

Chapter 8 Community Projects, Programs and Local Initiatives

Section 8.1 Community Projects

Many of the Les Cheneaux project implementation tasks are designed to build on projects, programs, and regulations that are currently influencing water quality. Several research activities continue throughout the watershed to gain more insight into the local influences of water quality. There have also been comprehensive programs active in the watershed that used a broad array of personnel and activity to pursue information about many facets of water quality. Also, there exist regulations and local controls to maintain the natural character of the watershed. Included here are just a few projects, programs, controls and local initiatives that are underway and will be supported by the watershed project.

Les Cheneaux Islands Association - Phosphorus and Chlorophyll Analysis

Bob Smith, the chairman of the LCIA environmental committee, has been studying the occurrence and effects of nutrients in various locations in the Les Cheneaux Islands. The project, which began with Mike Grant and Aqua Terra Labs in 1994 as a result of concern over the effects of the Clark Township municipal discharge into Lake Huron. The research continues to add weight to that same concern and the watershed project will continue with any support possible to alleviate that concern.

University of Michigan Research

Do low levels of human development affect marsh fish assemblages?

University of Michigan Biological Station,

Abstract: "Juvenile and adult fishes were surveyed in three northern Lake Huron Great Lakes coastal marshes in Les Cheneaux Island bays during June and July, 1996 to 1999. Human activity was quantified in terms of shoreline building density, the density of boat docks and boat houses, impervious surface area, and an aggregate Index of Human Activity (IHA). Human activity levels were low, and the bays selected included the full range of development in Les Cheneaux. Various gear were evaluated for sampling fishes in permanent and seasonal marshes: beach seines, electroshocking, gill nets, fyke nets and baited minnow traps. The active methods were not effective because of substrate conditions and the density of macrophytes. Fishes sampled by passive methods were compared in terms of: species richness, the number of native cyprinid species, the percent of selected tolerant fishes, and catch rates. No relationships were found between human activity and gill net samples. Significant relationships were found, especially for shoreline building density and IHA with species richness and the number of native cyprinid species for fyke net and minnow trap samples. Catch rates were not related to human activity measures using these methods. These results show that even low levels of human activity affect marsh fishes. We suggest that minnow traps in permanent marsh provide the most sensitive, cost effective, and safe method for monitoring Great Lakes coastal marsh fish assemblages".

The watershed project will continue support of research of this caliber to help the community make informed decisions in regards to development and its' effect on clean water.

Lake Superior State University

LSSU students and faculty have performed a variety of research projects in Les Cheneaux area. Everything from coliform bacteria contamination in Cedarville Bay to phosphorus levels in Pearson Creek is studied depending much on the concerns of the people. The watershed project will continue this partnership, as it provides the project with a vehicle for water chemistry analysis and the knowledge to make informed decisions.

Les Cheneaux Community Schools

The Les Cheneaux High School (LCHS) science classes have been performing chemical and biological assessments of at least two creeks within the Les Cheneaux Island watershed. Pearson and Beavertail

Creeks are as different as night and day. One courses through the most urban landscape in the watershed, and the other is a trout stream which has almost no development on its banks. The LCHS teacher provides students with applied learning examples, as well as the building of baseline data to track trends in water chemistry and biological communities. The Les Cheneaux Project has also empowered LCHS's Alternative Community Education Program (ACE) to participate in watershed monitoring. In each of the past two years, ACE students collected macro-invertebrates at each creek in the watershed. They continue to learn various habitats, macro-invertebrate taxonomy and identification, and those things that influence water quality. The watershed project will continue to sponsor ACE work with the environment.

The Nature Conservancy Partnership

The Nature Conservancy has identified the Great Lakes' marsh in the Les Cheneaux area as one of seven ecologically significant natural communities along the northern shore of Lake Huron. Since the early 1990's, the Nature Conservancy has partnered with the Les Cheneaux community through providing resources and collecting biodiversity information along the Lake Huron shoreline. During the 1990's, the Nature Conservancy helped to administer and facilitate funding to be used for beginning wetland plant and animal community descriptions and understanding of the natural and human-created factors affecting them. The University of Michigan (U of M), Michigan State University (MSU), and U.S. Geological Survey (USGS) research team collected data over a three-year period.

In October 1999, the research team compiled their results and submitted a report to Michigan Coastal Management Program titled, "Les Cheneaux Coastal Wetland Project: A Synthesis". Overall, the integrity of Les Cheneaux marshes were found to be in excellent ecological health and very diverse. In addition, a report on invertebrates was published in the December 1999 issue of *Wetlands*, "Development of a Preliminary Invertebrate Index of Biotic Integrity for Lake Huron Coastal Wetlands." Reports, such as these, were shared with the Les Cheneaux community and other partnering groups who make decisions about land and water use in and around marshes.

In July 1999, a community-wide Marsh Forum was held in Les Cheneaux to provide an opportunity for researchers to discuss with residents the results from the collaborative wetland project. The success of the public forum began excitement and awareness in the community for future research projects. Following the public forum, MSU, U of M, and USGS researchers designed projects that included local citizens in monitoring particular species and groups of organisms. Monitoring of yellow perch and other fishes, burrowing mayflies, dragonflies and damselflies, frogs and toads, and invertebrates comprised the primary indices of long-term biotic health measurement.

The perch skein survey, in its second year, was developed by the US Geological Survey to identify priority spawning habitats and fish egg mass quantities. A large number of local residents and a high school science class combed the shoreline marshes looking for perch skeins, counting their numbers, and measuring their sizes. This survey takes place during a two-week period in late April or as soon as the ice melts away from the shoreline. Also developed by the U.S. Geological Survey, were the Odonata (dragonfly and damselfly) and burrowing mayfly surveys. Volunteers scoured six bays for dragonfly and damselfly larval skins found attached to emergent vegetation during the summer months. Mayflies are widely recognized as excellent indicators of water quality and through collecting hatching dates and population estimates residents can track marsh health.

The University of Michigan developed a marsh fish survey, in which volunteers set out minnow traps baited with cat food at four bays. For a two-week period, the number of each species captured and water depths were documented. Minnow species have been determined to be susceptible and sensitive to polluted or disturbed habitat more than other fish species. Therefore, the percentage of minnows versus other fish more tolerant of disturbed habitat can provide an indication of marsh health and water quality. Michigan State University developed a study of aquatic invertebrates. The presence and percentage of water quality sensitive invertebrates can reveal an indication of wetland system health and diversity.

The Nature Conservancy and Les Cheneaux community have established a long-term and vital partnership with collegiate and governmental institutions for continuing research and expertise. These

projects provide an opportunity for the community to conduct research each year and use the information collected for making empowered decisions regarding shoreline threats. As the Les Cheneaux community begins further development of their economic base through nature-based tourism, monitoring programs such as these will be available for ongoing stewardship and measuring success for maintaining these special coastal marshes (Hadley 2000). The watershed project is committed to continuing this type of environmental activity in the watershed. It brings community together with technical service providers to work toward protecting our environment.

The Economic Forum

The Les Cheneaux Economic Forum is a voluntary coalition of concerned residents, business owners and local leaders created by the Les Cheneaux Chamber of Commerce in 1996. The goal of the forum is “a plan for economic development that preserves the beauty and nature of the area, and that inspires those who live here and those who will come in the future to maintain and enhance the quality of life in the community.” (CFED 1998) The forum is currently not active but the watershed project is committed to helping those involved in the past to carry on that goal, because it is consistent with the goals of the watershed project to protect the natural resources of this great place.

Section 8.2 Review of Local Ordinances

Les Cheneaux Watershed Council Assessment of Local Protective Regulations

Members of the Les Cheneaux Watershed Council, including the Clark Township Supervisor, a member of the Clark Township Planning Commission, and a reporter with the *St. Ignace News* assessed the Clark Township Comprehensive Plan, which is a guide for policy and decision making for all future land use within Clark Township, which is the dominant political district of the Les Cheneaux watershed. The plan was updated by the Clark Township Planning Commission in 1994 with the assistance of the Planning and Zoning Center, Inc. of Lansing, Michigan.

The Clark Township Comprehensive Plan was prepared as a foundation for, and depends primarily on, the Township’s zoning ordinance, subdivision regulations, and capital improvement program for its implementation. The plan has no regulatory power, but it does serve to document information key to the planning process for the future of the Les Cheneaux watershed. This assessment and report will provide an opportunity to inform the community about the relationship between public policy and the protection of natural resources, which is so important to the sustainability of the Les Cheneaux community. It is also coming in time for the Planning Commission’s plans for updating the plan and local ordinances. There is some opposition to more stringent land use or design regulations, particularly those that are made to protect the environment or ecology, etc. This report and eventual action through the Les Cheneaux Watershed Project’s implementation phase, will help motivate the community to participate in the revision process, and make their voices heard if they want Clark Township to enact and enforce better protection regulations for the environment, especially water quality.

The review considered two categories: surface water and ground water. The committee tried to identify the negative factors affecting each area.

The Comprehensive Plan

The plan goals and objectives are very compatible with water and environmental quality. The plan repeatedly addresses the need to preserve the watershed. Specific items that are included in the plan that when enforced will undoubtedly protect water quality:

- Open space preservation (retains vegetation for watershed health).
- Island properties should be minimum 200-foot waterfront. (Maintains shoreline vegetation)

- Vegetation buffering. (There are no ordinances dealing with this. Natural edges should be maintained to protect character. There are no ordinances protecting shoreline and natural character.)
- Density. (The plan calls for one acre for areas not served by sewer.)
- Stormwater runoff. (There are no guidelines for how to deal with runoff; i.e. retention basins etc)

While these are items that are specifically not covered in the ordinances, it is the general orientation of the ordinances that need to be modified to protect our natural resources.

The conclusion is that the existing Comprehensive Plan parallels watershed protection. Unfortunately, review of the Clark Township ordinances, illustrated that little is documented to protect the environment and water quality. In fact, the concepts above were not addressed. If the Township reworks the ordinances to conform to the plan, protection of the watershed would be vastly improved from the current status. If the ordinances are modernized to conform to the plan, methods must be instituted to ensure enforcement.

Ordinances

Review of the existing Clark Township zoning ordinances finds that the ordinances do not address the importance of watershed protection at all. Fortunately, there was recently a planning commission proposal to update the Comprehensive Plan and ordinances, and the township is applying for grant money to fund those changes. The Les Cheneaux watershed project will also be working with Clark Township to pursue resources to update the plan and create stronger regulations for the protection of natural resources. In the implementation phase of the Les Cheneaux Watershed Management Plan, project partners will:

- Research other ordinances for examples of success in watershed protection.
- Make a list of deficiencies in the existing ordinances (Shoreline protection, vegetation buffers, open space preservation, shorefront public areas and parks, island specific zoning, stormwater retention, etc.).
- Formally petition the township to bring the issue to the forefront.
- Sponsor education sessions for the key township decision makers.
- Try to get other area groups to join in the effort, which will increase the awareness and add to pressure to improve the ordinances and enforcement. (Islands Wildlife, Les Cheneaux Islands Association, Sportsman Club, Chippewa Tribe, etc.)
- Propose specific ordinance language for changes.
- Attend township and planning commission meetings to show an interest and show a presence.
- Get articles in the newspaper and club mailings to increase awareness.
- Recommend that LMAS chart what places in the watershed are most suitable for septic systems based on current soils data.
- Recommend low-density development on the islands because of the environmentally sensitive areas there and unique habitat, etc. A 200-foot minimum frontage requirement was adopted by the Planning Commission in the mid-1990s, but has never been enforced. The rule may have been tossed out. This should be revisited, since island development probably has some of the highest density, and seems to be getting worse with family compounds being broken up and sold as smaller lots. Islands lack adequate sewage disposal systems and public water supplies.

- Assess the need for a public water system. The Chippewa County Health Department once recommended Clark Township pursue a public system because of all the groundwater contamination in the area. According to the Comprehensive Plan, *“Private wells in select areas of the Township have become contaminated by failing septic systems. Most existing private wells are shallow; less than 100 feet deep. Furthermore, groundwater is in unconfined aquifers so there is no cap (clay, or other impervious material) between the upper and lower aquifer layers found within bedrock. The bedrock is comprised of dolomite limestone and is fractured due to glaciation and weathering over time. These fractures permit contaminants to easily migrate from upper to lower aquifers. The Chippewa County Health Department has recently required that all new wells be drilled to depths greater than 100 and that a grouting system, which seals the entire casing, be employed in an attempt to mitigate the migration of contaminants.” (CTCP 1994)*

Recently, the Clark Township Planning Commission announced firm plans to revise its master plan and zoning ordinance. Clark Township Officials and the Les Cheneaux watershed project partners will be seeking grant money to help fund the revisions.