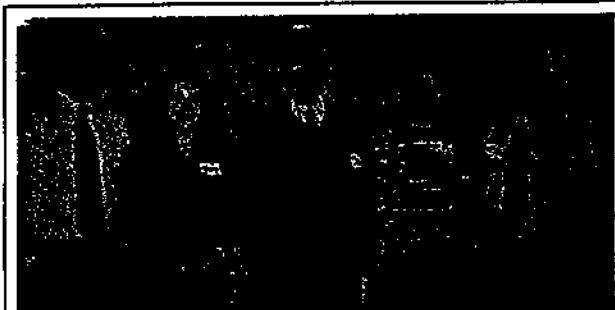


Minnesota Lakes Association

Sustainable Lakes Project: A Lake Management Model for the Future

September/October 1999

In 1997, The Minnesota Lakes Association, in cooperation with the University of Minnesota's Center for Urban and Regional Affairs (CURA), received \$270,000 in funding from the Legislative Commission on Minnesota Resources for the two-year Sustainable Lakes Project. The goal of the project was to develop comprehensive lake management plans for five pilot lakes in Minnesota, with the assistance of their lake associations, and to use their experiences and lake plans to develop a Sustainable Lake Management planning tool that other lake associations and communities could follow in planning for their own lake's future quality.



Pictured from left to right in the photo are: Chris Matthews, Ciara Schlichting, George Orning, Daphne Karypis, and Ben Oleson.

The Sustainable Lakes Management Project is a model developed around the general goals of sustainable development, which is a process of analyzing decisions in order to find a balance among economic activity, environmental requirements and the social needs of the people. "Essentially, sustainable development is the goal of a system of development that meets the basic needs of all people without compromising the ability of future generations to use and enjoy a high quality lake resource,"

said George Orning, Project Director.

The goal of each pilot lake association was to develop a vision of what they wanted their lake to look like 20 years from now and what needs to be accomplished to achieve the vision. Both short-term and long-term goals to accomplish the vision were set. The lake management planning process was community-based, involving community members and organizations that will be directly or indirectly affected by efforts to manage the lake.

The pilot plans are comprehensive and cover shoreland development, lake uses, water management, and water quality. In addition to creating a framework for managing individual lakes, the plans also create a framework within which major public developments can be planned and prioritized, as well as other public lake management efforts.

Funding for the Sustainable Lakes Project ended in June 1999, with the completion of the five lake plans. A workbook detailing the planning model will be published later this fall by MLA and will be available to other lake associations as a model to use in managing their own lakes.

Sustainable Plan Objectives

There were three objectives established for each pilot lake's Sustainable Lake Management Plan. One, to improve development and management practices of lakeshore property owners. Two,

concerns.

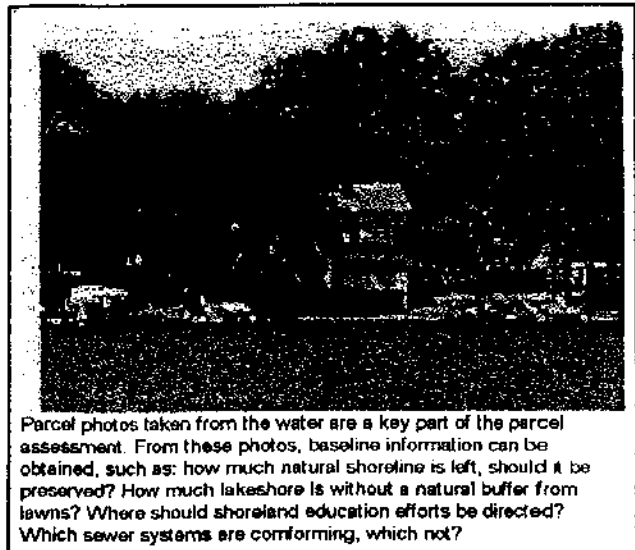
Parcel maps

Parcel mapping is based on the concept that each individual lakeshore property owner is a land use manager and their parcel of land is the basic level of lake management. If each individual property owner's management practices can be enhanced, collectively the overall water quality and landscape character of the lake can be preserved. If each lake association, working cooperatively with their local government planning unit, can develop and maintain a parcel file on each lakeshore property, then the individual parcel manager's impact on the lake can be assessed and monitored, and intervention can take place as necessary.

For the Sustainable Lakes Project, information was collected on lakeshore properties surrounding each of the five pilot lakes, including a parcel photo taken from the lake, and real estate codes were used to build a parcel database. Property information was obtained from various county departments. Septic system information, well information, length of property shoreline, market value, residential versus nonresidential homesteads, and parcel identification are some of the information that was incorporated into the parcel maps.

The parcel maps could also be used to map which parcels have received permits for shoreland alteration and aquatic plant renewal.

The parcel information, in addition to the lake basin and watershed information, helped the pilot lake associations assess the management needs of their lake and determine what approaches to take in planning for its sustainable future. For example, education and enforcement efforts can be targeted at parcels where systems have not been pumped on a regular schedule. Or, education can be targeted at parcel owners whose lawns are improperly managed or shorelines show evidence of soil erosion. Lake Kabekona is doing this. Parcel data can be used to develop common sewer maintenance programs, such as lakewide septic tank pumping contracts. They can also identify and document the need for preserving the natural state of shoreline parcels with development problems, like wetlands. Better linking of assessor records to the parcel's physical characteristics can help ensure that revenue streams from lakeshore property continue to exceed the costs of providing government services.



Parcel photos taken from the water are a key part of the parcel assessment. From these photos, baseline information can be obtained, such as: how much natural shoreline is left, should it be preserved? How much lakeshore is without a natural buffer from lawns? Where should shoreland education efforts be directed? Which sewer systems are conforming, which not?

Lake basins

Each pilot lake association received maps prepared by the Department of Natural Resources of depth contours, aquatic vegetation inventories, and high/low water levels for their lake. No specific water quality data was collected. Instead, water clarity and other monitoring data was assimilated into the lake basin reports. Aquatic plant inventories, when combined with depth contours and water clarity measurements, can help lake associations be better lake managers by knowing where the important aquatic resources are for fish management. High/low water levels



A Public Ownership map, such as this map of Kabekona Lake, shows dark areas where public land management can emphasize water quality outputs and areas that could be developed for recreation and scenic values or potential uses for municipal services.

organized by parcel, and public input from the lake user survey, it was possible to develop a set of recommended issues that each lake association should address. These issues were then presented to each association.

The planning phase of the project directly involved the members of the pilot lakes associations in making planning decisions based on the data collected in phase one and the recommendations from phase two. The

objective was to provide each participating lake association with information on their lake and surrounding watershed area that could be used to create a Sustainable Lake Plan unique to their individual lake.

Lake association meetings were held to present the collected data and data assessment recommendations. The data was examined in light of the lake association's pre-established vision and goals for lake management. Specific goals were then formulated into a Sustainable Lake Management Plan for that lake.

Phase 4: Lake Management Planning

The Sustainable Lake Management Plan for each lake had both short-term and long-term goals that can be quantitatively measured; specific actions, timelines and areas of responsibility spelled out; and a commitment to review the plan at regular intervals to assess progress and realign goals, if necessary. The plans also fostered integrated planning efforts with local government officials, through the local water planning process, to continuously evaluate and update the plans. For Sugar Lake, Wright County Environmental Services Department has agreed to update the initial data collected, plus the county will use the Sugar Lake plan as a model for the management of other County lakes.

Here are some examples of specific lake management goals for the pilot lakes.

- Land cover, slope, and soil maps of the Pine River Watershed are being used to locate areas on the Whitefish Chain of Lakes where development easements can be used to control land use and protect water quality. The Whitefish Property Owners Association is now involved in a cooperative effort with Crow Wing County and the City of Crosslake to assess the compliance status of over 2,000 septic systems.
- On Lake Kabekona, parcel maps identified undeveloped shoreland parcels with potential development problems; the lake association has purchased some parcels and is looking at purchasing others to prevent development. The Kabekona parcel database is being used by the association to track septic system maintenance, by parcel, and alert parcels about pumping on a three-year rotation. They have also negotiated lakewide pumping services and are exploring the purchase or lease of land for a "honey wagon" dumping site.
- On Sugar Lake, parcel maps helped target specific parcels for better lawn management and identified the need for more education on proper shoreland lawn management. The aquatic vegetation lake maps are being used to develop an aquatic vegetation management plan for the lake. In addition, the Association is attempting to form a Lake Improvement District to comprehensively handle sewer management.