COMMUNITY FOREST PLAN

LAKE HURON COMMUNITY FOREST

2020

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Chippewa County, Michigan

INTRODUCTION

The Lake Huron Community Forest is located on the shores of Lake Huron near De Tour Village, De Tour Township, Chippewa County, Michigan (T41 N, R04E, Section 7). The parcel is located in the St. Marys Watershed (USGS Hydrologic Unit Code: 04070001) and includes seventeen acres of freshwater forested/shrub wetland and old growth northern forest bordered by 1,700 feet of Lake Huron shoreline. Land use/cover types include forested uplands (including old growth white pine), forested and emergent wetlands, and Lake Huron sand beach (Figure 1). The US Fish and Wildlife Service National Wetlands Inventory Mapper confirms that approximately 96% (or 16.4 acres) of the parcel is comprised of forested/shrub coastal wetlands.

The proposed community forest is accessed via an established drive. Structures on the parcel include an extensive boardwalk that spans the flooded wetlands, connecting upland areas to the beach. Planned recreational improvements include new hiking trails, nature watching opportunities, (birds, wildlife, rare plants, etc.) and public access to Lake Huron beachfront as part of the community forest. Upland areas will be utilized for the establishment of new recreational trails and interpretive stations will be created at appropriate locations. The Superior Watershed Partnership's (SWP) Great Lakes Conservation Corps (GLCC) crews and staff are trained in suitable trail building techniques and will implement construction of public trails at appropriate locations throughout the community forest. Trail access will be limited to non-motorized use only, and signs will be installed to limit traffic to established trails.

Figure 1. Lake Huron Community Forest Locator Map

COMMUNITY FOREST OBJECTIVES

The SWP, in cooperation with partners, will protect the property in perpetuity and manage the property pursuant to Community Forest Program regulations and the guidelines of this plan. The primary objectives of the community forest include:

- Protect and sustainably manage forest health to benefit Lake Huron, plants and wildlife, and the community
- Protect and maintain 1,700 feet of undeveloped Lake Huron shoreline and adjacent forested and wetland areas from residential development
- Provide K-12 place-based educational opportunities to regional youth
- Provide recreational benefits and public access for local residents and tourists
- Provide opportunities for sustainable economic development
- Serve as a model of effective forest stewardship to nearby landowners

NATURAL FEATURES

Purple Pitcherplant; Photo Credit: Thomas G. Barnes

The four primary zones of the Lake Huron Community Forest include: sand beach, flooded marsh area, adjacent lowland, and upland areas. Dune and swale complexes are dominated by species common to the northern forests of the Upper Peninsula of Michigan including white pine (*Pinus stobus*), red pine (*Pinus resinosa*), and red oak (*Quercus rubra*). Forest types further inland and adjacent to Highway M-134 include northern hardwood forest as well as a section where early successional species including aspen (*Populus spp*.) and birch (*Betula spp*.) dominate (Figure 2). The US Fish and Wildlife Service National Wetlands Inventory (NWI) Mapper confirms that approximately 96% (or 16.4 acres) of the parcel is comprised of forested/shrub coastal wetlands (Figure 3).

The NWI classifies forested shrub/wetlands on the parcel as PF04A, PF04B, PSS1/EM1C, and PEM1C. Classification descriptions are as follows:

- **PF04A:** A palustrine system dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens. These forested wetlands are dominated by needle-leaved evergreens and characterized by woody vegetation that is at least 6 meters tall. Flooding occurs temporarily and can last from a few days to a few weeks during the growing season.
- **PF04B:** A palustrine system dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens. These forested wetlands are dominated by needle-leaved evergreens and characterized by woody vegetation that is at least 6 meters tall. Wetlands are seasonally saturated for extended periods during the growing season, but unsaturated by the end of the season in most years.

NATURAL FEATURES, CONT.

- **PSS1/EM1C:** A palustrine system dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens. These forested wetlands are dominated by woody vegetation less than 6 meters tall. Deciduous species present include woody angiosperms with wide, flat leaves that shed during the cold or dry season. These wetlands are usually dominated by perennial plants, including emergent hydrophytes that are present for most of the growing season. Flooding occurs seasonally, with surface water present for extended periods especially early in the growing season.
- **PEM1C:** A palustrine system dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens. These wetlands are usually dominated by perennial plants, including emergent hydrophytes that are present for most of the growing season. Flooding occurs seasonally, with surface water present for extended periods especially early in the growing season.

Very little topographic relief is present throughout the parcel, with elevations ranging from 176 meters to 182 meters (Figure 4). The wetlands are supported by soil types including: Kinross-Au Gres complex, 0 to 3 percent slopes (somewhat poorly drained) and Shelter-Alpena complex, 0 to 15 percent slopes (excessively drained; Figure 5).

The Michigan Natural Features Inventory (MNFI) notes that 121 species of Special Concern (SC), threatened (T), or endangered (E) species have been observed in Chippewa County including species such as piping plover. A survey of the parcel in 2019 documented multiple purple pitcherplants (*Sarracenia purpurea*), an obligate wetland species and indicator of high quality wetland habitat (coefficient of conservatism value of 10). In a time and place where suitable coastal properties are highly desirable for residential building, preserving the natural state of such areas is critical to the success of resident plant and animal species.

Figure 2. Lake Huron Community Forest Major Land Cover Types

Figure 3. Lake Huron Community Forest National Wetlands Inventory Map Showing Freshwater Emergent and Forested Wetlands

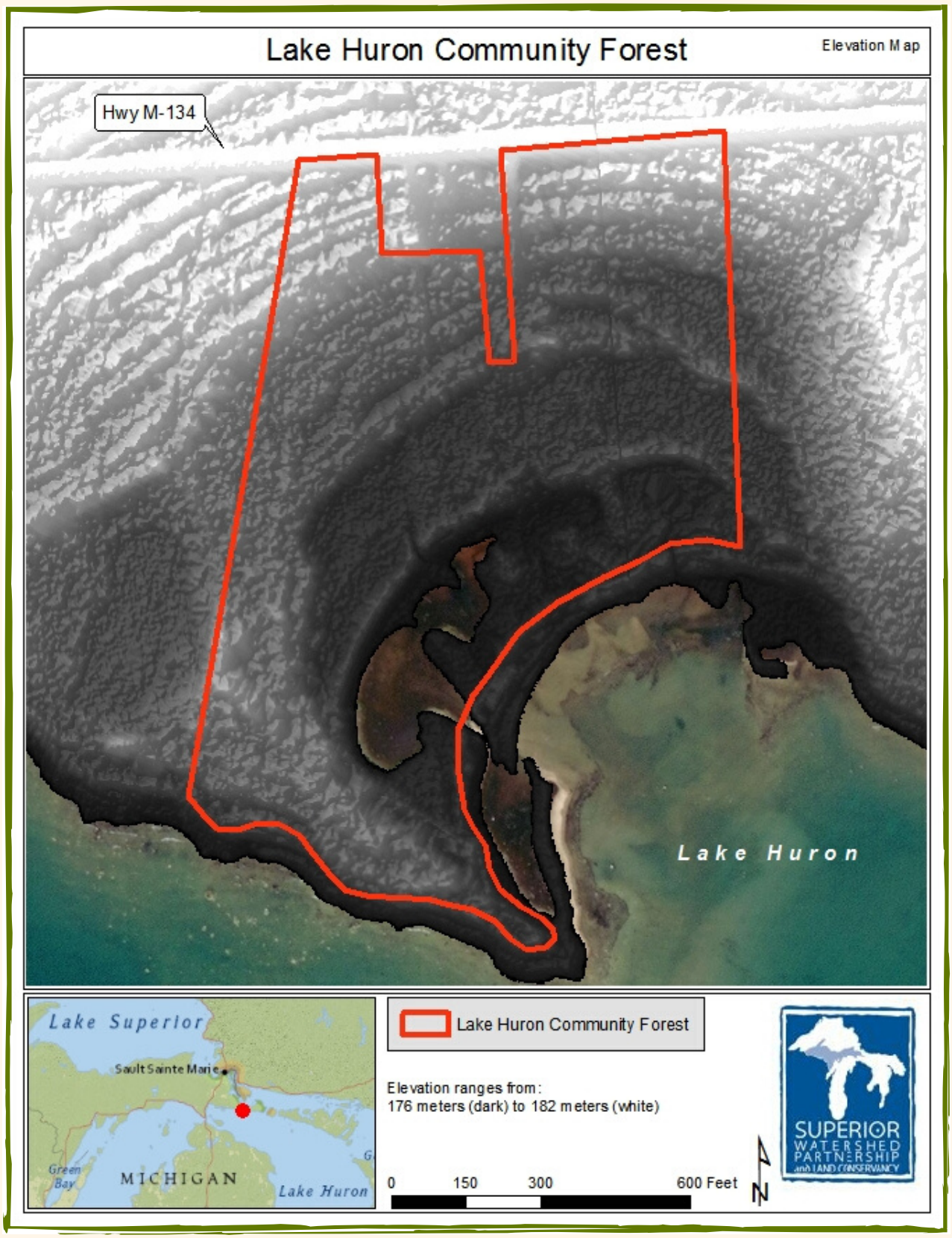


Figure 4. Lake Huron Community Forest Digital Elevation Model Showing Topographic Relief/Elevation

Figure 5. Lake Huron Community Forest Soil Types from the Natural Resources Conservation Service Chippewa County Soil Survey

COMMUNITY BENEFITS

The Lake Huron Community Forest is located in Chippewa County (population 38,520). Outdoor recreation and tourism has increased dramatically in recent years in this area partly due to highlighting features in publications such as Outdoor Life and Delta Sky magazines as well as the Pure Michigan tourism campaign. Because of its close proximity and easy accessibility to popular vacation destinations and nearby towns, the community forest is expected to provide multiple benefits to area residents and visitors year-round. Notably, forest-based learning opportunities targeting K-12 students and educational and research opportunities for University students will be available. Teachers and students from local schools will have the opportunity to experience forest-based learning and to gain hands-on experience in environmental restoration and management. Additionally, nearby Lake Superior State University professors and students will have the opportunity to utilize the forest for research purposes and to conduct field tasks including restoration and long-term monitoring.

Moreover, public access will provide opportunities for community members to experience and enjoy a unique ecosystem incorporating old growth forest, coastal wetlands, and undeveloped Lake Huron shoreline. Private landowners may also utilize the proposed community forest as a replicable model for effective forest stewardship when establishing plans relating to the future of their own properties.

COMMUNITY INVOLVEMENT

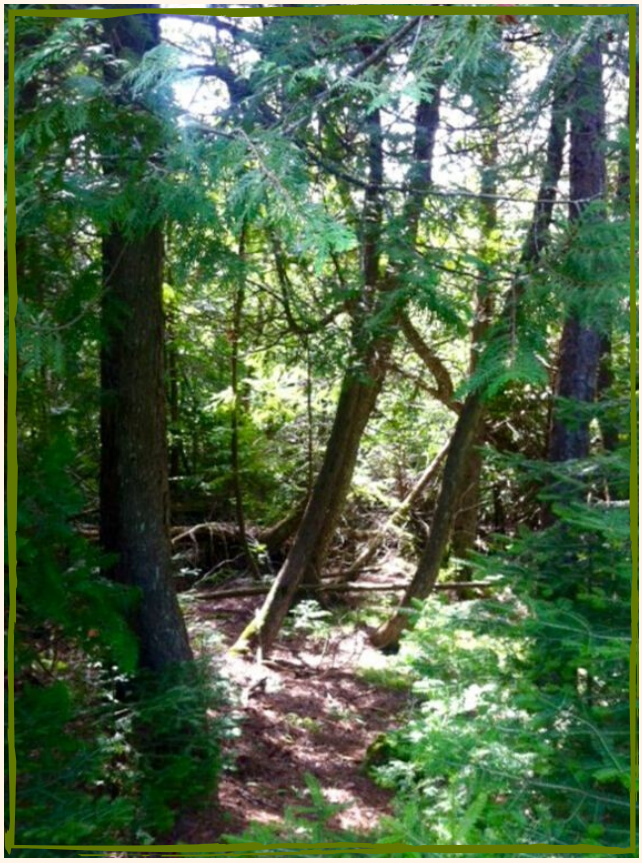
Involving the local community in the preservation and long-term management of the parcel is central to the success of the community forest. Input and hands-on support will be sought from community volunteers and partners to assist with actively managing the forest, public outreach, and educational opportunities. K-12 educational events and public volunteer events will be incorporated to complete initial and long-term management items including but not limited to: interpretive sign installation, trail construction and maintenance, invasive species removal, native plantings, and general site maintenance/clean-up events. Public opinion will be sought to best incorporate community goals in long-term forest management decisions. The SWP has a long history of working with the Sault Ste. Marie Band of Chippewa Indians. Tribal staff will be included in the development of all related public education and signage for the site to honor tribal history and prehistory.

COMMUNITY INVOLVEMENT, CONT.

In addition, the SWP will utilize its Lake Superior Volunteer Corps (LSVC) model to engage a broad audience of local citizens and tourists in community forest activities. The LSVC works side by side with the SWP's Great Lakes Conservation Corps (GLCC), allowing area visitors to add a day of environmental restoration work to their vacation itinerary. The Lake Superior Volunteer Corps was recently awarded the Governor's Service Award for Outstanding Volunteer Program for providing people who love visiting Lake Superior the opportunity to help protect the lake and its watershed. The program is also available for local residents, businesses and community organizations and could be easily replicated for the Lake Huron watershed and community forest property.

COMMUNITY FOREST USES

The Lake Huron Community Forest will serve as a permanent public location for residents and tourists to experience the unique ecosystems of the area and to access the shores of Lake Huron. Recreational opportunities include hiking, nature watching (birds, wildlife, rare plants, etc.), and public access to Lake Huron. Additionally, the forest will serve as an easily accessible, local educational resource for area K-12 and university students.



IMPLICATIONS OF CLIMATE CHANGE ON LANDSCAPE MANAGEMENT

The variable effects of climate change are altering Northern Michigan forests and other ecosystems and can be attributed to changes in important cultural, economic, and environmental factors. In Michigan, the four heaviest rain events per year contain 35% more water than they did 50 years ago (US EPA 2016) . These heavy rains lead to increased sedimentation, nitrates, phosphates, E. Coli, and other pollutants entering waterways leading to beach closings and algae blooms. In addition, northern forest compositions are changing. In particular, the Upper Peninsula of Michigan may see declining paper birch, quaking aspen, balsam fir, and black spruce populations and increasing populations of oak, hickory, and pine trees (US EPA 2016) . Furthermore, the central and eastern regions of the Upper Peninsula are projected to experience more extreme temperature changes than other parts of Michigan (GLISA 2014) .

The Climate Change Response Framework conducted a series of vulnerability assessments for the Northwoods region supported by 27 science and management experts from across the area aka the "Northwoods Framework." The experts agreed that current and anticipated climatic changes suggest the following main points for the Laurentian Mixed Forest Province of the eastern Upper Peninsula and northern Lower Peninsula of Michigan found: 1). Increased precipitation 2). Increased daily maximum temperatures, particularly in winter 3). Potential increase in mean annual temperature of 2.2 to 8.1 ºF for the region 4). The most vulnerable forest communities in the assessment area include upland spruce-fir, jack pine, lowland conifers, and red pine-white pine forest communities (Handler et al. 2014).

Projected climate trends are anticipated for the next 100 years were determined using downscaled global climate model data. The suggested management implications in the Northwoods Framework report include (summarized)

1). Following state/federal guidance and developing wildlife action plans to protect and support wildlife, and specifically rare, threatened, and endangered species.
2). Adapt fire and fuel policies specific to land use in particular regions to address ecosystem and human health concerns exacerbated by drought conditions.
3). Replace water infrastructure such as culverts, bridges, and shoreline roads following 100-year flood plans. Use hydrologic modeling where possible to identify high runoff zones.

IMPLICATIONS OF CLIMATE CHANGE ON LANDSCAPE MANAGEMENT, CONT.

4). Prioritize the preservation of stream margins, as reduced shading could cause the effects of warming temperatures to compound with severe consequences for fish populations and other aquatic life.
5). Adapt forest harvest and management practices for anticipated changes in tree species diversity related to heat-stress and tolerance levels.
6). Manage forests for non-timber products such as food, medicine, and craft. In addition, protect cultural, archeological and historical resources.
7). Adapt forest harvest and management practices for shorter seasons of frozen ground and reduced harvest windows.
8). Manage forests using strategies for increasing carbon storage with enhanced regeneration, competition control, fertilization, and superior stock
9). Plan for increased infrastructure maintenance on trails, campsites, structures and hazard tree removal in wilderness areas due to increased storm events.
10). Plan to adapt to challenges and increased infrastructure maintenance at cultural heritage sites.
11). Plan to shift tourist and local recreational focus from winter-sports to warmer-weather activities.
12). Plan, adapt, and inform the public about regional increases in human diseases and vectors of transmission
13). Plan, adapt to challenges and plant a variety of highly tolerant species at urban and community forest sites (Handler et al. 2014) .

MANAGEMENT RECOMMENDATIONS

Long-term management and monitoring of the community forest will be conducted by the SWP. The SWP staff possess expertise in watershed and conservation planning, environmental restoration, pollution prevention, field inventory, water quality monitoring, site design, project administration, and coordinating project partners and contractors. The SWP worked with a Michigan Forestry Assistance Program (FAP) Forester from the Chippewa Luce Mackinac Conservation District to develop the sustainable forest management recommendations highlighted below. It is anticipated that partner input and public opinion will continue to be sought to best incorporate community goals in long-term forest management decisions.

- No commercial timber harvesting will take place on this property. The lands will be managed as a community forest, with an emphasis towards education. Understory thinning may take place in some areas for trail construction but will be limited. All thinning activities will be conducted by hand and resulting material will be piled and burned or chipped.

- Forest Health: Forest health will be monitored on a yearly basis to reduce the impact from abiotic and biotic factors. This is a healthy forest. The only apparent health issue identified is the presence of spotted knapweed (*Centaurea maculosa*), which will be manually managed by the GLCC and volunteers (see next bullet).

MANAGEMENT RECOMMENDATIONS, CONT.

- Invasive Species: Invasive tree/plant species inventories will be conducted each year. If invasive species are identified on the property, an integrated pest management plan will be developed, as needed, to eliminate the invasive species. The only invasive species that has been identified on the parcel is spotted knapweed. This species will be controlled to prevent further spread. Control methods will primarily involve manual removal (hand pulling) conducted annually.

- Hazard Tree Identification: For the safety of the staff and visitors, hazard trees near parking areas, trails and picnic areas will be removed. A hazard tree is defined as a dead or dying tree, heavy leaning tree, or a tree with structural issues that can fall into or upon areas used by pedestrians. Surveys will be conducted each year by a forester, certified arborist, or an individual trained in identification of hazard trees. Hard and soft snags will be maintained throughout the property as they provide key habitat elements in a healthy forest environment; however safety will be the main priority.

- Fuel Reduction /Fire mitigation: Wildfire is not a significant risk in this County or for the hardwood forest types on the property. Reduction of fuels around the designated parking area or adjacent to public roads may help reduce the chance of ignition.

IMPLEMENTATION STRATEGIES

The Superior Watershed Partnership will utilize its Great Lakes Conservation Corps work crews to implement on-the-ground forest improvement objectives including but not limited to trail construction, invasive removal, and native plantings. Additionally, public opinion will be sought and community volunteers will be incorporated to best implement community forest objectives.

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