

**Lake Superior Binational Program
ECOSYSTEM GOALS FOR LAKE SUPERIOR**

Goal	Sub-Goal		Other Strategic Outcomes Achieved	Goal Type*
Strategic Outcome # 1: Diverse, healthy and self-sustaining native plant and animal communities exist in the Lake Superior basin.				
1		Identify and restore native communities where they are degraded.		IG, S
	Subgoal	Inventory and assess impacts to degraded habitats and communities.	2	
	Subgoal	Develop and distribute GIS information on ecosystem types, conditions and trends, including coastal wetlands and riparian areas, and identify where restoration can occur.		
	Subgoal	Restore degraded wetlands.		
	Subgoal	Restore or protect native riparian forest types.		
	Subgoal	Restore or protect coastal communities (rocky shoreline, beach, dune, coastal wetlands).		
	Subgoal	Where possible, restore or protect aquatic connectivity in Lake Superior tributary streams.		
2		Identify and protect a system of representative, high quality ecosystems through Lake Superior basin land protection programs.		IG, S
	Subgoal	Complete comprehensive, systematic biological surveys in the watershed to identify remaining high-quality natural communities.	2, 6, 8	
	Subgoal	Engage landowners as partners in protecting important habitat.	6	
	Subgoal	Use special designations to protect important habitat on public lands and waters.		
3		Reduce the rate of land conversion that results in the loss of plant and animal habitat and habitat fragmentation.		
	Subgoal	Engage regional planners and policy makers at all levels of government to support the adoption of measures that maintain or improve ecosystem services and that prevent loss of habitat by conversion and fragmentation.		
	Subgoal	Develop and put into place a policy that results in zero loss of wetland areas and function within the basin.		
4		Maintain existing genetic diversity and population integrity.		
	Subgoal	Plans are in place to detect and prevent disease outbreaks.		
	Subgoal	Encourage the cataloging of the basin's genetic diversity.		

Goal	Sub-Goal		Other Strategic Outcomes Achieved	Goal Type*
5		Manage the harvest of plant and animal resources to ensure diverse, healthy, and self-sustaining native plant and animal communities.		
Strategic Outcome #2: A program is in place to monitor the abundance, distribution, and health of plant and animal populations and communities in the Lake Superior basin.				
1		Institute a long-term Lake Superior basin-wide program to monitor ecosystem health (as described in the LaMP) utilizing standardized methodology.	1, 3, 6	M
	Subgoal	Explore the development of inventory, monitoring, assessment and reporting tools for the basin and how they might be implemented.		C, P
	Subgoal	Develop, test, and implement standardized monitoring protocols, sampling procedures and data handling for ecological indicators to enable Binational Program agencies to report on the status of the basin's ecosystem health.	6, 8	
		Neotropical Migratory Birds		
		Reptiles and Amphibians		
		Soil Invertebrates		
		Medium-Sized Carnivores		
		Fish and Aquatic Invertebrates		
		Land Use Change and Development Impacts		
		Exotic and Invasive Species		
		Rare Resources		
		Culturally Important Resources		
		Over Abundant Species		
		Indicators of Contaminants in the Environment		
		Indicators of Global Climate Change	7	
Strategic Outcome #3: Native species populations are at appropriate levels throughout the Lake Superior basin.				
1		Complete comprehensive, systematic biological surveys in the watershed to identify locations of rare plants and animals.	6	IG

Goal	Sub-Goal		Other Strategic Outcomes Achieved	Goal Type*
2		Encourage the development and implementation of species recovery plans for species at risk or species of concern.		P
3		Work with partners to develop a common understanding of native species overabundance, and develop and implement plans to control overabundant species.	6	C
4		Encourage the appropriate use of native species for all projects requiring vegetation restoration.	1	C
	Subgoal	Develop sources of native plants and seeds in an ecologically appropriate manner throughout the Lake Superior Basin for use in vegetation restoration.	6	S, C
	Subgoal	Establish standards of native species propagation and use as well as definitions of seed zones.		
	Subgoal	Develop a list of critical native species that are regionally / habitat specific and ecologically appropriate.	6	C
	Subgoal	Educate citizens in the Lake Superior Basin about the importance and appropriate use of local native plants in restoration and landscaping projects.		C
Strategic Outcome #4: Harmful invasive species are reduced and, where possible, eliminated from the basin.				
1		Inventory the extent of exotic, invasive species and implement control measures.		
	Subgoal	Complete an inventory and control plan for priority exotic species at the scale of the Lake Superior basin.		
	Subgoal	Encourage all agencies to develop and implement treatment programs for priority species.		
Strategic Outcome #5: No new non-native, harmful invasive species are introduced into the Lake Superior basin.				
1		Establish and implement best management practices for a range of activities (e.g., forestry, recreation, intra-lake shipping) to prevent the introduction and spread of exotics.	4	P,S
2		Develop a guidance document for agencies' vegetation restoration for projects in the Lake Superior basin.	6	C
3		Support research and policies that will prevent new harmful introductions and the spread of pests and disease causing pathogens.		
	Subgoal	Support ballast water treatment technology research and adoption.		
	Subgoal	Encourage effective certification programs that reduce the risk that new non-native, harmful invasive species are introduced into the basin.		

Goal	Sub-Goal		Other Strategic Outcomes Achieved	Goal Type*
Strategic Outcome #6: Partnerships among natural resource management agencies, environmental agencies, and non-agency stakeholders are strengthened and broadened.				
1		Develop information and educational material to assist local land use decision makers in implementing Binational Program goals through land use planning.	8	C
	Subgoal	Have a Binational Program educator on staff to present material to local governments and decision makers highlighting linkages between land use and ecosystem health.		C
2		Support appropriate public and technical fora to provide opportunities for researchers, resource managers and the public to exchange information.	8	C
3		Inform and educate senior decision makers about how their actions move the Lake Superior basin toward "A Vision for Lake Superior."		C
	Subgoal	Develop a communications plan.		
	Subgoal	Implement the communications plan.		C
4		Complete a film about Lake Superior.		C
Strategic Outcome #7: Human activities in the Lake Superior basin minimize the contribution of greenhouse gases to the environment. Ongoing climate change mitigation and adaptive management strategies are pursued.				
1		Understand the impacts of climate change and the limits to the ability to predict and model these impacts on specific ecosystems and local regions.		IG
	Subgoal	Continue to refine climate change models so as to develop specific predictions for the Lake Superior Basin.	6	
	Subgoal	Develop model projections of changing water levels for Lake Superior.		
	Subgoal	Model impacts on wetlands and other habitat types under future water level regimes for 20 years, 50 years, 75 years, and 100 years in the future.		
	Subgoal	Predict changes to terrestrial and aquatic ecosystems based on climate change predictions.		
	Subgoal	Develop predictions of the impacts of climate change on keystone biota in the lake and the basin as a whole.		
2		Develop adaptation strategies to protect and restore ecosystems accounting for climate change.		
	Subgoal	Review and revise conservation, restoration and management plans in the basin as required based on the climate scenarios developed in the goal above.	1	P

Goal	Sub-Goal		Other Strategic Outcomes Achieved	Goal Type*
	Subgoal	Implement adaptation actions to account for changes in variability and/or frequency in air and water temperatures, water levels, storm events, droughts, etc.		
	Subgoal	Help stakeholders to adapt to climate change impacts by facilitating assessment of infrastructure vulnerabilities and capacity.		
3		Make Lake Superior a net carbon reduction area that reduces greenhouse gas emissions.		S
	Subgoal	Facilitate basin collaboration on activities to reduce carbon emissions.		
	Subgoal	Encourage governments around the basin to set greenhouse gas emission reduction targets.		
	Subgoal	Encourage US cities to sign onto the US mayors' climate protection agreement.		
Strategic Outcome #8: Management in the Lake Superior basin is organized and coordinated at appropriate governmental scales, and is implemented at appropriate watershed scales.				
1		Support the development and implementation of ecologically based integrated watershed management plans for priority watersheds within the Lake Superior Basin.	1, 2	P, S
	Subgoal	Identify watersheds that have existing watershed plans.		
	Subgoal	Develop a list of watersheds that need a new or revised plan.		
	Subgoal	Prioritize watershed list.		
	Subgoal	Work with local governments/groups to develop watershed plans for the highest priority watersheds in need of a new or revised plan.		
2		Develop and maintain a unified, binational GIS database that includes current basin-wide data and decision support models needed for watershed management at a scale and in a format that supports Lake Superior Basin planning and watershed management.	6	IG, P
	Subgoal	Develop formal agreements for data sharing, participation and support.		
	Subgoal	Establish a mechanism to maintain shareable data once collected.		
Strategic Outcome #9: Air and water quality are restored. Water quantity and soils are conserved.				
1		Restore and maintain natural hydrologic processes, including groundwater.		
	Subgoal	Promote and encourage the adoption of water policies that ensure ecologically sustainable water management for lake levels.		

Goal	Sub-Goal		Other Strategic Outcomes Achieved	Goal Type*
	Subgoal	Encourage jurisdictions to adopt flow standards for individual developments or, where appropriate, across a jurisdiction, to sustain key environmental processes, critical species habitat and ecosystem services.		
	Subgoal	Work to ensure that sustainable hydropower planning within each jurisdiction adequately protects ecological systems, communities and populations.		
2		Eliminate contaminants at levels that impact plants and animals, including humans.	3	
3		Protect oligotrophic conditions in nearshore and offshore waters and restore and protect water quality in embayments and tributaries.		

*Goal types: P – Planning
M – Monitoring
IG – Information Gathering
S – Stewardship
C – Communications

Lake Superior Binational Program Ecosystem Goals for Lake Superior

STRUCTURE AND CONTEXT FOR THE ECOSYSTEM GOALS

The Lake Superior Binational Program is an integrated program addressing critical pollutants, human health, sustainability, habitat, aquatic and terrestrial communities, and communications. The approach described in these ecosystem goals supports and is integrated with the other chapters of the LaMP.

The Vision for Lake Superior expresses the desire for, among other things, a watershed where diverse life forms exist in harmony, that is free of toxic substances that threaten fish, wildlife and human health, and where wild shorelines and islands are maintained.

The Aquatic, Habitat and Wildlife Committees of the Lake Superior Work Group, have put forward a mission to “support intact, diverse, healthy and sustainable ecosystems and the native plant and animal communities that depend upon them.” The Committees have described the natural processes that must be present and functioning well in order for a healthy ecosystem to exist, as well as a set of principles that guided, and continue to guide, their work in developing these Ecosystem Goals. These components can be found in the consolidated ecosystem chapter of the Lake Superior LaMP.

The Strategic Outcomes that the committees have set in order to achieve the Vision for Lake Superior and to preserve, protect and enhance healthy, sustainable ecosystems, are as follows:

1. Diverse, healthy and self-sustaining native plant and animal communities exist in the Lake Superior basin.
2. A program is in place to monitor the abundance, distribution, and health of plant and animal populations and communities in the Lake Superior basin.
3. Native species populations are at appropriate levels throughout the Lake Superior basin.
4. Harmful invasive species are reduced and, where possible, eliminated from the basin.

5. No new non-native, harmful invasive species are introduced into the Lake Superior basin.
6. Partnerships among natural resources management agencies, environmental agencies, and non-agency stakeholders are strengthened and broadened.
7. Human activities in the Lake Superior basin minimize the contribution of greenhouse gases to the environment. Ongoing climate change mitigation and adaptive management strategies are pursued.
8. Management in the Lake Superior basin is organized and coordinated at appropriate governmental scales, and is implemented at appropriate watershed scales.
9. Air and water quality are restored. Water quantity and soils are conserved.

The “Ecosystem Goals” document contains more specific Goals necessary to achieve the broader Strategic Outcomes listed above. The Subgoals represent smaller steps necessary to bring about a particular goal. These outcomes, goals and subgoals represent a desired state for the Lake Superior basin ecosystem, but are not achievable by the Binational Program or its committees alone. Activities that a Binational Program committee will undertake to advance a particular goal or subgoal will reflect the abilities and priorities of that committee and will be set out in the committee’s workplan.

DEFINITIONS USED BY THE COMMITTEES IN REVIEWING/REVISING THE “ECOSYSTEM GOALS” DOCUMENT

Vision Statement - A guiding image of the success an organization is striving to achieve. It is a description that conjures up a similar image for each member of an organization regarding the destination the group is working together to achieve.

Mission Statement - A formal, public statement of an organization's purpose. It is used by management to set direction and values.

Strategic Outcome - A long-term and enduring benefit that stems from an organization’s mandate, vision and efforts. A final product, end result, or consequence that is important or essential in relation to a plan of action. A strategic outcome represents the difference an organization wants to make and should be a clear, measurable outcome within the organization’s sphere of influence.

Goal - A statement of desired outcomes to be achieved through the direction of effort over a specified period of time.

Subgoal (Objective) - Something that an organization's efforts or actions are intended to attain or accomplish.

PRINCIPLES ESTABLISHED BY THE HABITAT AND WILDLIFE COMMITTEES

These principles appear in the consolidated ecosystem chapter of the LaMP 2000, produced in September 2005.

- Healthy ecosystems support self-regulating communities comprised of naturally reproducing indigenous species, habitat upon which these species depend, and provide sustainable benefits to society.
- A holistic, ecosystem-based approach is critical to the protection and management of the Lake Superior basin.
- The aquatic environment is interconnected with the wetland, riparian, and terrestrial environments of the Lake Superior basin.
- Native species maintained by natural reproduction provide the greatest potential for sustainability.
- Chemical contamination of fish and wildlife impairs natural reproduction and benefits to society.
- Prevention of additional species introductions and control of existing non-indigenous species will facilitate restoration of a healthy ecosystem.
- An intact ecosystem is resilient and does not require management intervention.