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## Water Pressures Protecting the Great Lakes



Sunday, June 8, 2003



Dale G. Young / The Detroit News

**Rosario S. Heide, a Detroit Water Department supervisor, performs chlorine tests on the water. There's concern that too many water users will wreck the lakes that power the region's commerce, without tough laws to govern that use.**

### Unquenchable thirst imperils Great Lakes

Increased usage in Michigan and pressure for water access from surrounding communities threaten already-low lake levels

By Gary Heinlein and Charlie Cain / *Detroit News Lansing Bureau*

The Great Lakes are under seige.

The shorelines that define our state geographically and economically are likely to become battlefields between Michigan and thirsty cities, states and even nations. Those battles could wreck the lakes that power the region's commerce, and irreversibly damage their



Dale G. Young / The Detroit News

**Chicago's suburbs want Lake Michigan water so they can continue growing. But lock operator Marilyn Bauer recently closed**

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fragile ecology.

Fighting for access to the water are forces from near and far. Communities that already draw their water from the lakes are siphoning off more and more; cities and towns not allowed to take Great Lakes water are demanding it; there's even a remote possibility that parched regions of the United States and other nations will request it, too.

Demand is at a record high -- and will only increase in years to come -- at a time when a dry spell has dropped lake levels to a near-record low.

It's not a question of whether a water war is looming, but when it will be fought, and -- most importantly to The Great Lakes State -- who will win.

A trillion gallons a day are taken from a seemingly bottomless supply of Great Lakes water that, today, doesn't seem so bottomless.

Experts say the best defense is an interstate pact that will impose conservation measures and costs on Great Lakes citizens, to make it economically unfeasible for others to come after the water.

That will mean enacting restrictions on water use and taxing ourselves, at the tap, to enforce the strictures and protect the lakes.

That way, Great Lakes citizens will show they aren't careless with their own resource, and put their states in a better

**the lock because the lake level already was low.**

**About this series**

Starting today, The Detroit News examines how population growth, water shortages and commercial use -- such as farming and manufacturing -- endanger the Great Lakes.

**Today: Ownership**

The greatest threat of water diversion from the Great Lakes comes from Michigan's neighbors.

**Monday: Groundwater**

Communities say businesses that take Michigan's underground water threaten fresh water supplies.

**CyberSurvey**

Great Lakes water loss

Are you concerned about Great Lake water loss? Please share your thoughts.

- Very concerned
- Somewhat concerned
- Not concerned

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Morry Gash

**Waukesha, Wis., wants Great Lakes water because, city water chief Daniel Duchniak says, its wells are contaminated by radium.;**

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position to fend off interlopers.

It could be a high cost for Michigan residents. But the cost of doing nothing could be even greater.

"We will not be able to take water for granted in the future, and that goes for the United States as well," said Robert Engelman, vice president of research at the Washington, D.C., study group, Population Action International.

While it's hard to put a price tag on the Great Lakes' value to Michigan and the region, they are critical to this state's economy, and its identity: Michigan's \$12.5 billion tourist industry depends heavily on the lakes, and the state leads the nation with nearly 1 million boat registrations. When lake levels drop, so does the economy -- the state loses tens of millions of dollars in reduced cargo on Great Lakes freighters, electrical generation and recreational spending.

Where Michigan sees fishing and shipping, an increasingly thirsty world sees a water cooler the size of Texas. An estimated 500 million people around the globe have too little water. As many as 3.5 billion people will face water shortages in 50 years.

Water could well be the oil of the next century, and Michigan will be the Middle East.

"The rest of the world is taking the imminent water crisis very seriously," said Toronto environmental lawyer Sarah Miller.



Dale G. Young / The Detroit News

**Lowell, Ind., lost a fight to have Michigan water pumped its way. Jules and Kathy Chopp have been drinking bottled water since moving to Lowell.**

### Water consumption by state, province

Each day, 2.5 billion gallons of water are taken and not returned from the Great Lakes and their tributaries.

State, province	Gallons per day (In millions)
Ontario (Canada)	675 27%
<b>Michigan</b>	<b>525</b> 21%
Wisconsin	500 20%
Indiana	175 7%
New York	150 6%
Quebec (Canada)	150 6%
Ohio	150 6%
Illinois	100 4%
Minnesota	0.5 2%
Pennsylvania	0.25 1%

Source: Great Lakes Commission/  
International Joint Commission  
*The Detroit News*

"They're going to be knocking on our door some day, and the clock is running."

Great Lakes watchers were first jolted by a series of 1980s schemes to send billions of gallons of water westward in pipes or canals to bolster the Mississippi, the Missouri or the country's biggest aquifer. And, in 1998, a Canadian businessman gained permission to ship Lake Superior water to Asia.

None of those diversions happened, but future attempts are likely.

That's why, experts say, an interstate pact is necessary. State regulations that simply prohibit Great Lakes diversions very likely would be unconstitutional under the federal interstate

commerce clause, according to Chris Shafer, an authority on environmental law at Thomas M. Cooley Law School in Lansing. But statutes that evenhandedly regulate water withdrawals for legitimate purposes, such as conserving water or protecting resources, are more likely to stand up, Shafer says.

In hopes of encouraging the kind of conservation that may keep the water wolves at bay, Chicago Mayor Richard Daley this spring proposed installing water meters on 350,000 of the city's 510,000 homes and businesses that don't have them. Those Chicagoans would, for the first time, pay rates based on usage, rather than a flat fee. The plan still is under consideration.

### Nearby pressures

Lowell, Ind., doesn't look like a threat to the Great Lakes. The town of 7,500 tucked amid farms is just five miles from the Great Lakes Basin. It wants water from nearby Lake Michigan. Michigan says no.

The 1.7 million gallons a day Lowell wants to relieve its wells are a symbol of the most immediate threat to the Great Lakes -- diversion to the growing towns and suburbs outside the basin.

The Great Lakes basin spreads across 291,200 square miles in eight states and two Canadian provinces. Rain that falls in that area drains into the lakes.

In 1992, Michigan Gov. John Engler rejected a request from Lowell to tap into Lake Michigan water after the request was approved by the governors of the other Great Lakes states -- a difference of opinion that says as much about politics as geography.

## Great Lakes water usage

Here's how water is consumed each day in the Great Lakes Basin.

Use	Gallons per day (In millions)
Irrigation	725 29%
Public water supplies	700 28%
Industrial	600 24%
Nuclear power plants	150 6%
Fossil fuel power plants	150 6%
Domestic wells	100 4%
Livestock watering	75 3%

Source: International Joint Commission  
*The Detroit News*

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Michigan is the only state that is completely within the basin; only parts of the other Great Lakes states fall inside that boundary. Those states will feel pressure from within their borders to divert Great Lakes water outside the basin to sprawling communities.

Detroit, Chicago and Milwaukee are among the cities that already draw their water from the lakes. But another tier of cities outside the basin boundary is sidling up to the Great Lakes trough.

Lowell is just a drop of the demand: New York, Chicago suburbs and Wisconsin towns are among other communities that covet Great Lakes water.

Population growth and development continue in the Great Lakes region, boosting local water needs. In the last decade -- a period of modest growth -- the population increased by nearly 4 million, mostly in cities and townships that now rely on wells but could press their governors for the right to hook up to the Great Lakes.

Including the water that runs through power plants, the Great Lakes region already uses just under a trillion gallons a day. While most of that returns to the lakes, about 2.5 billion gallons a day -- enough to lower the water level 2 1/2 inches if it all came at once from Lakes Michigan and Huron -- are consumed by crops and industries that produce beer, baby food, bottled water and other products. That water doesn't make it back into the Lakes system.

"It would be very easy to ship Great Lakes water out through the Chicago diversion: Just increase the flowage," said U.S. Rep. Bart Stupak, D-Menominee, a leading congressional defender of the Great Lakes and opponent of additional diversions.

"For someone to run a pipeline elsewhere may be cost prohibitive, but it's not expensive at all to increase the Chicago diversion."

The International Joint Commission, set up to foster cooperation and wise water policies between Americans and Canadians, predicts water demands will escalate in the Cleveland-Akron area of Ohio, and Chicago-Gary region in northern Illinois and Indiana, and Milwaukee's suburbs in Wisconsin.

Much of the development in those areas has spilled beyond the meandering boundary of the Great Lakes basin, which cuts close to Lake Michigan's shore in southern Wisconsin and northern Illinois.

"We don't want Great Lakes water going out west and having our great resource dry up, but it seems like it shouldn't be a problem to get water for a community near the basin, when there's a health risk for its people," said Daniel Duchniak, head of the water utility in Waukesha, Wis., west of Milwaukee.

Wells that provide 8 million gallons a day to Waukesha's 68,000 residents are tainted by radium exceeding federal drinking water standards. Radium, a naturally occurring radioactive element in deep aquifers, is considered a cancer risk. Waukesha's city leaders, facing a Sept. 8 Environmental Protection Agency deadline to propose a remedy, see Lake Michigan water as perhaps their best hope.

Nearby New Berlin, Wis., which has the area's biggest industrial park and a population of 40,000, is outgrowing the capacity of its municipal wells. Mayor Ted Wysocki finds it "ironic" that his city, perched on the edge of the Great Lakes basin, drinks from a ground water table that probably feeds Lake Michigan -- but could be denied access to the lake itself.

Northeast Illinois' Planning Commission projects that region's population will jump from 8 million to nearly 10 million by 2030, causing water shortages in such cities as Naperville, Waukegan and Joliet.

Reg Gilbert, senior coordinator for the Buffalo- and Montreal-based environmental group Great Lakes United, said these communities are "the leading edge" of new pressures to divert Great Lakes water.

### **Western threat**

Beyond the Great Lakes basin, an ember of fear lingers -- mostly among politicians and environmentalists -- that we haven't seen the last of grandiose federal ideas that flared in the 1980s for piping Great Lakes water westward. They were abandoned because of logistical hurdles and astronomical costs.

For example, one now-defunct plan would have used Great Lakes water to recharge the Ogallala Aquifer, which extends underground from South Dakota to Texas and holds more water than Lake Michigan. But overuse and a persistent drought continue to take their toll on the huge underground reservoir, parts of which are severely depleted, raising the possibility the breadbasket states it supports will have to find a new water source.

They shouldn't look to Michigan for help. Gov. Jennifer Granholm says the Great Lakes are ours, and we're going to keep them.

Granholm said she won't allow Great Lakes water to go outside the basin.

"I'm going to veto any diversion that results in a net loss of water," Granholm told The Detroit News.

But there's a growing urgency to complete international regulations and reform lax state water laws -- efforts Granholm says she strongly backs.

Granholm's counterparts in neighboring states could find it harder to say 'no' to basin outsiders. They'll likely face growing political pressure from cities in their states whose suburban growth is overwhelming their water supplies, but are outside the basin boundary.

Steadily eroding Midwest clout in the U.S. House of Representatives leads some to believe it's only a matter of time before parched regions stake claims to Great Lakes water. The U.S. Water Resources Development Act of 1986 gives Great Lakes governors domain over the lakes, but a future Congress might be more sympathetic to the needs of dry states.

The Great Lakes states and two Canadian provinces bordering the lakes haven't completed work on a set of rules and regulations for deciding who can pump water out of the lakes, and how much they can take. The governments are supposed to reach agreement on guidelines by June 2004, but critics say progress has slowed, in part, because five of the Great Lakes governors -- Michigan's included -- are new.

Without such regulations, there's no assurance the federal interest in solving problems elsewhere wouldn't trump the Great Lakes states' efforts to keep their water. International trade agreements might even outweigh states' rights under the current circumstances.

### **Enough for 40 million**

Theoretically, the vast lakes contain more than enough water for the 40 million people who live within an easy drive of their shores. They also could supply such additional cities as Atlanta, Dallas and Phoenix, whose

combined population of about 6 million uses nearly 1.5 billion gallons daily.

But shipping Great Lakes water to those far-away cities, even if it were economically feasible, would be risky.

Toronto's Miller headed a task force that six years ago cited estimates that the lakes would fall 6 inches by 2035, if human consumption of Great Lakes water quadruples by 2035, as expected. The International Joint Commission more recently said the demand could increase from 4 percent to 25 percent over the same period.

Detroit's Water and Sewerage Department, which serves 4.3 million people in 126 Michigan communities, predicts its service area will swell to 6.15 million people in 50 years. It hasn't projected how much that will boost the amount of water it pumps from Lake Huron and the Detroit River, now averaging 677 million gallons a day.

Given the difficulty in making projections, "it's a misconception that there's an excess of water in the Great Lakes," says Michael Donahue, executive director of the Ann Arbor-based Great Lakes Commission.

The commission, which collects data and makes recommendations to the surrounding states and provinces, is working full-steam ahead to fill some of the broad gaps in our knowledge of water use and its impact.

Meanwhile, Donahue suggests, it's best to assume there's no water to spare. "When it comes to water management," he says, "a little paranoia is a good thing."

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## Water Pressures Protecting the Great Lakes



Sunday, June 8, 2003

Granholm sees big threat in water loss

Governor wants tighter controls on Great Lakes

Gov. Jennifer Granholm recently spoke with The Detroit News about water issues. Here is an edited transcript of that interview:



**Granholm**

**Q:** When you were attorney general in 2001, you complained that Michigan was the only Great Lake state without a statutory framework for protecting its greatest natural resource. Has the state's continued inaction made the threat worse?

A. The threat is just as real and it grows with each day as we consider the national situation. If water is a natural resource that other parts of the country would like to have access to, the longer we wait as a state the more our resource is threatened.

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We have got to step up like all the the other Great Lakes states have done. There are statutes out there that we can use as a model.

We, as a state, have the most to lose.

**Q.**Some have suggested that the federal interest in seeing the country has a sufficient fresh water supply supercedes and takes precedence over concerns by individual states like Michigan. What's your view?

A. That's why the state has got to act. This great resource is 20 percent of world's fresh water. This is who we are. As long as I am governor, the state's interests are going to trump.

Believe me, we are not going to allow diversions to the southwest or any other parts of the country. Some temporary drought situation is not good enough.

**Q.**Do the nation's South and West or areas just outside the Great Lakes basin represent the biggest immediate threat for water diversions?

A. It's probably closer to home, as a realistic matter. But it doesn't matter in terms of consequences to the Great Lakes. Diversion is diversion and we are going to stop diversions, at least if I can convince the Legislature

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to do it.

Q.Doesn't the fact that Michigan and other Great Lakes states are losing seats in Congress, at the same time fast-growing states in the South and West are gaining seats, lessen the region's clout and raise fears of water grabs by drier parts of the nation?

A.We all have that fear. Again, this speaks to the strengths of the Great Lakes Governors Council and developing an annex that would prevent diversion of this great natural resource.

This is a national treasure and that's why it has to be protected as a national treasure.

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## Water Pressures Protecting the Great Lakes



Sunday, June 8, 2003

Indiana town covets Michigan water

Residents still stung by Engler's 1992 veto of diversion to replace tainted well water

By Charlie Cain / *Detroit News Lansing Bureau*

**LOWELL, Ind.** -- It bills itself as "The friendly town, with friendly people." But not when John Engler's name comes up.

Michigan's ex-governor is "infamous around here," said David Gard, council president of this picturesque town of 7,500, in the rolling farm fields of northwest Indiana.

"People still get angry when they remember we got raked over by the governor of Michigan."

Adds Jules Chopp, a Michigan transplant who has lived in Lowell since 1975: "Engler's not thought of fondly here. He stabbed us in the back."

Engler's offense: As governor in 1992, he vetoed the town's plan to pipe 1.7 million gallons of water a day from Lake Michigan to Lowell. Under terms of a 1986 federal law, any one of the eight Great Lakes governors can veto any diversion of water out of



Dale G. Young / The Detroit News

**David Gard, president of the Lowell Town Council, is proud of the way his town handled the town's water crisis, but he still wants Lake Michigan water.**

### CyberSurvey

Great Lakes water loss

Are you concerned about Great Lake water loss? Please share your thoughts.

Very concerned

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the Great Lakes basin.  
Lowell, 25 miles south of  
Lake Michigan, falls five  
miles outside its basin and  
the rain that falls on  
Lowell winds up in the  
Mississippi River basin.

Council leader Gard said  
the Lake Michigan water  
was needed to replace

local well water, which had a high level of fluoride, looked bad and often  
tasted worse. The town, which had invested \$75,000 in processing its  
request, had received assurances approval was a formality.

Then Engler vetoed the plan the other governors had approved.

"The issue of diverting Great Lakes water out-of-basin is an extremely  
important and sensitive issue to the citizens of Michigan, who clearly  
have nothing to gain from diversions," Engler wrote in explaining his  
decision to Indiana Gov. Evan Bayh. "Perhaps the most important reason  
we oppose the Lowell diversion is the precedent-setting nature of the  
proposal."

But two years later, Engler agreed to an even bigger diversion of water to  
Akron, Ohio -- a fact not lost on Lowellians.

Now that Engler's gone, the town wants to make another run at tapping  
the Great Lakes' water. It needs more water to proceed with its plan to  
annex land north of town, to continue its steady growth.

"We'd still like a diversion of water, a 'get out of jail free' card," Gard  
said.

Engler's successor, Gov. Jennifer Granholm, says she'd veto any  
diversion that results in a net loss to the basin. Lowell, which hasn't  
finalized a specific proposal, would be more than happy to ship some of  
its local well water to replenish the Great Lakes.

Engler may inadvertently have done the town a favor with his veto.

Shut out from Lake Michigan water, the town scrambled for alternatives.  
Its wells were relatively shallow -- 24-43 feet deep. Despite advice from  
hydrologists, who said there was no water at deeper levels, Lowell  
officials followed the advice of local farmers who thought differently.

"We decided to roll the dice and spent \$2,000 to drive down to see if  
there was water," Gard said.

And there was.

At 130 feet, a new water source was discovered. Now the town mixes the  
deep and shallow well water and runs it through a soda ash treatment that  
softens it and increases the alkalinity. It now meets EPA standards --  
though many in town still won't drink the water.

"I've lived here for 26 years and the water has never bothered me," Gard  
said. "But my wife, to this day, can't drink the water."

Citizen complaints about the water fell from 300 a month several years  
ago to about a dozen now, said Greg Shook, director of Lowell Public  
Works.

Michigan native Chopp and his wife, Kathy, still don't drink the water,

Somewhat concerned

Not concerned

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unless it has been put through a charcoal filter. They pay \$25 a month to buy bottled water for drinking. They use the tap water for cooking and washing -- unless it's orange that day.

Chopp, a junior high math teacher, says local residents complain that water quality still shortens the lives of dishwashers and water heaters.

His wife, who grew up in East Detroit (now called Eastpointe) and is a real estate agent and a teacher's assistant, said the water turned her son's teeth brown. Andy, now 25, had to have his teeth bonded to improve their appearance, she said.

Despite Engler's veto, Lowell still manages to get Great Lakes water. At the local Wilco Foods, a full shelf of bottled water features Ice Mountain -- taken from underground in Mecosta County, Mich.

*You can reach Charlie Cain at (517) 371-3660 or [ccain@detnews.com](mailto:ccain@detnews.com).*

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## Water Pressures Protecting the Great Lakes



Sunday, June 8, 2003

States battle over water

By Gary Heinlein / Detroit News Lansing Bureau

Robert Glennon has a message for Great Lakes residents:

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"The idea that the West and Southwest are going to drain all the Great Lakes is nonsense," said Glennon, the Morris K. Udall professor of law and public policy at the University of Arizona. "We'd be willing to settle for just one. We'll take Superior."

He's joking, of course. But the joke has a dark side. Parts of the country not blessed with plentiful rain are using up ground water faster than it can be recharged, and they're battling over the water in streams.

Also hit by a two-year drought, Glennon's region is one of several currently fighting over water to meet growing demand:

- Farmers in southeastern California's Imperial Valley are battling the cross-state metro areas of Los Angeles and San Diego for portions of the state's share of Colorado River water. The U.S. Interior Department has threatened to cut California's annual allotment of 1.4 trillion gallons if they don't settle their differences.

Every drop of the river is spoken for, but that hasn't ended such skirmishes among states that share it, from Wyoming to Arizona, and between farmers and cities. Squabbles began soon after a 60-mile irrigation canal was dug in the early 1900s to supply Colorado River water to the Imperial Valley, turning a wasteland into a prime agricultural area.

- Three southern states are struggling to end disagreements over the Chattahoochee River, part of the Georgia-Alabama border. Upstream, Metro Atlanta, with a population that grew from 1.3 million to 4.1 million in 40 years, wants to boost its share by as much as 45 percent. But that would reduce the flow to Alabama and to oyster beds in Florida's Apalachicola Bay.

- Water wars over the Klamath River, in Oregon and northern California, have led to tension, charges of racism and, at least once, gunplay. The battle pits California and Oregon farmers, dependent on irrigation and just coming out of a drought, against Oregon native tribes whose fisheries could be threatened if flows drop too low.

Armed federal officers were sent to the area in 2001 after angry farmers along the river opened irrigation gates that had been closed to protect

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endangered fish. Environmentalists and tribal leaders claim a subsequent Interior Department decision to divert water to 1,400 farms killed 33,000 salmon last year.

The federal government says the water wars will get worse.

A new federal study projects 17 western states, and seven big cities, will be seriously short of fresh water by 2025. Eleven more major cities are in better shape but also could face water problems, according to the study.

In some parts of Kansas and Texas, the water table has dropped more than 150 feet in the Ogallala Aquifer, which underlies parts of seven states. The aquifer, formed from deposits left by glaciers 10,000 to 25,000 years ago, is being pumped at a furious rate to feed fields of corn, milo, wheat and alfalfa crucial to the nation's huge agricultural industry.

Such circumstances fan fears, however far-fetched, that the West and Southwest -- and maybe the South -- will try to suck water from the Great Lakes.

The logistics and enormous costs make that very unlikely, says senior hydrologist Roger Gauthier of the U.S. Army Corps of Engineers in Detroit. The Corps completed several studies of the idea in the 1970s and 1980s.

"The conclusion was that the cost of large-scale water shipping couldn't be economically justified," Gauthier said. "It's probably still not economically feasible to move large quantities of water a long distance."

*You can reach Gary Heinlein at (517) 371-3660 or [gheinlein<@>detnews.com](mailto:gheinlein@detnews.com).*

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## Water Pressures Protecting the Great Lakes



Sunday, June 8, 2003

Legislators wrangle with new regulation laws

By Gary Heinlein / Detroit News Lansing Bureau

**LANSING** -- Lawmakers are debating legislation that would require Michigan to map the natural, underground reserves that provide water to 2 million of the state's 10 million residents.

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It's an important first step toward regulating how much water is pumped from Michigan's aquifers, according to the bill's supporters. It has cleared the Senate and is pending in the House. Another bill, passed by the House and under review by a Senate committee, would create a smoother mechanism for settling water disputes.

The action is overdue, a Lansing environmentalist said.

"There are more and more areas of Michigan where this is a problem," said James Clift, policy director for the Michigan Environmental Council. "We know there are going to be demands and pressure. We need to set up a system for preventing too much use in any one area."

Clift said the growing use of irrigation by farmers, urban sprawl and contamination of ground water are accelerating pressures on underground water supplies.

The legislation would give state environmental officials two years to inventory Michigan's aquifers, many of which have never been studied. Major water users who pump more than 100,000 gallons a day now must report on their usage and pay a \$50 annual fee; the proposal would boost their fee to \$100, to help pay for the aquifer mapping.

A special state ground water advisory council would be established under the legislation, to study the aquifers and how to keep them at viable levels. Eventually, proponents envision, the state will develop a water-use permit system.

Michigan currently has the laxest water laws in the Great Lakes basin: It requires no permit for ground water pumping.

The seven other Great Lakes states and two Canadian provinces on the lakes all require permits or state approval for at least some categories of ground water use.

But their laws, too, likely will have to be toughened under regulations and standards the states and provinces are developing to put teeth in the

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Great Lakes Charter, a 1986 international agreement to protect the Great Lakes water supply.

"The use of water from the lakes is profound," said Roger Gauthier, senior hydrologist for the U.S. Army Corps of Engineers in Detroit. "Bottled water, beer, pop, stewed tomatoes, baby food. Everyone focuses on one pipe, one canal, drawing water from the lakes, but pressure is coming from all directions. It's within the immediate area and also from afar."

*You can reach Gary Heinlein at (517) 371-3660 or [gheinlein@detnews.com](mailto:gheinlein@detnews.com).*

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About this report

The Detroit News examines how population growth, water shortages and commercial use -- such as farming and manufacturing -- endanger the Great Lakes.

**June 8, 2003: Ownership**

The greatest threat of water diversion from the Great Lakes comes from Michigan's neighbors.

**June 9, 2003: Groundwater**

Communities say businesses that take Michigan's underground water threaten fresh water supplies.

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A look at how the falling levels in the Great Lakes are affecting tourism, trade, health and the environment.

Water glossary

- ▶ **Aquifer:** An underground reservoir.
- ▶ **Chicago diversion:** A connection built in 1890 to carry Lake Michigan water through the Chicago and Illinois rivers to the Mississippi; supplies drinking water to much of the Chicago region and supports navigation.

**Water Pressures**  
 Protecting the Great Lakes



Dale G. Young / The Detroit News

**Critics charge that users like the Ice Mountain bottling plant will overtax the below-ground reservoirs.**

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STANWOOD, Mich. -- A key battle over Great Lakes water is being fought in quiet, rural Mecosta County, 50 miles from Lake Michigan. 06/09/03

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The Great Lakes are under seige. 06/08/03

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Gov. Jennifer Granholm recently spoke with The Detroit News about water issues. Here is an edited transcript of that interview: 06/08/03

[Indiana town covets Michigan water](#)

LOWELL, Ind. -- It bills itself as "The friendly town, with friendly people." But not when John Engler's name comes up. 06/08/03

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► **Consumptive use:** Permanent removal of water from the ground, a waterway or the Great Lakes; includes evaporation or incorporation of the water into a product such as bottled water, canned vegetables, pop or beer.

► **Diversion:** Transfer of water from one watershed to another.

► **Ground water:** Water within the earth that supplies wells, springs and streams.

► **Nonconsumptive use:** The withdrawal of water that ultimately is returned to its source; includes most of the water used by municipalities, hydroelectric plants and nuclear plants. Ninety-five percent of Great Lakes water is returned after use.

► **Surface water:** Streams, lakes and seas.

► **Watershed:** An area whose waters drain specifically into a particular body of water.

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**Water Pressures**  
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Monday, June 9, 2003



Dale G. Young / The Detroit News

**Critics charge that users like the Ice Mountain bottling plant will overtax the below-ground reservoirs.**

Commercial use of aquifers could strain Great Lakes

Mich. must balance economics, environment

By Gary Heinlein and Charlie Cain / *Detroit News Lansing Bureau*

**STANWOOD, Mich.** -- A key battle over Great Lakes water is being fought in quiet, rural Mecosta County, 50 miles from Lake Michigan.

There, in the sandy interior of north-central Michigan, the biggest player in the \$35 billion international bottled water industry is piping 130 gallons of water a minute, 24 hours a day, from spongy ground beneath a hunting preserve. Bottled as Ice Mountain, it sells for \$1.25 retail, because it



Dale G. Young / The Detroit News

**Mark Shaffer's pond is all but dried up in Holly and he blames a nearby gravel pit for draining too much water from aquifers.**

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carries one of the industry's top designations: spring water.

The plant, owned by Nestle' Waters North America Inc., is a prime example of increasing water fights in Michigan, a state with aquifers so abundant that nobody questioned where their next drink was coming from. In fact, Michigan currently has the laxest water laws in the Great Lakes basin: It requires no permit for ground water pumping.

Now, from Metro Detroit to Mecosta County, there's concern that below-ground reservoirs -- intricately connected to the Great Lakes -- will be drawn down to dangerously low levels. Pumping groundwater impacts the already low Great Lakes because the aquifers feed streams and they, in turn, feed the lakes.

State policy-makers will have to balance the prosperity linked to water bottling, urbanization and farm irrigation against the potential for environmental degradation and localized water shortages.

In the county Circuit Court in Big Rapids, neighbors of the Ice Mountain operation argue in their lawsuit that the bottling company will lower the nearby Dead Stream, a lake and the Muskegon River that flow into Lake Michigan.

Nestle' Waters, subsidiary of Swiss-based Nestlé SA, answers that it spent more than \$1 million assuring

In a two-day report Sunday and today, The Detroit News examines how population growth, water shortages and commercial use -- such as farming and manufacturing -- endanger the Great Lakes.

**Sunday: Ownership**

The greatest threat of water diversion from the Great Lakes comes from Michigan's neighbors.

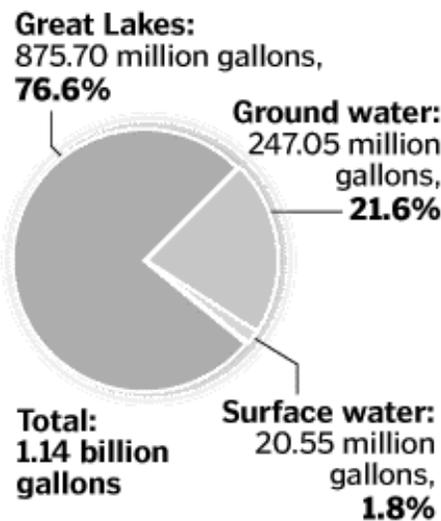
**Today: Groundwater**

Communities say businesses that take Michigan's underground water -- and don't return it -- threaten fresh water supplies.

**Where we get our water**

Here is where Michigan counties get their water.

Gallons per day



Source: Michigan Department of Environmental Quality

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that won't happen -- more of an effort than numerous other major commercial water users put forth before starting to pump.

Water use hasn't increased much in the Great Lakes basin for several years, but a University of Arizona expert warns that there's a voracious appetite for pristine waters like those flowing in Michigan's underground aquifers.

"There's a lot of money at stake and no limit to the number of water boondoggles," said Robert Glennon, author of a 2002 book about ground water pumping. His book details cases in which pumping too much water too fast from aquifers has hurt streams, lakes, plants and animals.

"It's like a giant milk shake that you drink with a straw," Glennon explains. "If you put an infinite number of straws in the same glass, that's a recipe for disaster."

### One too many straws

Mark Shaffer, who lives in Holly in northwest Oakland County, sees evidence of at least one too many straws in the aquifer that supplies well water to his and neighbors' homes near the Renaissance Festival grounds.

Shaffer got embroiled in efforts to halt water pumping at a nearby gravel pit after his lawn pond dried up two years ago. Neighbors' ponds -- and wells -- also dried up. Shaffer estimates a nearby gravel pit operator, ordered to stop in April, pumped 25 billion gallons of water from the ground in the last four years.

Mining for gravel cuts through layers of earth and, often, aquifers. The least costly way to keep going is to prevent the pit from being flooded by sucking out the water with high-volume pumps.

"We have taken water for granted," said Shaffer, a newly minted water rights activist. "We need a law that says you cannot site a well and you cannot pump any water until you've had an environmental study, and it was done by a reputable company."

Another example of Michigan water troubles is seen in parts of Monroe County, where groundwater supplies have failed to meet residents' needs in recent years because of drought and significant undergroundwater use by rock mining operations.



Dale G. Young / The Detroit News

**Water rights activists Terry Swier and Sandy Sapp paddle down Dead Stream in Mecosta County. They are some of the plaintiffs in a case against Nestlé Perrier.**

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There's also evidence of overuse in Saginaw County, according to health department environmental manager Kevin Datte. He says at least 140 residential wells have failed since 1994 and some townships are limiting development because of the problem.

Datte says the dry wells are at least partly linked to groundwater pumping to irrigate, a trend among Michigan farmers needing consistent moisture to grow seed crops and vegetables for the fast-food industry. Scientists say as much as 70 percent of the water sprayed by irrigating equipment is lost to evaporation.

"Some irrigation wells can draw 900 million gallons a season -- the same as is used in a year's time for all residential wells in five townships," Datte said. "I expect this problem to continue."

A Lansing lawyer representing Walther Farms, one of the county's large crop operations, disputes that irrigation causes the problem. Its attorney, Michael Brown, blames a combination of drought, out-of-date residential wells and seasonal fluctuations in water tables.

Brown said a hydrologist hired by farmers found the Saginaw aquifer stores 99 billion gallons of water -- so much that "you could drill an irrigation well every square mile and have enough to last 134 years."

Saginaw County residents Bill and Karen Hollingsworth, who have lived south of Merrill for 38 years, are frustrated that in this saturated region they've been without well water for about 1 1/2 months during the peak irrigation period each summer for four years. They blame a large farm with a contract to grow high-moisture spuds favored by potato chip makers.

"Something needs to be done, but we can't find anybody who can," says Bill Hollingsworth, a 63-year-old retired farm equipment mechanic. "If anybody complains, they just say there's no law that says they can't do it."

### **What is reasonable?**

Michigan regulations follow an age-old concept: Anyone is entitled to drill into aquifers and withdraw a reasonable quantity of water. What's reasonable? Any amount, as long as it doesn't harm neighbors using the same aquifer -- and those neighbors must prove that in court.

"Any groundwater withdrawal is going to have some kind of effect; society decides what effect is acceptable," said Jim Nicholas, district chief for the U.S. Geological Survey in Michigan. "Maybe you didn't lower the water much in the affected stream, but trout populations have been reduced because there's not as much cold water going into it."

In some Southwestern states, groundwater pumping has depleted aquifers to the point that the streams they used to supply now are dry, except during rainy periods. That's evidence of the mounting paucity in parched areas whose farms and cities, some fear, one day will use their increasing political clout to come after Great Lakes water.

Water shortages also are part of what's driving the \$35 billion international bottled water business, and has companies like Nestlé hurrying to build new plants in Michigan and other spots blessed with ample undergroundwater. U.S. residents consumed 21.2 gallons of bottled water per person in 2002, compared with 1.6 gallons each in 1976, according to the Beverage Marketing Corp. of New York.

When wells dry up, the water tastes bad or harmful chemicals invade, the

last alternative for many people is to get their drinking water from store shelves.

The U.S. is a \$7.7-billion marketplace for bottled water. There are 36 bottled water permit-holders in Michigan alone. Even if Great Lakes water never is pumped westward, experts say, it will end up there anyway, in millions of neatly labeled bottles on supermarket shelves.

## Tapping Michigan's ground water

Ground water supplies 2 million of Michigan's 10 million people. A bottled water company in Mecosta County, farm irrigation in Saginaw County, and quarry operations in Monroe and Oakland counties raise concerns that too much water is being withdrawn.



### A perfect illustration

Gov. Jennifer Granholm says the battle over the Mecosta County plant is a perfect illustration of the need to develop better laws by which to parcel out groundwater. As attorney general, she faulted Gov. John Engler for welcoming the Ice Mountain plant -- and granting it \$10 million in tax breaks -- without first getting the green light from his counterparts in other Great Lakes states.

Granholm said other Great Lakes governors should have been consulted, since much of the firm's bottled water leaves the state and is, therefore, a diversion of water outside the Great Lakes basin. The federal Water Resources Development Act, governing Great Lakes water, requires such approval from other governors, she said in a letter Engler ignored.

But Republicans, who control the Legislature and have spent much of the last two months drafting two such statutes, don't agree with Granholm. They see little difference between water that's exported in bottles and water that leaves the state as part of melons, baby food, cans of paint and soft drinks.

In its current form, Republican-backed legislation would require Michigan to inventory its system of aquifers, many of which still are unmapped, and establish a more orderly way to resolve water disputes. Granholm says those are baby steps in the right direction.

"One bill only maps the aquifers and the other allows for resolution of conflicts, once a conflict exists," she said. "I was hopeful the Legislature would move toward a strong groundwater proposal. That's not happened yet."

Sen. Patricia Birkholz, a Republican from Saugatuck on the Lake Michigan shore, chaired hours of complicated Senate committee hearings while crafting one of the proposals. She said lawmakers must move cautiously.

"We decided we need to proceed in a scientific way, and our first step needed to be mapping," Birkholz said.

The Nestlé corporation supports efforts at new water withdrawal laws, at least in concept. It has a \$100-million investment in Michigan at stake, and plans to expand.

Still, retired school librarian Terry Swier, who's in the thick of the court battle as head of Michigan Citizens for Water Conservation, is unconvinced any private firm can be induced to care much about the state's natural assets. Swier and her husband, Gary, have put on hold the quieter lifestyle they planned when they retired to a home on Mecosta County's Horseshoe Lake.

"For me, this is the future of Michigan's waters," says Swier, 59. "Diversion diminishes water levels in lakes, streams and wetlands. Are we going to end up like the western states?"

*You can reach Gary Heinlein at (517) 371-3660 or [gheinlein@detnews.com](mailto:gheinlein@detnews.com)*



Dale G. Young / The Detroit News

**Bill Hollingsworth says in his region in rural Saginaw County, he has been without well water for about 1 1/2 months during the peak irrigation period each summer for four years. He blames a farm with a contract to grow high-moisture spuds favored by potato chip makers.**

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Monday, June 9, 2003

Michigan's water rules need bite

Experts fear state's lax regulations about groundwater leave it vulnerable

By Gary Heinlein and Charlie Cain / *Detroit News Lansing Bureau*

**LANSING** -- It's open season on the Great Lakes.

There are few teeth in the hodgepodge of regulations covering water use in the eight states and two Canadian provinces surrounding them. And without any bite, the lakes' guardians might have a hard time fending off any federal decision to pipe Great Lakes water to drought-ridden Western states.

There's also little to prevent overuse within the Great Lakes Basin.

"We don't have any authority for monitoring of water withdrawals," said environmental law expert Chris Shafer, who teaches at Thomas M. Cooley Law School in Lansing. "People have always viewed our water resources as almost unlimited. But there clearly are threats and clearly conflicts developing."

Here's what experts say Michigan, and other Great Lakes states and provinces, should do to protect the water:

- ▶ Conserve. There's less chance of shortages if less water is wasted. In addition, it may be difficult to win a court battle with an outsider who covets Great Lakes water if those with ready access are using it lavishly.

- ▶ Complete the work called for in Annex 2001, the amendment to the international Great Lakes Charter. It's easier to say "no" to unwanted water depletion and make it stick if the denial is based on a set of criteria for a legitimate purpose, such as protecting the environment or conserving water. The charter is an informal 1985 agreement by the eight states and two provinces to abide by protective policies. Annex 2001 commits them to limiting -- and disclosing -- any new large-scale water

**Protecting the lakes**

Here's what the experts say the Great Lakes states and provinces must do to protect the lakes from those who want their water:

- ▶ Draft a water conservation plan for communities that already draw water from the lakes.
- ▶ Limit new, large-scale water withdrawals.
- ▶ Enact a law requiring permits for groundwater withdrawals, and monitor them.
- ▶ Set priorities: drinking water, commercial use, crop irrigation and other water uses.

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withdrawals while drawing up regulations that finally will put teeth into the agreement.

▶ Pass a groundwater protection law. Without provisions for issuing permits to pump groundwater, as currently is the case, there's no sure way to prevent overuse that drains aquifers.

▶ Monitor groundwater pumping. Without a monitoring system, governments don't have a handle on how much water is being used, or might be needed in the future. The Great Lakes Commission is working on a system.

▶ Set water-use priorities. Drinking water has always been tops, but as urban areas grow and competition for water increases, somebody will have to decide what other uses are most important.

▶ Promote the Great Lakes' abundance. It's better to encourage businesses to bring their money and jobs here for easy access to water than to allow the water to be piped to factories and cities outside the basin.

Reg Gilbert, senior coordinator for the international environmental group Great Lakes United in Buffalo, N.Y., said it's up to Michigan to take the lead. It's the only state that lies wholly within the Great Lakes basin.

"Other states are partly inside the basin and partly outside it," Gilbert said. "In Michigan, there are no divided loyalties. 'Great Lakes' is on the license plate, so you should act on that."

*You can reach Gary Heinlein at (517) 371-3660 or [gheinlein@detnews.com](mailto:gheinlein@detnews.com).*

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## Water Pressures Protecting the Great Lakes

Monday, June 9, 2003

Holly battle centers on pit

Neighbors blame gravel operation for low water table

By Gary Heinlein / *Detroit News Lansing Bureau*

**HOLLY** -- Mark Shaffer first believed the drought was drying up his lawn pond.

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But the water level continued to drop, even after he began pumping from a bigger, deeper well. Then he found out neighbors' ponds and wells were going dry, too.

That was the start of a four-year battle in northern Oakland County's Groveland Township, where newcomers are building homes on estate-size lots. Shaffer's two-story house sits off Widgeon Way, an unpaved drive named after a type of duck.

The pond and well water disappeared after Midway Sand and Gravel Co. resumed digging at a previously dormant gravel pit in 1999. Midway's high-volume pumping removed millions of gallons of water a day from the pit -- and the underground reservoir it shares with residents, the township claims in a lawsuit.

"He was pumping more than Mother Nature could produce," said Shaffer, the point man for a group of angry residents. "All the water flows from us to him."

Township meetings became wrangles. Engineers were hired at costs in the hundreds of thousands of dollars. Midway, while disputing Shaffer's allegations, replaced at least one residential well.

Pit owner Homer Tolliver didn't return calls from The Detroit News for this story.

Malcolm Pirnie, a specialized firm accepted by all sides, recommended in November 2001 that Midway dig trenches to store the water, so it could seep back into the ground.

The company partly complied, but continued dumping 1.5 million gallons a day into a state wildlife area, township Supervisor Robert DePalma said.

In early March, the township board and county Drain Commission ordered Midway to stop letting water run off its land. Water removed from its gravel pit now goes only into trenches, and that seems to be helping the water table.

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"One resident behind the pit told me in May that raised his water about 3 1/2 feet," said DePalma.

Water gradually is seeping into Shaffer's pond, too. But a neighbor's is still dry. And bitterness lingers.

DePalma is convinced the state should regulate ground water use. Townships, he said, just don't have the resources.

*You can reach Gary Heinlein at (517) 371-3660 or [gheinlein@detnews.com](mailto:gheinlein@detnews.com).*

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About this report

The Detroit News examines how population growth, water shortages and commercial use -- such as farming and manufacturing -- endanger the Great Lakes.

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A look at how the falling levels in the Great Lakes are affecting tourism, trade, health and the environment.

Water glossary

- ▶ **Aquifer:** An underground reservoir.
- ▶ **Chicago diversion:** A connection built in 1890 to carry Lake Michigan water through the Chicago and Illinois rivers to the Mississippi; supplies drinking water to much of the Chicago region and supports navigation.

**Water Pressures**  
Protecting the Great Lakes



Dale G. Young / The Detroit News

**Critics charge that users like the Ice Mountain bottling plant will overtax the below-ground reservoirs.**

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STANWOOD, Mich. -- A key battle over Great Lakes water is being fought in quiet, rural Mecosta County, 50 miles from Lake Michigan. 06/09/03

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Gov. Jennifer Granholm recently spoke with The Detroit News about water issues. Here is an edited transcript of that interview: 06/08/03

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► **Consumptive use:** Permanent removal of water from the ground, a waterway or the Great Lakes; includes evaporation or incorporation of the water into a product such as bottled water, canned vegetables, pop or beer.

► **Diversion:** Transfer of water from one watershed to another.

► **Ground water:** Water within the earth that supplies wells, springs and streams.

► **Nonconsumptive use:** The withdrawal of water that ultimately is returned to its source; includes most of the water used by municipalities, hydroelectric plants and nuclear plants. Ninety-five percent of Great Lakes water is returned after use.

► **Surface water:** Streams, lakes and seas.

► **Watershed:** An area whose waters drain specifically into a particular body of water.

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Robert Glennon has a message for Great Lakes residents:  
06/08/03

## [Legislators wrangle with new regulation laws](#)

LANSING -- Lawmakers are debating legislation that would require Michigan to map the natural, underground reserves that provide water to 2 million of the state's 10 million residents. 06/08/03

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