

THE VALUE OF GOOD WATER QUALITY AND SHORELAND MANAGEMENT

(fact sheet #2 of the Shoreland Management and Lake Classification Series)



- ❖ **Wisconsin's lakes, rivers, streams and wetlands are a source of beauty and life. They play a fundamental role in our economy, our environment, our community, and in our spiritual well-being.**

A STATE OF WATER AND SHORELANDS

The state of Wisconsin has a wealth of lakes, rivers, streams and wetlands. Within state borders we have nearly 15,000 inland lakes, 42,000 miles of rivers and streams and 5.3 million acres of wetlands. These vast resources help support the state economy, beautify the landscape, serve as sites for recreation and social activity, support industry and agriculture, and sustain a rich network of plant and animal life.

A STATE OF RAPID SHORELAND DEVELOPMENT

Water is a magnet for human activity. People are regularly drawn to lakes and rivers for various recreational pursuits. A visit to a well known lake on a hot summer afternoon underlines the desirability of these areas. Motorboats, water skiers, swimmers and windsurfers abound.

Lakeshores are becoming particularly attractive as sites for new home development and the rate of construction for new dwellings is proceeding rapidly. In the north, lakes over 200 acres in size are nearly all developed and over half of lakes under 50 acres are ringed with homes. Many people have the opportunity to enjoy the state's lakes and lake shores. However, spiraling use and shoreland development, in particular, may have an adverse impact on lake water quality. Shoreland development is typically associated with an increase in hard surface area and an increase in sources of sediments and nutrients. Eutrophication is a process which occurs when excess sediments and nutrients enter the aquatic system and cause algae blooms and highly turbid conditions. Water clarity decreases as nuisance plant growth increases and quality of habitat for fish and other aquatic life declines. Shoreland zoning is one tool used to attempt to protect water quality from the adverse impacts of development.

We may reason that our quality of life should improve with a healthy lake in the community and that a healthy lake would result in high property values. But, in the absence of hard facts showing a relationship between property values and good water quality, there may be insufficient incentive for some to take action to protect

water quality. So we may also pose the question: do we have some proof that the market accounts for lake water quality and that this is reflected in shoreland property values?

THE VALUE OF GOOD WATER QUALITY

Determining the Value of Good water Quality

Whether or not water quality effects property values has been a source of debate for some time. Several studies have attempted to address this issue and have been based on the assumption that lake front properties, like other market goods, consist of a mix of characteristics; some characteristics, because of their nature or quality, have higher value than others (Michaels et al., 1996). The theory holds that the value which consumers place on one characteristic of a lake front property, such as water quality, would be reflected in the price of the property.

The Maine Study

A study whose purpose was to determine the role of water quality in property values was recently completed in the state of Maine. The study compared lakeshore properties varying only in terms of lake water quality. All other features of the property which could have conceivably changed the results of the study were controlled. *The study concluded that good water quality added as much as \$200 per frontage foot to the value of property* (Michaels et al., 1996).

This study alone would be inconclusive evidence of a relationship between water quality and property values, but additional studies in other parts of the country as well as in Wisconsin have reached similar conclusions (Brashares, 1985; David, 1968).

THE CASE FOR SHORELAND AND LAKE PROTECTION

If studies suggest that good water quality is reflected in property values, it follows that the protection of good water quality should become a community priority. Excessive loading of phosphorus and nitrogen rich sediment from shoreland development leads to poor water quality, nuisance plant growth and habitat degradation. In fact, the rate of phosphorus input on a 1990s style residential development is 700% higher than the rate of phosphorus input on a 1940s style development (Panuska, 1994). This discrepancy in phosphorus loading between the two time periods is the result of several factors: 1) A greater amount of hard surface coverage (roofs, driveways); and 2) the substitution of diverse and natural shore vegetation for fertilizer rich lawns. (For a more detailed discussion on the function of the shore buffer area for water quality protection and habitat, see fact sheet #4.)

Polluted runoff and phosphorus loading can be reduced through shoreland zoning controls and other protective measures such as greater setbacks and vegetation protection standards. With suitable management in place, property values and quality of life are likely to improve.

References and other sources of assistance:

- Michael, H.J., Boyle, K.J., Bouchard, R. 1996. Water Quality Affects Property Prices: A Case Study of Selected Maine Lakes, Maine Agricultural and Forest Experiment Station, University of Maine.
- Panuska, J. 1994. Internal memorandum on results of modeling study of phosphorus loading, WI Department of Natural Resources.
- Brashares, E. 1985. Estimating the instream value of lake water quality in southeast Michigan. Ph.D. dissertation, University of Michigan.
- David, E.L. 1968. Lakeshore property values: A guide to public investment in recreation. Water Resources Research 4(4): 697-707.

Drafted by Tamara Dudiak, UWEX-Lake Specialist (715-346-4744); tdudiak@uwsp.edu



For more information, contact your regional Department of Natural Resources lake coordinator, the Wisconsin Association of Lakes [800/542-5253] or UWEX/UW-Stevens Point [715-346-2116].