Great Lakes, troubled waters: Signs of distress

by Jon Magnuson in the September 22, 1999 issue

It's a little after 4 p.m. when I hear my name paged at Chicago's Children's Memorial Hospital. It's Lent 1971. I'm working as a student chaplain a few blocks west of Lake Michigan. Each day is a reminder that, even in the corridors of medicine's most prestigious cathedrals, death still reigns. A nurse from the intensive-care unit informs me that the parents of a six-week-old infant have telephoned to request that their daughter be baptized. She tells me that little Rebecca Ann, who was born with congenital abnormalities, has no more than a few hours to live. Due to bad weather and their own spiraling sense of helplessness, her parents have told the hospital that they will not be present.

Shaken and uneasy, I tell the nurse that I'll return after dinner. "I don't think that would be wise," she responds. "She'll be gone by the time you get back." Recognizing my concealed terror, she hands me a small plastic pill bottle filled with water. "Here," she says, "you can use this." The memory of those drops of water, drawn from the vast reservoir of Lake Michigan and then gently placed upon a dying child's forehead, have remained for me a sacramental link to the Great Lakes.

The future of those lakes—Michigan, Superior, Huron, Erie and Ontario—is sparking a new environmental battle. Congressman Bart Stupak (D., Mich.) was one of the first public officials to sound the alarm in 1998 when he opposed provisions of NAFTA that allowed the international marketing of Great Lakes water. We are now being forced to face a hard, uneasy truth: In parts of the world, a gallon of water already costs more than a gallon of oil. As the World Bank recently told its constituents, future wars will be fought over water, not oil.

The Great Lakes basin, populated by over 40 million people, is at the center of this collision of economic interests and environmental politics. The five Great Lakes hold more than 6,000 trillion gallons of water, about one-fifth of the world's fresh surface water supply. Residents in both the U.S. and Canada rely heavily on these lakes not

only for recreation and transportation, but for drinking and food.

It's long been confirmed that severe pollution has caused tumors and deformities in fish and wildlife in the basin, but scientists are now finding lesions and cancers in animals collected from locations that were thought to be uncontaminated. There is debate over whether these are natural occurrences or the result of a more insidious and unrecognized combination of man-made toxins. Among the more lethal of these combined chemical pollutants are those known as endocrine-disrupters, which mimic the action of estrogen in animal and human life.

Today, at the turn of the millennium, authorities are reluctantly acknowledging the extent of environmental damage. For years it's been known (but not widely publicized) that lake trout cannot naturally reproduce themselves in Lake Michigan. While unrestricted development of Lake Michigan's wetlands continues to destroy sensitive habitat, even more serious is the threat of alien species (plants, parasites, fish) that have been introduced via ballast water from international ships. Some of these nonindigenous species have already dramatically changed the Great Lakes' ecosystem. Earlier this year, in an effort to turn one of these alien predators into economic profit, Minnesota's Sea Grant attempted to market the lakes' sea lamprey in Portugal where they're prized as expensive delicacies. The proposal collapsed. Due to industrial toxins discharged into the basin, lamprey from the Great Lakes were found to have mercury levels too high to meet European Union standards for consumption.

Our economic prosperity has sown the seeds of our undoing. Since World War II, 70,000 synthetic chemicals have been created. We know now that thousands of these compounds, most of which find their way into our watersheds, do not break down in the environment for hundreds or even thousands of years. When confronted with concentrations of these substances, human and animal cells simply do not know how to react. Mutations are inevitable. As contamination is observed in birds and fish of the Great Lakes region, medical leaders are beginning to acknowledge the evidence. The National Institutes of Health agree that at least 80 percent of human cancers are environmentally triggered.

The politics of Great Lakes water is a complex and intriguing story. In 1909 the International Joint Commission was organized under the Boundary Waters Treaty to help the U.S. and Canada resolve disputes over the shared use of international waters. When Canada and the U.S. signed the 1972 Great Lakes Water Quality

Agreement, they publicly admitted that pollution in the Great Lakes is detrimental to health and property in both countries. But progress in halting dangerous industrial and municipal discharge practices has been slow. Canadian and U.S. interests are often at odds.

According to Gail Grantzberg, an ecotoxicologist and policy adviser with the Ontario Ministry of Environment, "Politicians on both sides of the border continue to place the environment at the bottom of the agenda because there's a lack of understanding of the intimate connection between environmental priorities and those of an economic, social and political nature."

According to Granzberg, the IJC has discovered that declining fish populations are also linked to the loss of coastal wetlands and shorelines. Researchers are convinced that most current contamination comes from persistent bioaccumulative toxins (chordane, mercury, dioxin) resulting from discharges that occurred 30 to 40 years ago. The beauty of Lake Michigan is still resplendent to the casual weekend swimmer or recreational boater. But there is a hidden story emerging. We are realizing that we will be paying for our environmental sins for generations to come.

It's a little before noon when I enter the Mackinaw County jail. The shores of Lake Huron are less than a mile distant. I'm here with a church council member to baptize a 19-year-old with a long list of legal offenses, the most recent being an assault with a deadly weapon. I read the liturgy; I place a bowl of water from Lake Huron on a wooden table in the visitor's room along with a Bible and a small cross. The 19-year-old tells me he has never been inside a church. "Should I kneel?" he asks. I nod. He kneels on the floor and, with no prompting, he opens his hands, palms upward. The water is splashed on his head, spilling onto the cement floor. I whisper, "For you, Larry, in the name of the Father, Son and Holy Spirit."

In terms of surface area, Lake Huron, including Georgian Bay, is the second-largest Great Lake and the third-largest freshwater lake in the world. Its coastal landscape offers some of the most pristine and spectacular vistas in all of the basin. Its watershed covers over 45,000 square miles. Today, lack of attention to habitat destruction and continued sewage and storm water discharges threaten its ecosystem. But it is the proliferation of what scientists call exotic or "alien" species that holds the most terrifying scenario for the future.

The introduction of the zebra and quagga mussels through ballast water of ships is a very recent phenomenon, part of the shadow side of a globalized economy. Ships carry cargo to the Great Lakes from harbors thousands of miles away. When taking on new cargoes at American and Canadian ports, they discharge water that was initially taken up during loading. In 1988 these shellfish arrived in Lake St. Clair via ballast water from Europe and Asia. Soon they were carried into the rest of the Great Lakes Basin.

Zebra and quagga mussels cement themselves to solid objects—buoys, boat hulls, boat engines, docks, rocks, even plants. They filter enormous quantities of lake water, straining out all the microscopic food other lake residents depend upon. They clog intake pipes and municipal water filtering systems. And they have no natural predators. Much of the western shore of Lake Erie is layered with these razor-sharp shellfish. On some beaches it's necessary to wear swimming shoes or boots to protect one's feet. The International Joint Commission is on a desperate hunt to find a way to stop these mussels and other alien species from changing the water quality of the lakes.

It's shortly before 11 a.m. on a Sunday morning and there is a bustle of activity in the sanctuary. I've been invited to officiate at the baptism of a young girl, a member of the Keweenaw Bay Indian Community, one of five reservations on the southern shores of Lake Superior. The girl's father and brother traveled down to Lake Superior's shore moments ago and have brought a bottle of lake water to use during the ritual. A cedar bough lies on the baptismal font as the congregation fills the pews. Moments later, her tiny head dripping wet, Cera gazes out over the gathered community while her father shares an Ojibway prayer and the congregation softly sings a haunting hymn composed by Jesuit missionaries 400 years ago.

Lake Superior is the most mysterious and impressive of the five bodies of water that shape the Great Lakes Basin. A little over 350 miles long and 180 miles wide, it is the cleanest, coldest and deepest of the lakes. With a water surface area measuring 37,000 square miles, it is the largest freshwater lake in the world by surface area. Over 800 creeks, rivers and streams make up its watershed. For these reasons, both the U.S. and Canada in 1992 designated Lake Superior as a "demonstration site" and funded a number of research groups and a Binational Forum to recommend strategies for protecting the lake. The citizen group operates on a consensus model and includes representatives from business, government, native and religious organizations.

Progress is slow. During negotiations in the early 1990s, Canada and the U.S. agreed on a "zero discharge" goal for pollutants into Lake Superior. This objective was to be phased in over 20 years. Initially the strategy was oriented toward industrial and municipal entities around the lake. But in a setback to what appeared to be reasonably attainable goals, the Lake Superior Binational Forum recently confirmed that the significant portion of toxic substances in the lake is now caused by pollution from agricultural runoff, storm water, chemical spills and atmospheric deposition (sometimes referred to as "atmospheric loading"). This deposit of pollutants arrives in the form of rain and moisture from sources sometimes thousands of miles away. Both countries have begun to recognize that we live in a global web of life more complex than anyone has ever imagined. If we are to transform and heal these environmental wounds, we will have to make fundamental and sacrificial changes in lifestyle, values and economic expectations. Without a spiritual foundation for these efforts, it may be impossible to find common ground.

If history serves as teacher, it will be a health crisis that finally forces real reform. Indicators are already present. Michigan's Department of Natural Resources recommends eating only one meal a week of lake trout from Lake Superior (the cleanest of all the Great Lakes) and none for pregnant women and young children. I recently asked a fish biologist at Michigan Technological University, "How many fish do you eat a month?" She replied, "I don't permit myself to eat fish from any of the Great Lakes."

Intensified research on Great Lakes water quality has generated good and bad news. The good news is about the often mysterious and magnificent biological cleansing functions of the natural world. Those who minimize the impact of our unbridled modern lifestyles on the natural world are, in one sense, correct: The earth will take care of itself.

The bad news is that this "self-correction" often takes hundreds, if not thousands, of years. In the process those species that cannot adapt become extinct. During the brutal redemptive processes of the earth's natural cycles, there is no guarantee that the quality of human life as we know it—in spite of our technology—will be able to sustain itself. It's not the water of the Great Lakes we finally have to worry about. It's ourselves.

In the fourth century, St. John Chrysostom reflected on the sacrament of baptism. "Water," he wrote, "represents death and internment, but also life and resurrection. . . . When we plunge our head beneath water and then emerge, our old selves are

lost. We are cleansed, we rise anew." With the commitments of Canada and the U.S. to democratic politics and free-market economies, the struggle over the future of Great Lakes water will only grow more intense and polarized. The future of our water—and of our culture—will depend on our funding of hard research, our ability to sustain open dialogue, a courage of commitment and, perhaps more than anything, the insight and faithfulness of our prayers.