

Governor's Clean Water Initiative: Shoreland Rules Update Project Article Number 1

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Your Lake, Our Lakes: We Need Modern Shoreland Standards

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In 1939, logging was still the most common activity around many lakes in this area. For example, in a 1939 DNR aerial photograph of White Sand and Perch lakes now in the city of Baxter, one can see logging of jack pine. Only one house on White Sand Lake and a handful on Perch Lake are visible in this photograph.

Things have changed. Today both lakes have more than 20 homes per shoreline mile, and the forest watershed has been converted to buildings, lawns, and pavement. But, has this landscape change resulted in a degradation of lake quality? Unfortunately the answer is yes for many lakes in north central Minnesota. Today's development pressures are outpacing the state's 1970s-era shoreland development standards.

Many of us use our memories to determine how the lake we live on or the lake we visit has changed. Scientists, however, can use paleolimnology techniques, which allow reconstruction of past conditions. Their studies have documented the consequences of shoreland development on lake water quality.

These studies usually show several key events for a lake.

- First, in many lakes, there is an increase in lake sediment accumulation in the early 20th century due to logging and other land disturbances.
- Second, the initial shoreland development on a lake generally had minimal impact on lake water quality.
- Third, the highest sediment accumulation often occurred during the peak construction phase of converting shoreland cabins to year-round homes. Water clarity may have remained stable, however, in many low-alkalinity lakes, water clarity decreased with development.
- These studies found no difference in phosphorus levels or water clarity from 1750 to 1995 for Itasca County lakes, but substantial increases in phosphorus levels and resulting decreases in water clarity were found for this same time period for central Minnesota lakes due to urbanization or agriculture.

In addition to water quality degradation, there is loss of habitat. Initially the greatest impact of shoreland development is habitat alterations, which results in declines in fish and wildlife populations. Then, as a lake's watershed becomes more urbanized, nutrient levels increase and water clarity decreases due to pollutant runoff, poor stormwater

management, and shoreline phosphorus inputs from shoreland septic systems and lawns to the lake.

The north central lakes region is growing fast, and the rate of development is predicted to increase. Many people are concerned about the consequences of poor development on water quality and fish and wildlife habitat. They should be.

However, development done right can reduce the negative consequences, while increasing property values. In addition, for some deeper lakes that are resilient to the additions of nutrients and pollution, restoring shoreline vegetation, rehabilitating rainwater infiltration in the watershed, and using conservation or low-impact development designs may reverse lake quality degradation.

The State of Minnesota sets minimum shoreland development standards that guide the use and development of shoreland property. These guidelines include minimum lot size, minimum water frontage, building setbacks, and subdivision and planned unit development regulations. The intent of these standards is to preserve and enhance the water quality, conserve the economic and natural environmental values of shorelands, and provide for wise use of water and land.

However, these standards were developed in 1970 when small cabins were the predominant form of development. These shoreland standards need to be updated to provide better tools to address water quality declines and habitat losses, while reflecting local resource conditions and needs.

The Governor's Clean Water Initiative pilot project in the north central lakes area aims to bring people together to create an alternative set of shoreland development standards in the lakes area. In coming weeks, the North Central Minnesota Lakes Shoreland Standards project will highlight specific development issues and suggested potential solutions achievable through updated standards. The updated standards may serve as model for local governments to adopt into their administered ordinances. Details of the shoreland rules update project can be found at: <http://www.dnr.state.mn.us/waters> [click on the Governor's Clean Water Initiative link], and comments can be emailed to shorelandupdate@dnr.state.mn.us .

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