



CODE RED IN A BLUE WATER BASIN

The Diversion

The Cuyahoga River: No more fires, but now a shortage of clean water

IN THE 1960S THE CUYAHOGA RIVER WAS THE NATIONAL poster child for the country's severe lack of modern clean water laws. The river, which flows through northeast Ohio, had a 33-year history of catching fire due to the extraordinary amounts of pollution and floating debris choking its waters. Since then, improved water *quality* standards have helped to partially cleanse the river. But the Cuyahoga is still a poster child: It dramatically demonstrates the pressing need for better safeguarding Great Lakes water *quantity*.

Great Lakes governments last approved a large and steady water diversion in 1998. That is when Akron, Ohio, a city within the Great Lakes Basin, received permission to sell its municipal water from the Cuyahoga River — which flows into Lake Erie — to expanding suburban areas outside the basin.

The project fueled growth in water-strapped communities. But it decreased already low water levels in the Cuyahoga, diminished its water quality, and largely ignored legitimate citizen concerns. Several communities that value the river for fishing, boating, and enriching urban areas sued to end the diversion. The legal struggle demonstrates that existing laws do not give citizens tools that can protect their local water from ill-advised diversions.

“Most people understand how the Clean Water Act has helped to improve the water quality of the Cuyahoga River,” said Robert Heath, director of the Water Resources Research Institute at Kent State University. “But the City of Akron has developed a water supply system that benefits its residents and several out-of-basin communities at the cost of in-basin communities and the wildlife of the Cuyahoga. We need water management practices that protect the flows of our rivers and keep Great Lakes water in the Great Lakes Basin.”

Existing Laws Fall Short

The Cuyahoga vividly demonstrates a problem requiring immediate attention: Legal protections from unrestrained water uses, including exports, are weak or nonexistent throughout the Great Lakes region.

The Great Lakes Charter, which eight Great Lakes states and two Canadian provinces signed in 1985 in order to manage



Associated Press, AP

Rapid urbanization and the growing demand for water challenge the Cuyahoga River as it flows to Lake Erie.

the world's largest supply of surface fresh water, provides some general guidelines for removing water from the basin. The non-binding charter requires prior notice and consent among all the Great Lakes governors for any new or increased withdrawal that exceeds five million gallons per day. The U.S. Congress embraced

these principles in the federal Water Resources Development Act of 1986.

However, legal experts warn that new, international trade agreements erode the federal law's authority. With climate change threatening to redistribute water around the globe, ongoing urbanization altering the basin's water cycle, and population growth promising still more thirsty people, the problem worsens every day. Local decision-makers need rules based on efficiency and environmental improvement to guide future water use policies.

Unless more steps are taken, water use conflicts will continue to spread across the basin until the arrival of what many see as the ultimate specter — wholesale diversion of Great Lakes water outside the basin's natural boundaries. Private companies have in the past proposed to ship Great Lakes water to China.

Conserve, Protect, Improve

The ten U.S. and Canadian governments surrounding the Great Lakes signed an agreement in June 2001 to ensure that these and other 21st-century pressures do not drain the region's economy, environment, and quality of life. That agreement, the Great Lakes Charter Annex, offers a framework to help guide the water use decisions of individual states and provinces toward a common goal: Protecting and enhancing Great Lakes

waters, including local water supplies and the lakes, rivers, and aquifers that make up the freshwater ecosystem.

"Our Great Lakes provide us with a seemingly endless supply of our most fundamental need — water," said Ohio Governor Bob Taft when he signed the Annex. "The steps we commit to in signing the Annex today will help ensure that the Great Lakes will remain a truly great asset available for recreation, job creation, and basic sustenance far into the future.

"By preserving, restoring, protecting, and improving the Great Lakes," the governor added, "we are working to guarantee enough water for business use, residential growth, and a healthy environment that encourages people to relocate to the Great Lakes region."

The visionary principles of the Great Lakes Charter Annex remain non-binding, however, despite broad public support for a comprehensive system of rules to evaluate water withdrawal projects, safeguard supply, and protect freshwater resources such as the Cuyahoga River.

Ohio and other Great Lakes governments must absorb the agreement's modern water use principles — conservation, do no harm, and improvement — into local law, make the standards legally enforceable, and ensure robust water supplies for future generations. Leaders have committed to doing so by June 2004.

YOU CAN HELP

Tell your governor and elected officials that you support implementation of the Great Lakes Charter Annex and strong state legislation to protect freshwater resources. Truly effective laws must:

- Regulate high-capacity water pumping from lakes, rivers, and underground water sources.
- Require all water users to adopt an ethic of conservation that ensures sustainable water use.
- Guarantee that new water withdrawal projects do not harm, and ultimately improve, the freshwater ecosystem.

GOVERNOR CONTACT INFORMATION

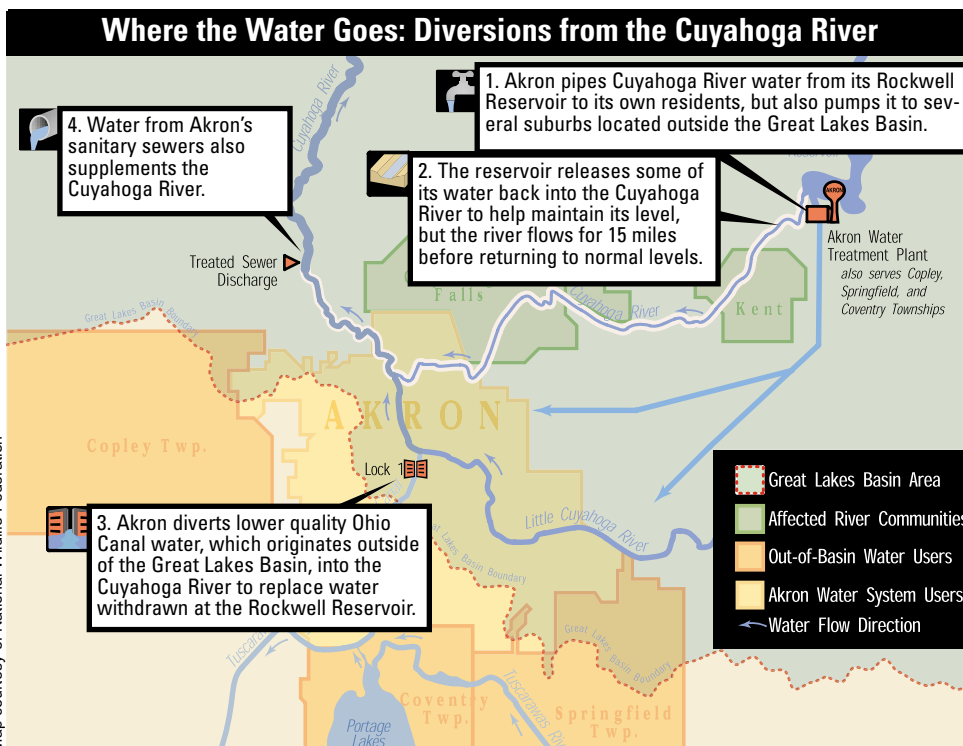
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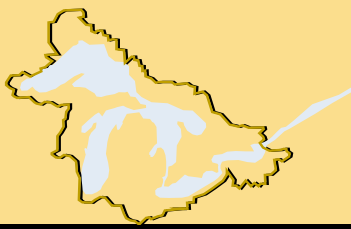
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The People

Pumped Out: Quarries' water withdrawals leave homeowners high and dry

ARETTA SCHILS USED TO INVITE NEARLY 200 PEOPLE over to her house every Fourth of July for a bang-up party. But no more: Her water supply has become so unreliable that Ms. Schils now makes other plans on that hottest of summer holidays.

"We had to give it up because that many people just use too much water," she says of her sadly missed annual gathering. "Lifestyles definitely change when you have little or no water."

Ms. Schils does not live in Arizona or Utah. In fact, she lives in southeast Michigan's low-lying Monroe County, which borders Lake Erie. She lives about 30 miles from the big lake, the 11th-largest in the world, and her county is in the middle of the planet's largest supply of fresh surface water. So, like 2.6 million other citizens in Michigan who also depend on private wells — and like millions more throughout the Great Lakes Basin — Ms. Schils was always confident that she would have an abundant supply of clean, fresh water.

But drought and large, unregulated groundwater withdrawals, particularly by heavy rock mining operations concentrated in the county, have caused significant drops in local under-



Clive Lipchin

When her well's water level fell drastically, Aretta Schils began conserving and recycling water to prevent it from completely drying up.

ground water levels. Today the county's drastically lower water table levels have caused wells to go dry, allowed toxic substances like sulfur to contaminate many household wells, and forced many residents to bear the cost of drilling new wells or importing water for drinking and domestic use.

Planning for People and Water

Monroe County generally sits atop enough groundwater to meet domestic needs, according to the United States Geologic Survey. Since the early 1990's, however, the amount of water with-

drawn by rock quarries has more than doubled and several thousand homes across five different local jurisdictions have lost — either sporadically or permanently — access to a secure water supply.

The problem extends beyond Monroe County. Unplanned community growth and the lack of clear standards for local water use have led to high management costs, environmental damage, and shortages for citizens across the Great Lakes Basin in areas of Michigan, New York, Wisconsin, and Illinois.

Great Lakes governments can prevent these problems from growing and avoid new conflicts by establishing a coordinated policy that promotes efficient water use, creates clear standards for all water withdrawals, and strives to improve the integrity of the region's freshwater resources.

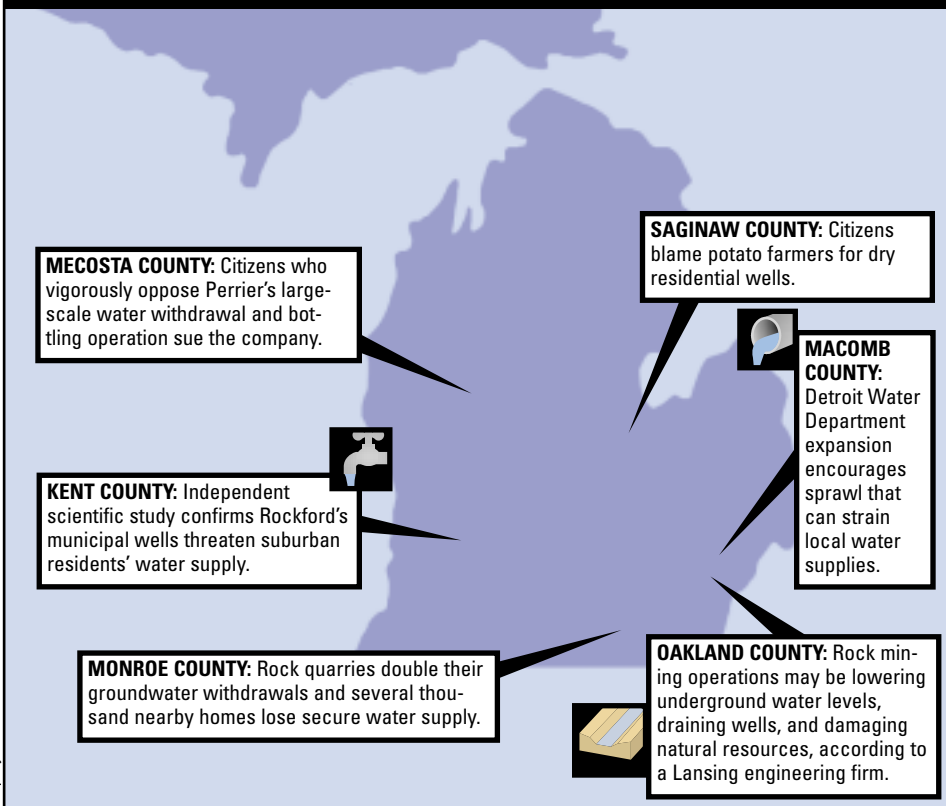


Clive Lipchin

Because their wells have either gone dry or become polluted, some residents of Monroe County, Mich., must pay to have water delivered to their homes.

Problems in the Heart of the Great Lakes Basin

Map by MLUI/Source: National Wildlife Federation



Costing the Community

Until this occurs, the current absence of comprehensive water withdrawal standards will continue to drain financial resources, hurt the local ecology, and lower the quality of life in Monroe County.

Ms. Schils lowered her groundwater pump 23 feet deeper into her well to maintain some semblance of a reliable supply. But many of her neighbors have had to take much more drastic measures. Some have completely replaced their wells, which can cost as much as \$5,000. Augusta Township installed 26 miles of municipal water lines to serve some 650 homes where wells had run dry. This cost the community approximately \$7 million and now fuels a rural building boom that threatens to further stress local water supplies. Some citizens also report depreciated property values, wetlands loss, the death of mature trees, and the disappearance of native plant species.

Conserve, Protect, Improve

In June 2001, Michigan's then-Governor John Engler joined with leaders from other Great Lakes governments trying to avert more such problems in the future. Together, they signed the Great Lakes Charter Annex, a framework designed to

guide the water use decisions of individual states and provinces toward a common goal: Protecting and enhancing Great Lakes waters, including the local water supplies and the lakes, rivers, and aquifers that make up the freshwater ecosystem.

"Reaching consensus to manage the waters of the Great Lakes on the basis of actually improving these resources — not presiding over their gradual degradation — meets the challenge of a growing, thriving society seeking to reconcile conservation and economic growth," Gov. Engler said while signing the Annex. "In the future, water projects will be approved only if they do more good than harm."

Yet today, despite continued bipartisan support in Michigan for a comprehensive system of rules to evaluate water withdrawal projects, the visionary principles of the Great Lakes Charter Annex remain non-binding.

Michigan and other Great Lakes governments must absorb the agreement's modern water use principles — conservation, do no harm, and improvement — into local law, make the standards legally enforceable, and prevent conflicts like those in Monroe County from burdening future generations. Leaders have committed to doing so by June 2004.

YOU CAN HELP

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- Regulate high-capacity water pumping from lakes, rivers, and underground water sources.
- Require all water users to adopt an ethic of conservation that ensures sustainable water use.
- Guarantee that new water withdrawal projects do not harm, and ultimately improve, the freshwater ecosystem.

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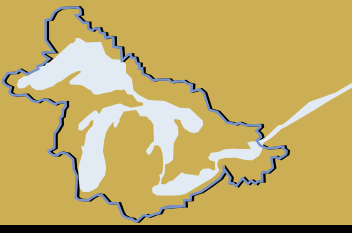
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The Fish

A River's Message: Falling water, fish levels demand government action

THE ST. JOSEPH RIVER RISES FROM BAW BEESE LAKE and meanders 210 miles across Michigan and Indiana to Lake Michigan. Along its way to the sixth largest freshwater lake in the world, the St. Joe nourishes farms, towns, and the fish and wildlife that bring outdoor enthusiasts to its banks and to many nearby businesses.

Today this river, like the lakes, underground water, and other streams cycling through the Great Lakes ecosystem, faces many 21st-century challenges. Ongoing drought, urbanization, population growth, and unsupervised and ever-increasing water withdrawals are some of the trends harming the natural characteristics and productivity of the St. Joe watershed. Such problems can erode the region's economy, culture, and quality of life.

Less Water, Less Fish, Less Economic Activity

The St. Joe's two most critical problems are strongly interrelated: Falling water levels and plummeting fish populations.

One reason the river is down is the drought conditions Indiana has experienced since 1986. But federal research shows that groundwater levels in the St. Joe River basin did not begin declining steadily until 1996.

This is the result of another, subtler trend: Increased pumping from wells in the St. Joe River basin to meet growing residential, commercial, and agricultural demands. Together with surface water withdrawals, the pumping reduces the amount of water that enters the river, maintains its water level, and recharges the Great Lakes.

Recent declines in the river's fish population among species dependent on the strong currents and cold waters that high waters bring have been dramatic. An average of 10,000 fish swim up the St. Joseph River system to spawn each autumn. But a mere 2,000 made the run in 2002. It was the worst fishing year in recent times and local business owners paid the price.

"We get a lot of publicity in *Field and Stream* and other big sporting magazines," Dick Parker, owner of Parker's Tackle, told WNDU television news in South Bend. "The word's out that there's no fish here. Sales are down."

Anglers contribute approximately \$2.75 million annually to the local economy. But the economic threat goes beyond sports shops. Low water levels can threaten other outdoor recreational activities, as well as the region's homes and farms.

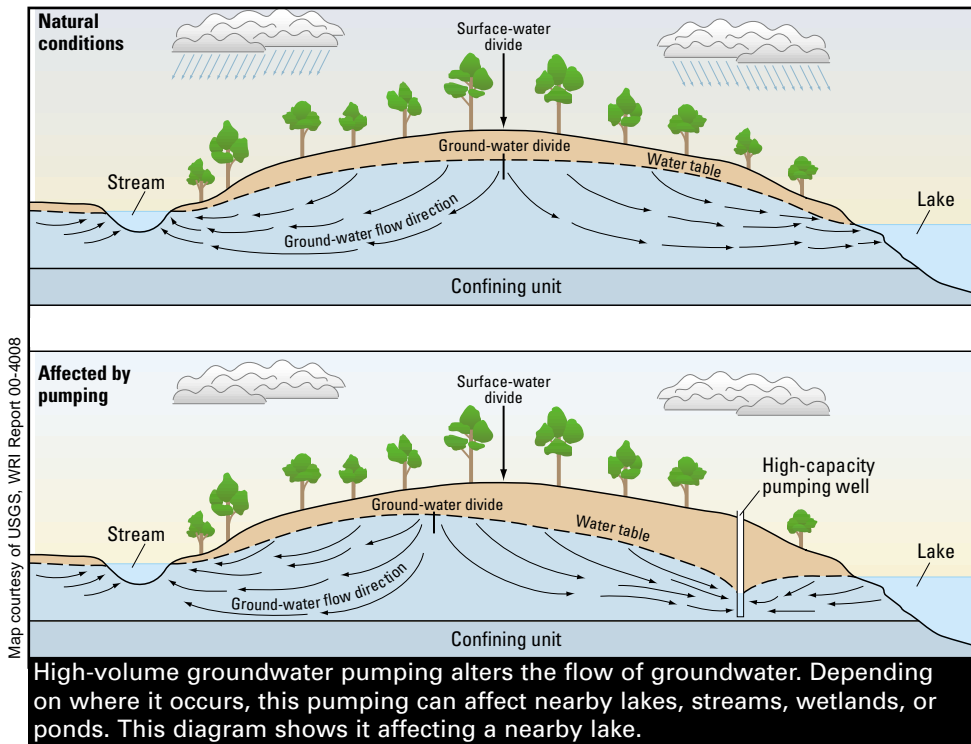
Wanted: A Water-Saving Policy

The St. Joe watershed, including its groundwater, relies solely on rain and snow for replenishment. Precipitation seeps into the



Jerry Dennis

Sharply lower water levels frequently affect fish populations and reduce the amount of local economic activity that anglers can generate.



Map courtesy of USGS, WRI Report 00-4008

High-volume groundwater pumping alters the flow of groundwater. Depending on where it occurs, this pumping can affect nearby lakes, streams, wetlands, or ponds. This diagram shows it affecting a nearby lake.

subsurface and migrates through porous layers of rock, sand, and gravel known as aquifers. These aquifers, when well charged, sustain wetlands and forests in times of drought and also interconnect and sustain an elaborate web of lakes, rivers, and other natural habitats.

The region's leaders understand the economic and ecological value of freshwater resources. But they continue to lack basic strategies or governmental tools to manage large withdrawals. Both Michigan and Indiana, in fact, typically permit *any* new water project, regardless of its size, drought conditions, or potential risk to nearby well owners, streams, or ponds.

This is why the region urgently needs a modern water policy with clear standards for withdrawals, efficient water use, and freshwater quality improvement. Without such a comprehensive policy, the region's economy and ecology remain at risk.

Conserve, Protect, Improve

In June 2001, the governors of Michigan and Indiana joined with the other Great Lakes governors and premiers to begin the necessary task of greatly improving their joint stewardship of the waters that unite them. They signed the Great Lakes Charter Annex, a commitment to guiding the water use decisions of each individual state and Canadian province toward a cru-

cial, common goal: Protecting and enhancing Great Lakes waters, including local water supplies and the lakes, rivers, and aquifers that make up the freshwater ecosystem.

At the time of the signing, the commitment of the region's leaders seemed clear. "The economy of the Great Lakes region was built on the availability of water," said Pennsylvania's then-Governor Tom Ridge. "We cannot take for granted that the availability of water for our citizens is limitless and that we will always be able to drink clean water as well as swim and fish. This is dependent upon our taking action now to protect this precious natural resource."

But today, despite growing concerns about the global water supply and broad public support for managing water withdrawals, the visionary principles of the Annex remain non-binding.

Michigan, Indiana, and other Great Lakes governments must absorb the agreement's modern water-use principles — conservation, do no harm, and improvement — into local law, make them legally enforceable, and ensure that public assets such as the St. Joseph watershed remain brimming with clean water and robust fish populations for the enjoyment of future generations. Leaders have committed to doing so by June 2004.

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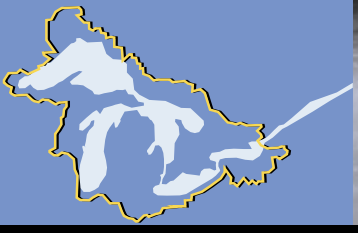
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Western Shore

Lake Michigan's Wild West Coast: Looking for water laws and order

THE CITIES FLOURISHING ALONG LAKE MICHIGAN'S western shore are using up the water from the region's aquifers at a prodigious and unsustainable rate. From the northern suburbs of Green Bay to the south side of Chicago, unchecked development has drained local water supplies, spoiled water quality, and motivated public officials to search for bigger and better sources of fresh water — like Lake Michigan.

This is why the entire Great Lakes community must enact modern policies to protect its most important resource from poorly planned growth, water waste, apathy, and ignorance. But, observers say, those policies are nowhere in sight.

"Frequently, we're flying blind," said Dr. George Kraft, a professor of water resources at the University of Wisconsin-Stevens Point. "In many places we don't have data on stream flows or groundwater levels. We also don't know who the heck is pumping what. To a large degree, it's the Wild West out there. If you can drill a well, you can have the water."

No Limits, Big Consequences

This 19th-century attitude toward water resources plagues the Great Lakes community. Water supply levels are falling rapidly in many places across the Great Lakes Basin — in New York, Ohio, and Illinois — as homes, farms, and factories draw heavily on underground reserves. Even in Michigan, the heart of the Great Lakes Basin, the imbalance between rising consumption and available supply has led to water-use conflicts, scarcity, and legal challenges.

But falling groundwater levels and inadequate groundwater management policies are particularly acute along Lake Michigan's west shore and threaten to make even responsible residential, business, and recreational development more difficult.

"The groundwater levels across broad chunks of Wisconsin are going down substantially due to lots of pumping and the nature of the geology," Dr. Kraft said. "In the Madison area a number of springs have dried up. In the Lower Fox River valley groundwater levels have been drawn down an estimated 300 feet below where they were at predevelopment times. And in the Milwaukee area there's been a maximum draw-down of 450-some feet."

Groundwater levels in parts of Wisconsin are now falling at nearly 17 feet per year, according to Dr. Kraft. They have fallen as much as 900 feet in the Chicago metropolitan area.



While Chicago draws its drinking water directly from Lake Michigan, many of its suburbs rely on underground aquifers for their needs.

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Communities across the Great Lakes Basin rely on underground aquifers to supply water for residential, industrial, and agricultural needs.

Basic Science Requires Basic Laws

Groundwater is much more important to the inner workings of the Great Lakes ecosystem than policy makers realize, according to the United States Geologic Survey. Approximately 35 percent of the water that feeds Lake Michigan originates from groundwater that flows into rivers and streams.

Only rain and snow replenish the groundwater system. This water seeps into the subsurface and migrates slowly through aquifers — porous layers of rock, sand, and gravel — which sustain wetlands and forests in times of drought. These aquifers also connect elaborate webs of lakes, rivers, and other natural habitats even as they provide clean water for homes, farms, factories, and recreation.

But despite this understanding of groundwater's economic and ecological value, Great Lakes communities lack basic strategies for managing large withdrawals. Wisconsin and Illinois typically permit unlimited, new withdrawals from aquifers regardless of how they might affect nearby lakes, streams, or other well owners.

The region needs a modern water policy that recognizes how interrelated ground and surface waters are. The policy must set standards for withdrawals, promote efficient water use, and improve the integrity of the region's supply.

Conserve, Protect, Improve

In 2001, the governors of Illinois and

Wisconsin signed an agreement with other U.S. states and Canadian provinces in the Great Lakes Basin. They pledged to support the Great Lakes Charter Annex, a road map to help guide the water-use decisions of individual states and provinces toward a common goal: Protecting and enhancing Great Lakes waters, including local water supplies and the lakes, rivers, and aquifers that make up the freshwater ecosystem.

"The Annex is an important step in the ongoing process of creating a strong regional water management system for the Great Lakes," said then-Wisconsin Governor Scott McCallum. "Lakes Superior and Michigan are a treasure we must protect by ensuring that our water is used wisely and effectively to the benefit of all our citizens."

Wisconsin's new governor, Jim Doyle, renewed the call for modern laws to regulate high capacity wells in April 2003. But despite continued bipartisan support for comprehensive water supply safeguards, the Annex's visionary principles remain non-binding.

Wisconsin and other Great Lakes governments must absorb the agreement's modern water use principles — conservation, do no harm, and improvement — into local law, make the standards legally enforceable, and ensure robust water supplies for future generations. Leaders have committed to doing so by June 2004.