup process is successful, as barren, lifeless sand is turned into thriving habitat.

6.1.2 Summary of Local Management Activities to Protect and Restore Lake Superior Habitat

In addition to the project highlights listed above, a number of other local and regional activities to protect and restore habitat were completed in the past two years.

Habitat Restoration and Rehabilitation

This category includes activities that improve habitat features or processes and benefit native plant, animal communities or species as the result of direct management actions.

- The Keweenaw Bay Indian Community (KBIC) located on Lake Superior's Keweenaw Bay in Michigan's Upper Peninsula completed construction of a large arched culvert that allows fish passage into Zeba Creek's 3.2 sq. mile upper watershed area. Installation of the eight-foot tall aluminum culvert was a product of collaboration by many partners and will allow the Tribe's stocked fish as well as indigenous fish species access to Lake Superior, greatly enhancing the fishery in Keweenaw Bay.
- A power dam was removed from the Iron River, about 1.5 miles above where it enters Lake Superior. What had been a warm water impoundment as large as 144 acres was restored to 1.2 miles of trout stream. The original hydropower dam was constructed in 1923 and destroyed by a flood in 1946. A replacement dam 56 feet high was built slightly downstream in 1947, and was operated by Northern States Power (NSP) until 1985, when it was again damaged by flood. In 2001, the remaining barrier was removed from the sandstone outcrop known as Orienta Falls, which old newspaper articles called the most scenic site in Bayfield County. At Orienta Falls, water drops 15 to 20 feet over a distance of 200 feet. A low-head barrier dam was also constructed to keep sea lamprey out of the 56 miles of trout streams in the Iron River watershed. The river is returning to a more natural state and lake-run salmonids are reproducing once again.
- The U.S. Forest Service (Hiawatha, Ottawa, Chequamegon/Nicolet and Superior National Forests) accomplishments reported since the LaMP 2002 include 20.3 miles of stream restoration, 20 acres of riparian habitat improvement, 466 acres of inland lake restoration, 1440 acres of moose habitat restoration, 350 acres of fire-dependent ecosystem restoration, and 79 acres of wetlands restored. Sediment control efforts included replacement of 29 culverts, construction of four trail and one road bridge, and stabilization of six cut/fill sites resulting in a total estimated 225 tons of sediment reduced per year.

- The U.S. Fish and Wildlife Service planted 10 acres of trees as a riparian forest restoration project within the Whittlesey Creek National Wildlife Refuge. They also initiated a purple loosestrife control project on the refuge through biological control and mapped habitat types within the refuge boundary.
- In May 2001, the U.S. Fish & Wildlife Service designated critical habitat for the Great Lakes piping plover, a federally endangered species. Critical habitat receives protection under section 7 of the Endangered Species Act through the prohibition against destruction or adverse modification with regard to actions carried out, funded, or authorized by Federal agencies. Critical habitat was designated throughout all of the Great Lakes basins. Within the Lake Superior basin five critical habitat "units" were designated totaling 73 miles (120 km) of shoreline in Michigan, Wisconsin, and Minnesota. Once found breeding in many places along Lake Superior, piping plovers currently nest in only two shoreline areas. Protection of critical habitat will facilitate recovery and return of piping plovers to many historical breeding sites on Lake Superior and throughout the Great Lakes.

Watershed Management and Forest Stewardship Projects

- A project is being implemented in Wisconsin to develop best land management practice guidelines for the Wisconsin portion of the Lake Superior basin in order to reduce non-point pollution and stream damage. The project was funded by the Great Lakes Protection Fund and is being implemented by the Ashland, Bayfield, Douglas and Iron Counties' Land and Water Conservation Department with assistance from the Wisconsin DNR.
- The U.S. Forest Service submitted two draft National Forest Plans and Environmental Impact Statements and two Notices of Intent to prepare Forest Plans. These are expected to be final by the LaMP 2006 report.

Special Designations and Acquisition Projects to Protect Habitat

- A grant was given to the St. Louis County Soil and Water Conservation District to acquire an easement on Miller Creek in Duluth, MN.
- The Chocolay Township in Michigan has passed a milestone dune protection ordinance defining building setbacks, limiting tree removal and prohibiting such once common practices as bulldozing the dunes to provide better views of Lake Superior.
- In June 2002, Parks Canada presented its vision for the development and operation of a Lake Superior National Marine Conservation Area (NMCA) in a series of north shore open houses. This vision was supported by 91% of the

respondents, setting the stage for Federal-Provincial negotiations. On September 1, 2003, the Ontario announced that it would dedicate the lands and lakebed to create the NMCA.

Monitoring, Assessment, and Inventory Projects

- The Wisconsin DNR is supporting the Lake Superior Alliance in a project called the Bayfield County Shoreline Protection Campaign. The project includes a survey of shoreline communities in Bayfield County, information on Lake Superior's unique shoreland ecosystems, informational meetings, and the development of a working group to move proposed zoning and planning provisions to the appropriate government units.

Education and Public Involvement

- The Wisconsin DNR is assisting the Lake Superior Research Institute (LSRI) with a project based on the University of Connecticut Extension's Nonpoint Education for Municipal Officials (NEMO). The goal of the project is to provide community planners with information about the connection between land use, non-point sources of pollution, and impacts on water quality.
- A project to provide educational programming and materials to support a Lake Superior watershed health initiative is being implemented through the Lake Superior Basin Education Partnership established between the Wisconsin DNR, LSRI and the University of Wisconsin Extension (UWEX). The project will result in a GIS layer of brook trout spawning habitat and will provide educational programming on watershed factors affecting this habitat.
- UWEX, Wisconsin DNR, and the Lake Superior Binational Forum sponsored the Lake Superior Water and Land Symposium on the Bad River Reservation in September 2003. The symposium delivered information on planning for habitat protection in the Lake Superior basin to more than 300 government officials, natural resource people and watershed groups.
- In Marquette, MI, the Central Lake Superior Watershed Partnership hosted a conference titled "Partnering with Upper Peninsula Land Conservancies to Achieve Your Conservation and Community Goals" in November 2002.

6.2 CHALLENGES FOR 2004 TO 2006

The long-term goal of the Habitat Committee is to support a variety of activities that identify, protect, and restore high-quality habitat sites in the Lake Superior basin and the ecosystem processes that sustain them. The Committee has identified a number of challenges to meeting this goal.

- Provide ongoing support and maintenance of the geographic database and projects associated with the Lake Superior Decision Support System. This information is essential to the effective implementation of the LaMP as it provides natural resource information to decision makers.
- Fill information gaps on the status and trends of habitat conditions in the Lake Superior basin and developing management recommendations to protect and restore important habitat sites.
- Encourage active participation on the Habitat Committee by members of agencies and organizations that are doing habitat work in the basin.
- Educate the public on important habitat and ecological resources in the Lake Superior basin by expanding the use of interactive information kiosks.

6.3 NEXT STEPS FOR 2004 TO 2006

During the next two years, the committee plans to complete the following items:

- Solicit and enter information to update information on projects listed in the LaMP 2000 and include new projects such as those highlighted in this report.
- Identify personnel to maintain, update and expand the Lake Superior GIS project data and databases and respond to information requests.
- Maintain the current kiosk network and update information in the databases.
- Expand membership and participation in the Habitat Committee with representation from all agencies and organizations that are doing habitat work in the Lake Superior basin.
- Maintain and update the Habitat Committee’s web site.
- Consolidate the Ecosystem Chapter of LaMP 2000.

Members of the Habitat Committee	
Co-chairs:	Marilee Chase, Ontario Ministry of Natural Resources Ann McCammon-Soltis, Great Lakes Indian Fish and Wildlife Commission
Members:	Mike Ripley, Chippewa Ottawa Resource Authority Marc Slis, Keweenaw Bay Indian Community Joan Elias, National Park Service Robert Morriseau, Fort William First Nation Brigitte Collins, Canadian Wildlife Service