

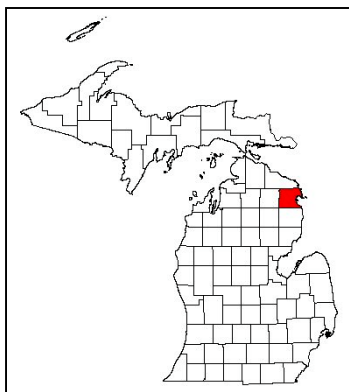
Introduction



Coastal ecosystems, both near shore land areas and water areas are biologically rich. In northeast Michigan, near shore land areas are post glacial lake plains, typified by water deposited sand and gravel overlaying limestone bedrock. Great Lakes marshes and bedrock shoals provide cover, feeding and spawning habitat for fish populations. Coastal ecosystems provide critical habitat for resident and migratory birds. Pine-oak and aspen-birch forests; hardwood and conifer swamps; coastal marshes and fens; cobble and alvar beaches; numerous bays and peninsulas and several uninhabited islands are home to a high number of threatened and endangered species.

Coastal zones are prime areas for a wide variety of outdoor recreation. Hunting, fishing, boating, paddle sports, birding and hiking are a few of the recreational activities pursued within coastal areas. Quality of the recreational experience is dependent upon the quality and condition of the natural resources. Healthy ecosystems are better places to hunt, fish and bird watch than degraded, exhausted environs. Along with being great places to recreate, shorelines and near shore land areas are in high demand for residential development. The challenge for communities along the Great Lakes coastal areas is to accommodate and guide growth in a manner that supports healthy ecosystems.

Misery Bay was identified as an area of exceptionally high ecological values in the 1998 State of the Lakes Ecosystem Conference paper entitled Biodiversity Investment Areas, Near shore Terrestrial Ecosystems. Misery Bay is one of only 20 such sites identified across the entire Great Lakes Region. Submerged sinkholes, one of which is the outlet of a large underground river, are found in El Cajon Bay. Populations of dwarf lake iris (*Iris lacustris*) can be found within the project area. The area provides bird nesting habitat for threatened species such as Common terns (*Sterna hirundo*), and Caspian terns (*Sterna caspia*). The forests and marshes around Misery Bay are critical stopover sites for migrating neotropical birds.



Location and Regional Setting

The Misery Bay Initiative planning area is located in Alpena County in the Northeastern Lower Peninsula of Michigan. The planning area covers parts of Alpena Township and a small area in the City of Alpena. The Initiative planning area includes T.31N.-R.9W., T.30N.-R.9W., T.30N.-R.10W. and T.31N.-R.10W. Figure 1.1 shows the Eco-Plan coverage area. Misery Bay is located northeast of the City of Alpena. While next door to a community that has seen considerable residential and industrial development over the last 100 years, terrestrial and aquatic ecosystems are still in relatively pristine condition.

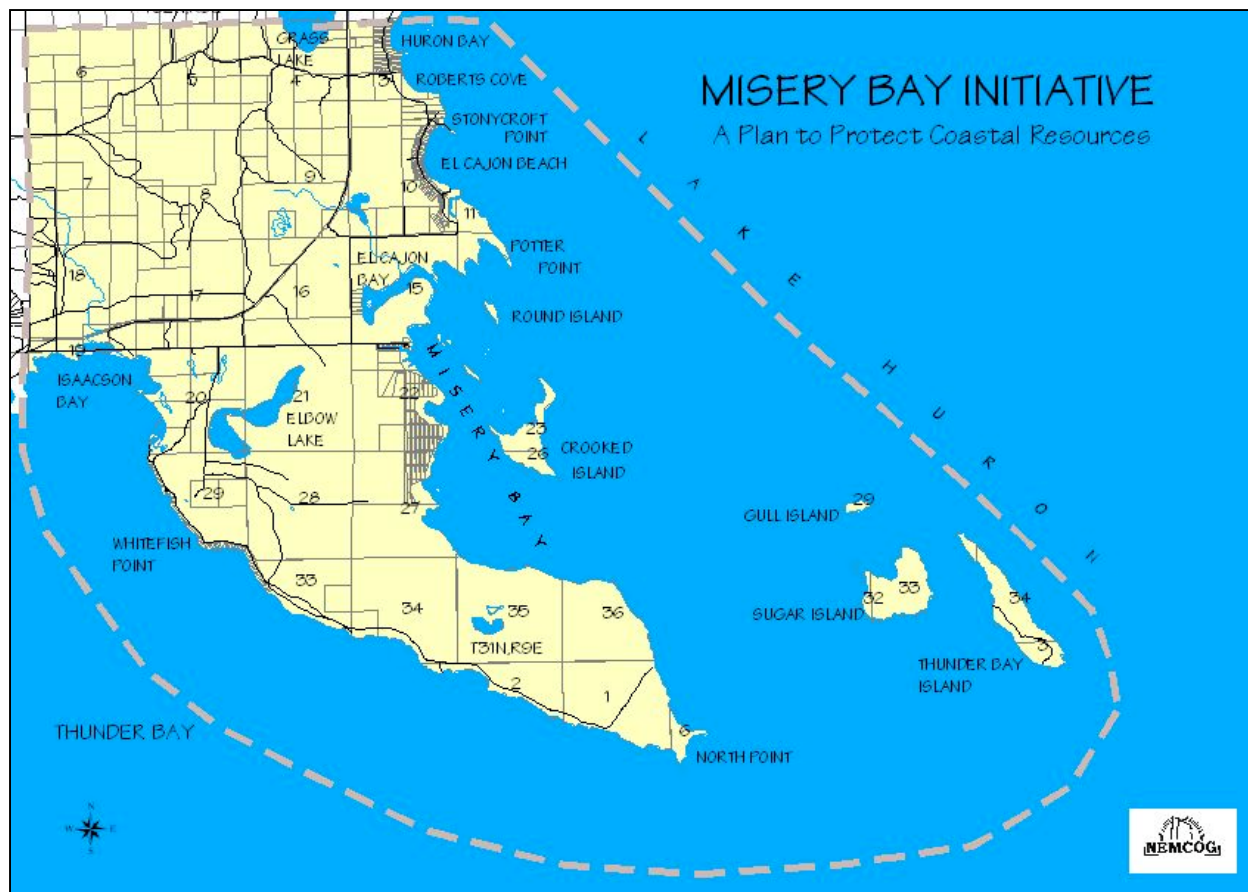


Figure 1.1

A Brief History of the Area

The Thunder Bay Island Group, Misery Bay, Whitefish Bay and North Point played a prominent role in the early recorded history of Alpena County. In fact, the first settlement in Alpena County was on Thunder Bay Island. The Thunder Bay Island Lighthouse is one of the oldest lighthouses on Lake Huron. First constructed in 1832, it was built to warn ships of the extensive and dangerous shoals around the Thunder Bay Island Group and North Point. Fishing enterprises were attracted to the Island for two reasons. The same shoals that were a danger to Great Lakes ships supported healthy fisheries. Whitefish and lake trout were the primary commercial fisheries. Secondly, because of the deep waters off the east shores of Thunder Bay Island, ships could sail relatively close to the island, allowing the commercial fisherman to convey processed fish to the ships for transport to city markets to the south. By 1945, a large fishing community thrived on the federally-owned island. Records indicate 160 people lived on the island with thirty-one fishing boats harvesting twelve thousand barrels of fish each year. With pressure from the federal government to vacate the island, the fishing village relocated to nearby Sugar Island where it remained for many years. Additional information on the history of the area is presented in Appendix B.

State of the Lakes Ecosystem Conferences (SOLEC)

The State of the Lakes Ecosystem Conference (SOLEC) is hosted by the U.S. Environmental Protection Agency and Environment Canada on behalf of the two countries. These conferences are held every two years in response to a reporting requirement of the bi-national Great Lakes Water Quality Agreement (GLWQA). The purpose of the Agreement is "to restore and maintain the physical, chemical and biological integrity of the Great Lakes Basin." The conferences are intended to report on the state of the Great Lakes ecosystem and the major factors impacting it and to provide a forum for exchange of this information amongst Great Lakes decision-makers. However, these conferences are not intended to discuss the status of programs needed for protection and restoration of the Great Lakes basin but to evaluate the effectiveness of these programs through analysis of the state of the ecosystem. Another goal of the conference is to provide information to people in all levels of government, corporate, and not-for-profit sectors that make decisions that affect the Lakes.

These conferences are a culmination of gathering information from many sources and engaging a variety of organizations. In the year following each conference, the Governments prepare a report on the state of the Lakes based in large part upon the conference process.

The first conference, held in 1994, addressed the entire system with particular emphasis on aquatic community health, human health, aquatic habitat, toxic contaminants and nutrients in the water, and the changing Great Lakes economy. The 1996 conference focused on the near shore lands and waters of the system where biological productivity is greatest and where humans have had maximum impact. Emphasis was placed on near shore waters, coastal wetlands, land by the Lakes, impacts of changing land use, and information availability and management. SOLEC 94 and 96 were based on a series of ad hoc indicators that were suggested by scientific experts. Following SOLEC 96, those involved identified a need to develop a comprehensive, basin-wide set of indicators that would allow the Parties to report on the progress under the Agreement in a predictable, compatible and standard format. For SOLEC 98, the indicator development process became more formalized with the development of a suite of easily understood indicators that objectively represent the condition of the Great Lakes ecosystem components (as called for in Annex 11 of the GLWQA). This suite is used every two years to inform the public and report progress in achieving the purpose of the GLWQA, thus initiating a regular and comprehensive reporting system. This indicator suite draws upon and complements indicators used for more specific purposes such as Lakewide Management Plans (LaMPs) or Remedial Action Plans (RAPs) for Areas of Concern.

At SOLEC 2000, the challenge was to see how many of the 80 indicators could be reported on. In some cases this was a fairly "easy" task - data were already available for use in reporting on an indicator (by various agencies). In other cases, this task became more difficult as new data were required before they could be reported or further research and development were required before implementing data collection efforts and then reporting on an indicator. Post SOLEC 2000 and through the winter of 2001, there was an opportunity for further review of the indicator list and for revisions to be made to the indicator suite. SOLEC 2000 was the first conference to begin the actual assessment of the state of the lakes using these science-based indicators.

SOLEC 2000 also saw the first emergence of a new group of indicators called Societal Indicators following an introduction of the "stewardship" concept at SOLEC 1998. Societal Indicators seek

to measure both human activities that impact the environment as well as the societal action(s) taken in response to such environmental pressures. The effort began modestly with one report at SOLEC 2000 and has since benefited from further research in broader areas.

The focus of SOLEC 2002 was to continue to update and assess the state of the Great Lakes using the current suite of indicators with an emphasis on biological integrity, the theme for SOLEC 2002. This SOLEC presented the most comprehensive assessment yet of the state of the Great Lakes basin ecosystem. SOLEC 2002 featured 43 indicator assessments. A draft version of these reports was distributed at SOLEC 2002. The comment and review period for these indicator assessments was available online until January 2003. Comments are collected from participants and incorporated into the indicator reports where feasible.

Significant development work has taken place on broadening the indicator suite. SOLEC 2002 presented a candidate set of Biological Integrity indicators, as well as proposed indicators for agriculture, groundwater, forestry, and societal response, which, as a part of the Societal Indicator suite, measure positive human responses to ecosystem pressures, thereby reflecting a commitment to ecosystem health. SOLEC 2002 also provided revisions to current indicators in the Great Lakes suite and the identification of management challenges and actions. Work continues on the Great Lakes indicator suite in an effort to streamline this reporting to management and the public. An executive summary of the indicator assessments will be released with the next State of the Great Lakes report in the summer of 2003.¹

Biodiversity Investments Areas

State of the Lakes reports were first developed in 1998. As a result of that initial effort, the State of the Lakes Ecological Conference (SOLEC) is held on a biannual basis. The SOLEC 96 Land by the Lakes background paper "introduced a new idea to Great Lakes managers - the idea that some sections of shoreline have exceptionally high ecological values which warrant exceptional attention to protect them from degradation. These areas, mapped at a coarse scale, were coined Biodiversity Investment Areas - or BIA in short form.

Shoreline Biodiversity Investment Areas are broad areas of shoreline and associated landscape with clusters of exceptional biodiversity values. Biodiversity Investment Areas encompass several concepts. The term "biodiversity" is often defined as including the diversity of life at several levels - the diversity of landscapes at a broad level, the diversity of natural communities, the diversity of wild species, and finally the diversity of genetic material in natural gene pools. Biodiversity incorporates the full range of life, from the microscopic but essential soil bacteria to the soaring eagle as well as the complex array of landforms that provide habitat for this life.

The concept of "investment" in areas for biodiversity is a recognition that areas rich in life have value, and that they need active support if they are to survive. In some cases, BIAs are still present along the Great Lakes shoreline because of benign neglect, accident of history, or lack of economic motivation to develop other land uses. But the historical pattern is clear - without deliberate management strategies and public policies to preserve the ecological values of shoreline areas, sooner or later those values are degraded as a consequence of incremental

¹ SOLEC Web Site <http://www.epa.gov/glnpo/solec/index.html>

changes in land use. Public and private "investment" – in terms of dollars, policy attention, and management – is essential to the long-term health of these ecosystems.

The values that are clustered within individual BIAs could include:

- *multiple or outstanding examples of Great Lakes shoreline special communities such as sand dunes, alvars, prairies, or coastal wetlands;*
- *concentrations of species of special interest, including rare, threatened and endangered species, Great Lakes endemic species, disjunct species, or colonial birds;*
- *excellent examples of representation of coastal landforms or typical vegetation and wildlife communities, particularly those in excellent condition or of usually high quality;*
- *exceptional levels of natural diversity, including both habitat diversity and species diversity;*
- *high levels of ecological connectivity, both along the shoreline and to inland or offshore natural features.²*

Plan Development

Great Lakes National Program Office (GLNPO) of the USEPA administers a Great Lakes grant program. Funding categories include projects addressing Contaminated Sediments, Pollution Prevention and Toxic Reduction, Habitat (Ecological) Protection and Restoration, Invasive Species, Strategic or Emerging Issues, and Other Lakewide Management Plan or Remedial Action Plan (LaMP/RAP) Priorities. RFP's are issued each year. State pollution control agencies, interstate agencies, other public or nonprofit private agencies, institutions, and organizations are eligible to submit proposals to complete projects that address criteria set by GLNPO. In 2002, NEMCOG submitted a grant proposal under the Habitat (Ecological) Protection and Restoration category. GLNPO approved the grant and authorized NEMCOG to commence work on the Misery Bay Initiative, A Plan to Protect the Coastal Resources around Misery Bay, Isaacson Bay, North Point and the many offshore islands. The primary purpose of the project is to develop a comprehensive plan which identifies Misery Bay's ecological values, potential and existing threats, and recommendations for long term protection.

This plan was developed in partnership with the Misery Bay Initiative Steering Committee, formed as part of this project. The steering committee served as an advisory group, meeting several times throughout plan development. Members included: Alpena Township, Alpena County, Alpena Conservation District, NEMCOG, Department of Natural Resources, Natural Resource Conservation Service, U.S. Fish & Wildlife Service, The Nature Conservancy, Conservation Fund, Headwaters Land Conservancy, Michigan Nature Association, Huron Pines RC&D, local industry, businesses, private landowners and local media.

The committee worked together to create a vision for the future of the coastal areas along Misery Bay. The plan includes a detailed inventory of the natural resources; evaluates the status of planning and zoning; identifies values and assets, issues and concerns and priority conservation areas; and includes recommendations for the protection of the ecological resources in the area.

² 1998 State of the Lakes Ecosystem Conference, Biodiversity Investment Areas by Ron Reid, Karen Rodriguez and Amy Mysz

An education and outreach effort entailed several articles in the Alpena Newspaper, posting of the plan on NEMCOG's web site and presentations to different groups. An important step in implementing the plan is to build local support for the recommendations and strategies. NEMCOG made presentations to the Alpena Township Planning Commission, Alpena Area recreation Commission, NEMCOG Board of Directors, City of Alpena Planning Commission, Thunder Bay National Marine Sanctuary & Underwater Preserve and the Alpena County Planning Commission. The presentation showed existing conditions, discussed issues and concerns, and defined strategies and recommendations. The effort will continue with presentation to other organizations and community groups.

Active Committee Members

Don Beem, riparian owner & Thunder Bay National Marine Sanctuary
Richard Deuell, Northeast Michigan Council of Governments
Heather Enterline, U.S. Fish and Wildlife Service
Fred Gottschalk & Renee Bruestle, Headwaters Land Conservancy
Kenneth Houghmaster, riparian landowner
Andrea Kline, The Nature Conservancy
Kirk Kowalski, Alpena Conservation District
Elizabeth Littler, riparian landowner
Peter McCaughey, Beaumont Point Club
Barbara Meek, Thunder Bay River Watershed Council
Jerry Meek, Alpena County Planning Commission
Gil Peterson, LaFarge Corporation
Connie Stafford, Alpena News
Cody Stevens, Michigan Department of Natural Resources
Richard Stevenson, Michigan Department of Natural Resources
Steve Tongue, Thunder Bay Island Preservation Society
Marie Twite, Township of Alpena
Len Zolnierik, Alpena County Board of Commissioners
Tom Stone, Michigan DNR

Other Participants

Brandon Schroeder, Michigan Sea Grant
Norman Dutcher, property owner
Ken Kolasa, local resident
Mark Hunter, local resident
Fran Brink, Wade-Trim
James Schardt, GLNPO, Environmental Protection Agency
Brad Jensen, Huron Pines RC & D Council
Janet Fairchild, Michigan Nature Association
Steve Fletcher, riparian landowner and Alpena Power Company
John Pilon, Michigan Department of Natural Resources
Doug Kane, Landowner
Grant Sork, Natural Resource Conservation Service
Wayne Lusardi, Thunder Bay National Marine Sanctuary & Underwater Preserve