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## Canadian Environmental Law Association

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### A Shared Inheritance - Some Great Lakes Facts

Only one per cent of the water in the Great Lakes is renewable. The other 99 per cent is the inheritance from the last glacial melt, deposited over 10,000 years ago. Twenty per cent of the world's freshwater is in the Great Lakes making them the largest system of freshwater on earth.

The Great Lakes watershed, the area drained by the Great Lakes and their connecting channels, is only twice the size of the surface area of the Lakes. This area is smaller than occurs for most lakes and means that adjacent land uses will have significant impacts on the Lakes.

With a shoreline over 17,000 kilometres (10,000 miles) long and a population of over 33 million people, the Great Lakes ecosystem harbours 131 animal and plant species which are imperiled, or rare on a global scale. One quarter of Canada's people and 10% of the US population live in the Great Lakes Basin, 80% of whom get their drinking water from the Lakes. The Great Lakes are also the primary source of industrial water use for the region.

The International Joint Commission has identified over 300 toxic chemicals of concern in the waters and sediments of the Great Lakes. Drops in water levels mean those chemicals are less diluted. Lower lake levels also increase the risk of disturbing contaminated sediments making them more mobile for uptake through the food chain. The commercial viability of already shallow harbours and connecting channels can also be impacted.

Climate change adds more uncertainty and demands a prudent and comprehensive approach. Increasing levels of greenhouse gases are expected, over the next century, to contribute to significant increases in summer temperatures, lower lake levels (estimates range from 1/2 to 2.5 metres in different parts of the Great Lakes Basin), reduced wetlands, forests, cold water fish, decreased water quality and increased human health problems and crop damage, and higher costs for shipping and industries dependent on Great Lakes waters.

In 1992, daily water withdrawals from the Basin were about 3,650 billion litres (965 billion gallons). This is more than six times the average daily outflow from Lake Ontario to the St. Lawrence River. Ninety four per cent of those withdrawals were for hydroelectric power.

Consumptive use of the waters of the Great Lakes results in permanent water loss from the system. In 1992, consumptive use in the Great Lakes Basin amounted to 11 million litres of water per day. This was a 37% increase from the year before. Ontario, Wisconsin, and Michigan took over 70% of the water consumed in the Great Lakes Basin. Ontario consumed 27% of the total, Wisconsin 26% and Michigan 18%.

Global water use per capita has increased by over five times in the last 300 years. The US leads the world as the largest per capita water consumer with Canada as a close second. In the last century the global population has tripled, while use of water has increased sevenfold. In January of 1997, the United Nations released a report predicting that global water shortages in the next century will restrain economic and social development and increase conflicts between countries.