

Lawns and Lakes: Strategies for Implementing and Regulating Lakeshore Development

INTRODUCTION

As Minnesotans, we feel a personal connection to the lakes. The lakes are a part of our identity as a state, "The Land of Ten Thousand Lakes". Besides the hard facts and science behind an ecosystem, it's important to remember that people are a major part of the system. With such a high value placed on one resource, it is important that lakeshore landowners and government bodies work together to create a system where the lakes can be conserved to be enjoyed by all.

There is extensive literature on what types of lawns and yardscapes best suit lakeshores to keep them natural and protect water quality. However, water quality is still negatively affected by lakeshore manipulation. Why don't homeowners and private property owners follow guidelines for yardscapes and shorelines that protect the aquatic ecology of the lakes? What are arguments against changing conventional shorelines to more natural ones? What regulations are in place on Minnesota lakes to restrict and guide lakeshore manipulation and development in residential areas? Do residents follow these guidelines and regulations? Is there conflict between residents and regulations? How can we better manage these yardscapes to make for healthier aquatic ecosystems in Minnesota lakes? By investigating the history of lakeshore development in Minnesota, it becomes clear that residential development is not new to Minnesota. However, that development has changed greatly in recent years and the suburbs become more inhabited. Looking at lawn structures and strategies for "natural" yards, there are many solutions for the problems around limiting runoff, maintaining biodiversity, and having an aesthetically pleasing and valuable yard. Bills and regulations are a good source to see what action each level of government takes on managing lakeshore manipulation and development. More intriguing are the opinions those regulations garner from homeowners and the public using the lakes.



A lakeshore home in Minnesota. The rocks offer minimal buffer between the lawn runoff and the lake.

METHODS

To investigate my research questions, I have looked into existing regulations and enforcement of lakeshore development laws. I have also researched what a conventional Minnesota yard looks like, and how those practices apply to Minnesota lakeshore properties as well. To find solutions to the problems presented by yards and the damage they create for aquatic ecosystems, I investigated successful efforts in development regulations and enforcement by looking to British Columbia, Canada and the practices and strategies they employ in residential lakeshore development and modification.

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ENVR 395

BARRIERS

A number of challenges face homeowners and regulatory agencies in creating more sustainable lakeshores. There are steps to arriving at a sustainable shoreline that involves knowing what needs to be done, who to contact to implement the physical changes, and being willing to put in the cost and energy to maintain the sustainable shoreline. There is a confusing maze of regulations to get through before changing existing shorelines. If a homeowner understands the regulations and gets the proper permits, they may not know what to do to create a lakeshore that would facilitate filtering runoff and reducing erosion. Even with regulations, there are still issues with development on lakeshores. Whether it is from homeowners being unaware, or the unwillingness to foot the cost of breaking regulations, or some other cause, there continue to be issues with developing lakeshores in a way that threatens the existing aquatic ecosystems. But the programs needed for teaching homeowners how to implement healthier yardscapes and shorelines lack funding. Without proper education on the issue, people will not even be aware that what they are doing with their lakeshores has a negative impact on the surrounding environment and that the aquatic ecosystem depends on them.

People also are not educated on what it means to have good water quality. Lakes with clear water are perceived as less polluted. Lakes with dense development are perceived as having poor water quality, regardless of actual water quality.

Even if homeowners were educated, the cost and processes of changing their lakeshore may be a barrier for them to actually take action. It may be necessary to obtain permits from government agencies before legally restoring wetland and lakeshore areas. This could be a turn-off to homeowners. In a conventional yard, there is aesthetic appeal in having lawn go right up to the shore with a type of armoring and no buffer zone.

SOLUTIONS

An example we can turn to comes from British Columbia, where the Canadian Ministry of the Environment has implemented a plan to evaluate, assess, and address the issue of residential lakeshore development in a way that is conducive to economic stimulation, aesthetically pleasing and valuable yards, and healthy aquatic ecosystems. The 2010 Lakeshore Development Compliance Project followed steps to identify the problems with lakeshore development and what specific environmental problems stemmed from development so that specific causes could be targeted. The Ministry conducted tests to see the types of shorelines, modifications made to shorelines, impacts caused by modifications and what aspects of water quality and shoreline composition changed after modification. Once these issues were identified, the Ministry was able to create permits that would be required for development. It was found that after these permits and regulations were enforced, people were forced to be knowledgeable about their modifications.

With this information, they were able to create a comprehensive document that shows what a homeowner would need to do in specific circumstances to renovate or modify shorelines as it pertains to vegetation, building permits, docks, and shoreline armoring. It contains a step-by-step guide to apply for permits and outlines potential costs.



A healthy lakeshore with buffer vegetation to reduce runoff and fallen debris to provide shoreline protection and habitat.

CONCLUSIONS

We can look to other states and countries to find solutions for sustainable lakeshore development. These solutions often include a variety of strategies to make regulations more understandable and accessible, hold landowners and homeowners to more strictly enforced regulations, reward sustainable development, educate the public on efforts to beautify and conserve the lakes around their homes, and provide a community where the culture can change so that property values are reflected in the longevity of the shoreline and health of aquatic ecosystems.

People do care about the quality of their lakes. They have an invested interest in maintaining water quality. I propose a combination of education efforts on the part of the communities that contain lakes, as well as a system to regulate and enforce building and zoning laws. It is important to have realistic goals for implementing shorelines that are conducive to aquatic ecosystems and conducive to maintaining the value of homes on lakes. The implementation, use, and enforcement of regulations; educational programs for homeowners and community members; and organized literature on specific logistics for native plant and land structures are needed in order to protect and improve existing shorelines so that Minnesota lakes have healthy aquatic ecosystems that benefit both the people and the environment.

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Regulations

Federal:

- "reduce pollutant emissions to our air and water... best management practices to control water and contaminant runoff"
- Broad goals that can be achieved a number of ways depending on each states' specific needs

State:

- Zones: to limit what a landowner can do with their property
- Building elevation must be at least 3 feet above the highest known water elevation
- Impervious surfaces must not cover more than 25% of each lot
- A permit is required to remove aquatic vegetation

City:

After the federal guidelines and state regulations, whatever a landowner does also has to go through the city and follow the guidelines for city planning.

HOA:

Individual requirements for homes and yards; such as lawn length, amount of yard designated for lawn, and the exterior of the house