

## MANAGEMENT PLAN OBJECTIVES & OUTCOMES

The LSNERR Management Plan has been organized using a “goals”, “objectives”, and “outcomes” based planning framework. The LSNERR goals, which were identified earlier in this document, describe the long-term intentions of the Reserve. The Management Plan’s objectives are broad statements that describe what the LSNERR intends to accomplish within the first five years. Each objective has associated outcomes describing the specific impacts, products, or results associated with each of the objectives. The LSNERR Reserve Manager and staff will identify specific actions as they implement the Management Plan using the objectives and outcomes stated below. UWEX and NOAA evaluation tools will be used to measure performance of the LSNERR and its ability to reach target audiences. Appropriate NERRS performance measures will be prepared and submitted to the Estuarine Reserves Division (ERD).

### **Planning Definitions:**

**Goal** – Long-term intentions of the NERR; these can span longer than the five-year time frame

**Objective** – Broad statements describing what the LSNERR intends to accomplish during the first five years

**Outcome** – Specific statements describing the impacts, products, or results associated with each of the objectives

### **LSNERR Objectives and Outcomes for 2010 to 2015**

**OBJECTIVE 1:** Conduct baseline or foundational research and activities needed for longer-term research and monitoring directed at improving the understanding of the St. Louis River Freshwater Estuary, its interactions with Lake Superior, and the short- and long-term ecological changes within Lake Superior freshwater estuaries and coastal ecosystems.

**Outcome 1A:** The LSNERR will complete an inventory of existing physical, chemical, biological, social, and cultural information for the LSNERR in order to build a foundation to guide future research and education activities.

**Outcome 1B:** The LSNERR will develop a geographic information system (GIS) and associated geospatial-temporal database for the St. Louis River Freshwater Estuary and contributing watershed that incorporates existing and new data from diverse sources. In addition, the LSNERR will begin work on a physical and hydrologic model of the St. Louis River Freshwater Estuary system that will be integrated into the GIS platform.

**Outcome 1C:** Information regarding past, current, and potential watershed land use patterns and impacts will be incorporated into a GIS platform for the St. Louis River Freshwater Estuary and used to identify and prioritize watershed management and research needs.

**Outcome 1D:** The LSNERR will conduct new research and collect data to enable a comprehensive site description and characterization of the St. Louis River Freshwater Estuary and will use this information to prepare and publish baseline habitat maps and a site profile.

**Outcome 1E:** The LSNERR will collaborate with other partners to identify a group of reference sites that cover a range of conditions and are appropriate for long-term study and comparison to the St. Louis River Freshwater Estuary system.

**Outcome 1F:** The LSNERR will establish a monitoring program following SWMP protocols.

**Outcome 1G:** The LSNERR will conduct new research examining the interactions between the St. Louis River Freshwater Estuary and Lake Superior. Areas of research could include, but are not limited to, seiche dynamics, food web processes, invasive species, climate change, and historic changes to the system.

**OBJECTIVE 2:** Improve understanding of the socio-economic aspects of the St. Louis River Freshwater Estuary.

**Outcome 2A:** The LSNERR will develop a research strategy that enables further identification and quantification of the socio-economic benefits and ecosystem services provided by the St. Louis River Freshwater Estuary.

**Outcome 2B:** The LSNERR will produce outreach materials that characterize and describe the socio-economic resources of the St. Louis River Freshwater Estuary.

**OBJECTIVE 3:** Increase public awareness of the ecological and cultural significance of the St. Louis River Freshwater Estuary.

**Outcome 3A:** The LSNERR will establish a publically accessible library of ecological and cultural resources relevant to the LSNERR.

**Outcome 3B:** The LSNERR will identify St. Louis River Freshwater Estuary interpretive needs in collaboration with other environmental education centers in the Lake Superior area and create at least one new interpretive resource.

**Outcome 3C:** The LSNERR will develop web-based educational materials and applications designed to improve public awareness of the ecological and cultural significance of the St. Louis River Freshwater Estuary.

**Outcome 3D:** The LSNERR will work with partners to investigate the potential need for, and benefits of, a Master Naturalist Program at the LSNERR. If deemed appropriate after this analysis, a Master Naturalist Program will be established at the LSNERR.

**OBJECTIVE 4:** Increase educator and student understanding of Great Lakes freshwater estuaries and coastal habitats.

**Outcome 4A:** The LSNERR will work with area educators to develop continuing education programming related to Lake Superior freshwater estuaries and coastal resources. Initial focus areas will include an introduction to Great Lakes freshwater estuaries, aquatic invasive species, and potential climate change impacts.

**Outcome 4B:** The LSNERR will work with partners to conduct a market analysis and needs assessment related to Lake Superior freshwater estuary and coastal resource K-12 curriculum and lessons plans. This process will be conducted in a manner consistent with KEEP.

**Outcome 4C:** Based upon the outcomes of the market analysis and needs assessment, the LSNERR will work with partners to develop appropriate curriculum, distribute the curriculum to schools, and conduct training for educators related to the curriculum.

**Outcome 4D:** The LSNERR will work with the NERRS Graduate Research Fellowship program to develop and sponsor graduate research at the Reserve.

**OBJECTIVE 5:** Provide research-based educational outreach programming and skills training that address the Lake Superior coastal management issues and needs of community leaders and other decision makers.

**Outcome 5A:** The LSNERR will work with partners to conduct a market analysis and needs assessment that identifies the coastal management issues and training needs of coastal decision-makers.

**Outcome 5B:** The LSNERR will develop a NERRS CTP based upon the results of the market analysis and needs assessment.

**OBJECTIVE 6:** Conduct stewardship activities that protect and enhance the ecological health of the LSNERR.

**Outcome 6A:** The LSNERR will work with management partners to conduct an assessment of LSNERR stewardship needs.

**Outcome 6B:** The LSNERR will design and begin implementation of applied research, monitoring, and management programs that address stewardship needs of the St. Louis River Freshwater Estuary, riparian habitats, and watershed.

**Outcome 6C:** The LSNERR will work with partners to identify potential needs related to toxins and contaminants and their impacts on the St. Louis River Freshwater Estuary and will develop a strategy to address those needs.

**OBJECTIVE 7:** Incorporate citizen-science programs and volunteer monitoring into LSNERR research and monitoring activities.

**Outcome 7A:** The LSNERR will establish citizen science and volunteer monitoring programs to address relevant issues.

**Outcome 7B:** The LSNERR will explore the feasibility of establishing a Citizen Research Center at the LSNERR.

**Outcome 7C:** The LSNERR will explore the feasibility of establishing a formal, connected network of Wisconsin freshwater estuary sites. Partnering sites would be included in coordinated outreach, applied research, and monitoring programs designed to encourage and foster local stewardship of freshwater estuary resources at the community level.