

## **Glen Lake Facts and Figures: A Basis for Decision-making**

The information below has been gleaned from technical reports and scientific journals and provides a basis and justification for considering a watershed-wide lake protection strategy for Glen Lake.

- With a surface area of nearly 5,000 acres, Glen Lake is in the top 1% of lakes in Michigan in terms of size.
- Glen Lake has excellent water quality. Nutrient levels are low and water transparency is exceptional. The lake is a unique and valuable natural resource.
- High quality lakes such as Glen Lake are rapidly disappearing. More frequent, high intensity storm events associated with climate change may be contributing to the decline.
- Ongoing monitoring indicates dissolved oxygen depletion is occurring in the deep waters of Glen Lake during late summer, an early warning sign that water quality is deteriorating.
- An Environmental Protection Agency study of lakes nationwide found that lakes lacking natural shoreline vegetation are three times more likely to be in poor biological condition. Shoreline vegetation helps to reduce the impact of nearly all pollutants that currently threaten Glen Lake.
- The water quality of Glen Lake is largely a reflection of land use activities in the watershed. The Glen Lake watershed is 29,721 acres and includes portions of four townships, three of which border directly on the lake.
- While much of the land bordering the lake is developed, most of the watershed is undeveloped and largely forested. Soils in the watershed are predominantly sand with relatively rapid permeability. When it rains, water quickly infiltrates into the ground and becomes groundwater, the primary source of water to Glen Lake. In fact, about 50% of Glen Lake's water supply is from groundwater.
- In the Glen Lake-Crystal River Watershed Management Plan it was noted: *Groundwater is an extremely important factor in the hydrological budget of Glen Lake. Therefore, it is essential that groundwater is replenished or "recharged." This underscores the importance of protecting upland areas from impervious surfaces or other development that can inhibit the percolation of precipitation through the soil into the groundwater and decrease groundwater recharge...*
- A study by the Center for Watershed Protection found that adverse water quality and hydrologic impacts have been observed in watersheds with as little as 10% imperviousness.
- Without proper development and redevelopment controls, future development of the watershed has the potential to adversely impact the quality and quantity of water entering Glen Lake. While development of the watershed is inevitable, low impact development techniques can be used to minimize these impacts.
- Master plans for all the townships bordering Glen Lake cite and recognize the value and importance of protecting Glen Lake and provide sound justification for land use regulations that protect water quality.
- To a large extent, future development in the watershed will be dictated by local planning and zoning.
- The proactive adoption of the Glen Lake-Crystal River Watershed Overlay District by the townships bordering Glen Lake would help to preserve the unique hydrologic balance that exists in the watershed and protect Glen Lake for years to come.