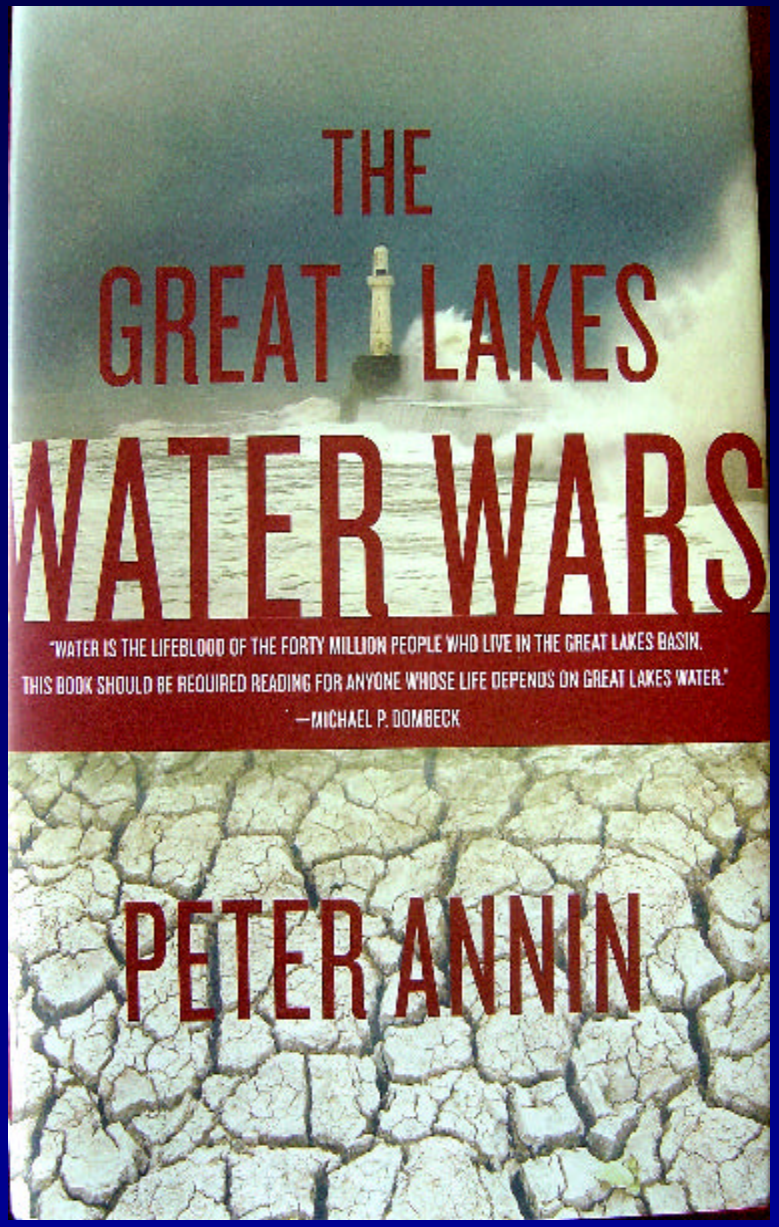
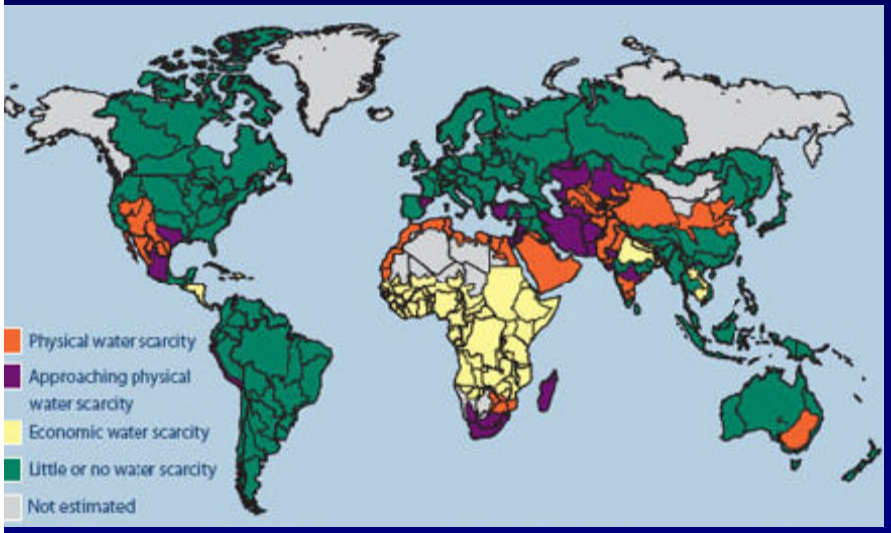

THE
GREAT LAKES
WATER WARS
"WATER IS THE LIFEBLOOD OF THE FORTY MILLION PEOPLE WHO LIVE IN THE GREAT LAKES BASIN.
THIS BOOK SHOULD BE REQUIRED READING FOR ANYONE WHOSE LIFE DEPENDS ON GREAT LAKES WATER."
—MICHAEL P. DOMBECK
PETER ANNIN

Thesis

Photo By RJ & Linda Miller

- The region, continent and world are all entering a period of increased water tension
- Those tensions are primarily driven by water scarcity
- These tensions will put increased pressure on water-rich areas like the Great Lakes
- The Great Lakes Basin needs a modern, binding world-class water management system to protect this internationally significant resource as we enter an era of global water insecurity

World Water Woes



United Nations

- Only 1% of earth's surface water is accessible & drinkable freshwater
- 1 billion lack access to clean drinking water
- 2 million die annually from unhealthy water
- 2/3rds of global population will face water shortages by 2025

National Geographic, University of Wisconsin Aquatic Science Center, Peter Gleick, United Nations

The Aral Experiment

- The Aral was once the 4th largest inland water body in the world
- Starting in 1960, its freshwater feeder streams were diverted for agriculture to make the desert bloom

Randy Yeip, Knight Center for Env. Journalism

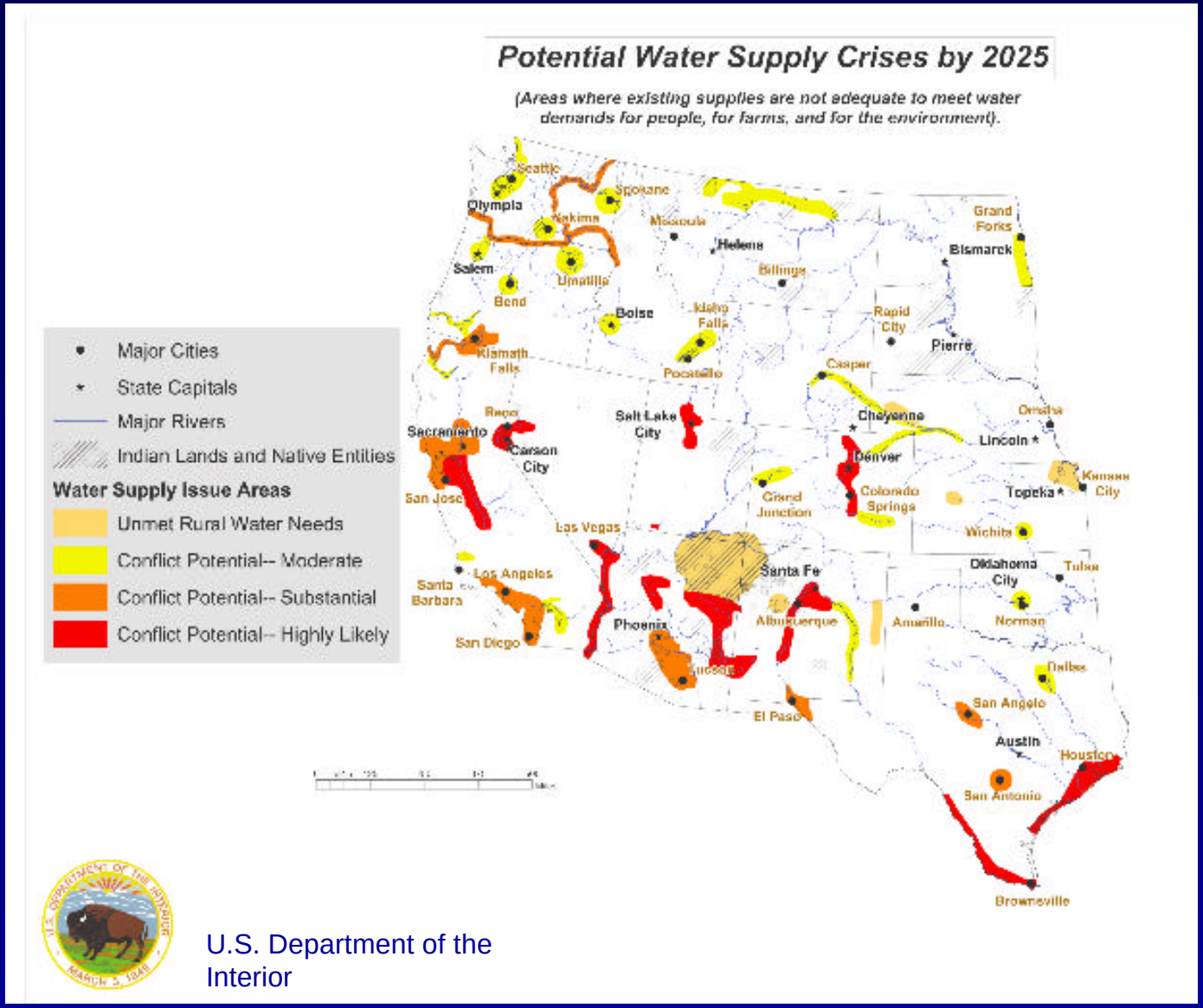
Anti-diversion Posterchild

- The desert bloomed, but at great cost to the Aral’s ecosystem.
- At this spot, water was once 45 feet deep. Today the Aral has receded beyond the horizon in all directions.

Aral Sea Desiccation

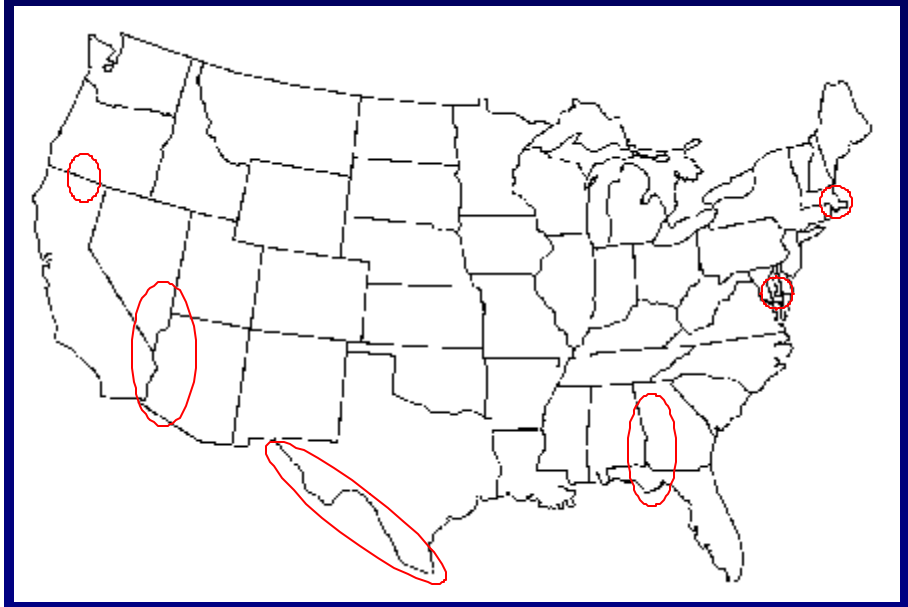
- The farmer's gain was the fisherman's loss. The ship graveyard is all that remains of the old port at Muynak, Uzbekistan.
- It now takes five hours of driving in a 4x4 vehicle to travel from the old shoreline to the water's edge.
- The Aral Sea has lost more than 90 percent of its volume and 75 percent of its surface area since 1960.
- The Aral's demise shows that large water bodies are vulnerable to overuse.

Continental Water Tension



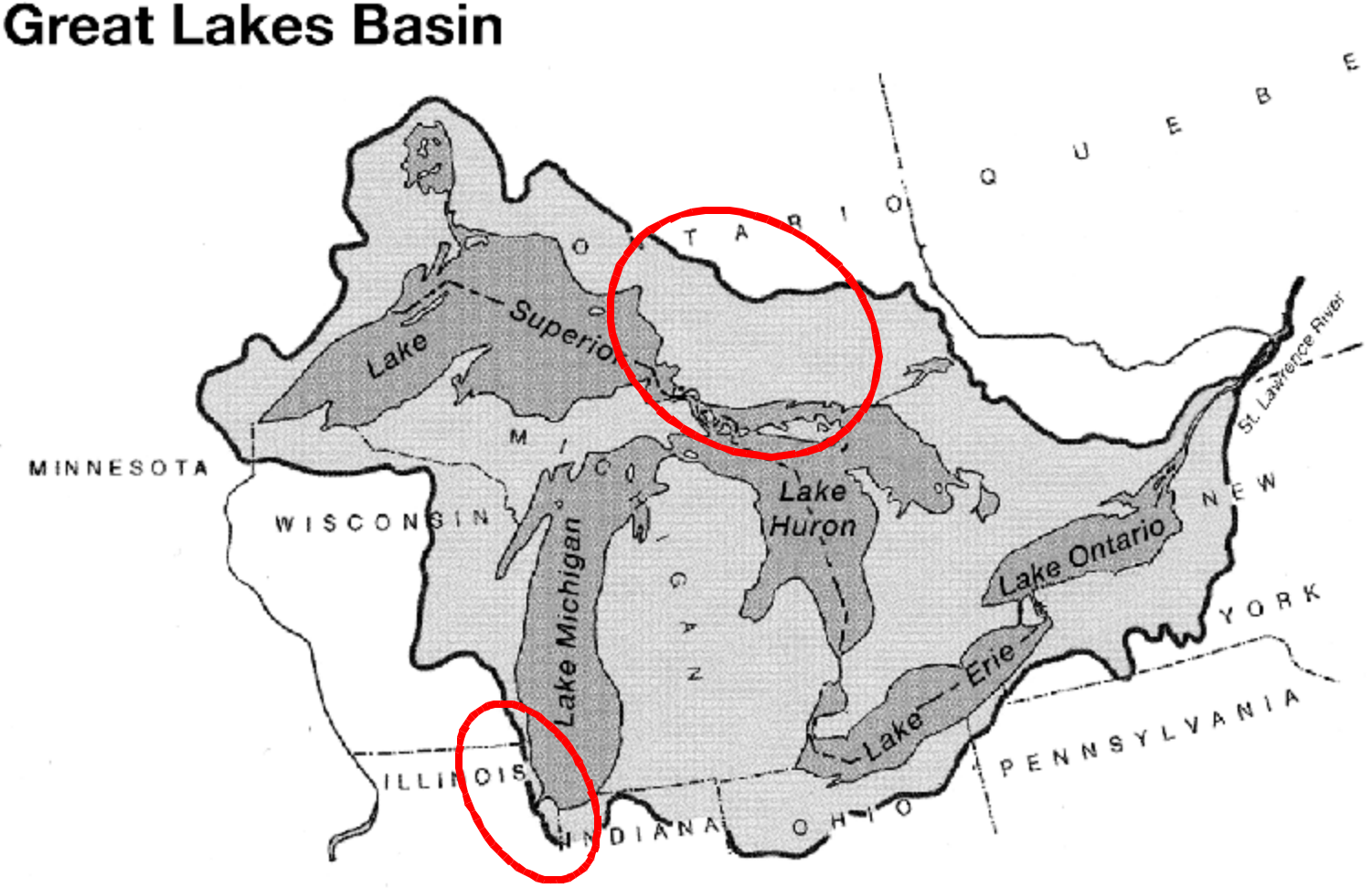
U.S. Department of the Interior

Continental Water Tension



- Water tension in the Klamath River Basin
- Colorado River oversubscribed
- Rio Grande friction
- Apalachicola River Basin in the Southeast
- Potomac River
- Ipswich River outside Boston

Great Lakes Basin



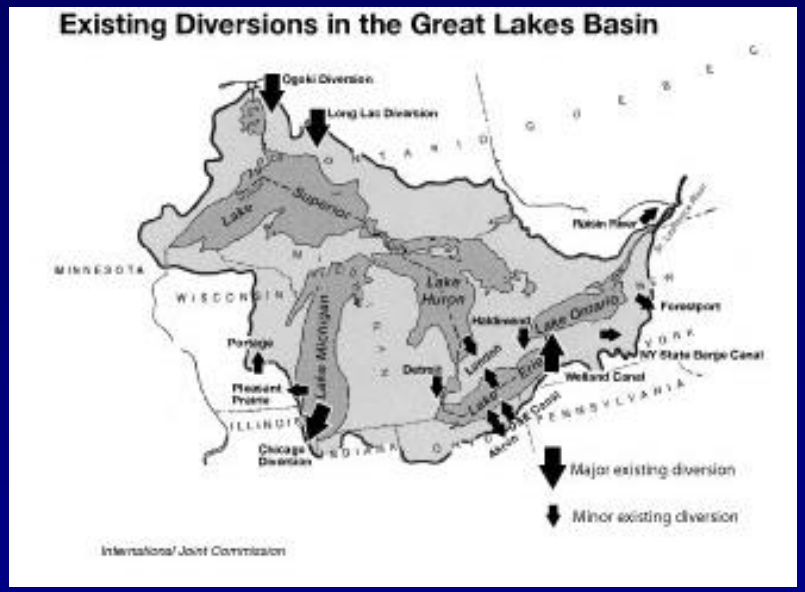
Council of Great Lakes Governors

Great Lakes Basin

- Holds 18 % of global fresh surface water
- Enough volume to cover the lower 48 in 9.5 feet of water
- But only 1 % of Great Lakes Basin water is renewable
- Great Lakes nourish 40 million people in U.S. & Canada as well as billions of creatures in a unique, fragile cold-water ecosystem
- The regional economy is world’s third largest ($2 trillion)--much, though not all, of that economy is water-dependent

Great Lakes Diversions

- There have been numerous diversions of Great Lakes water since 1825
- According to the IJC, there have been 8 inter-Basin diversions
- There have also been 6 intra-Basin diversions



International Joint Commission

Illinois Diversion at Chicago (1900)

Metropolitan Water Reclamation District of Greater Chicago

- Max capacity 10,000 cfs
- Most litigated and controversial diversion
- Longest running active file in the MI AG's office

Illinois Diversion at Chicago (1900)

Robert Cameron's "Above Chicago"

- Controlled by U.S. Supreme Court decree
- Current size is 3,200 cfs (2.1 billion gallons/day)
- Lowered Lakes Michigan & Huron by 2.5 inches

Long Lac Diversion (1940)

- Diverts water from Hudson Bay watershed *into* Lake Superior
- Depression-era jobs program
- Used for hydro and to transport timber
- Approximately 1,500 cfs, or roughly half Chicago diversion

Ogoki Diversion (1943)

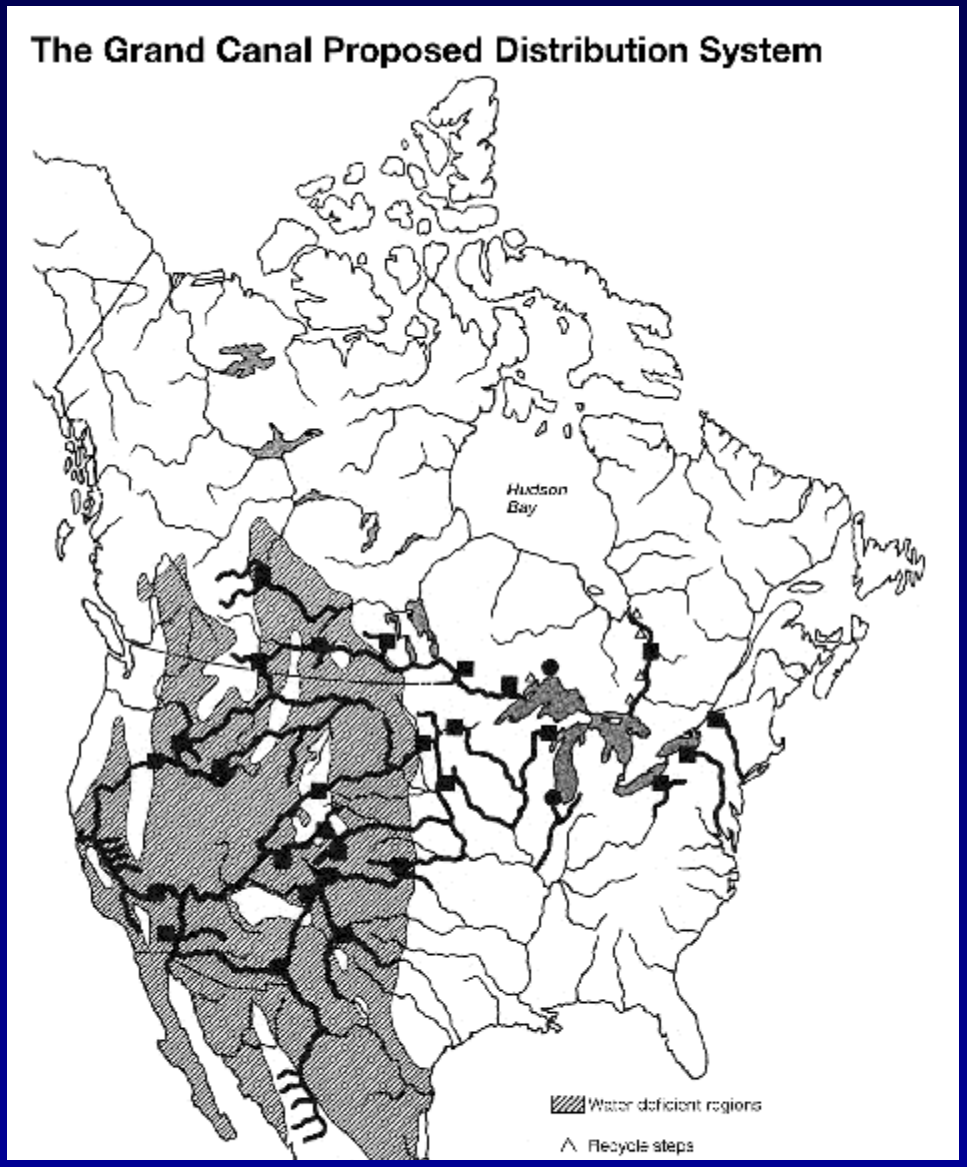
- Large diversion *into* Lake Superior from Hudson Bay watershed
- 4,000 cfs (25 % larger than Chicago Diversion)
- WWII hydro project
- Very remote, relatively unknown
- Raised all the Great Lakes by more than 2 inches--Michigan and Huron by 4.3 inches

Long Lac & Ogoki Diversions (1940 & 1943)

NAWAPA (Early 1960s)

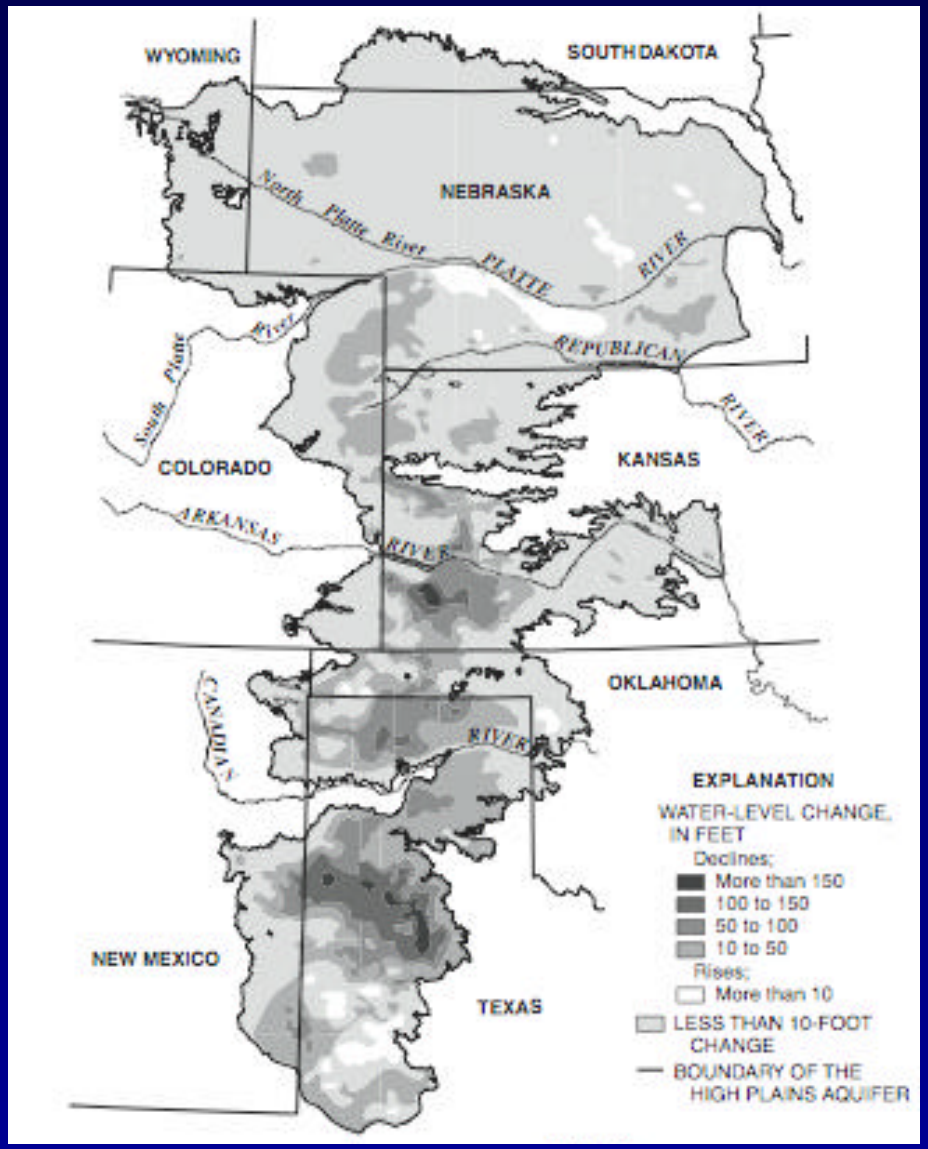
Geographical

Grand Canal (Early 1960s)



Tom Kierans

The Ogallala Aquifer (1970s)

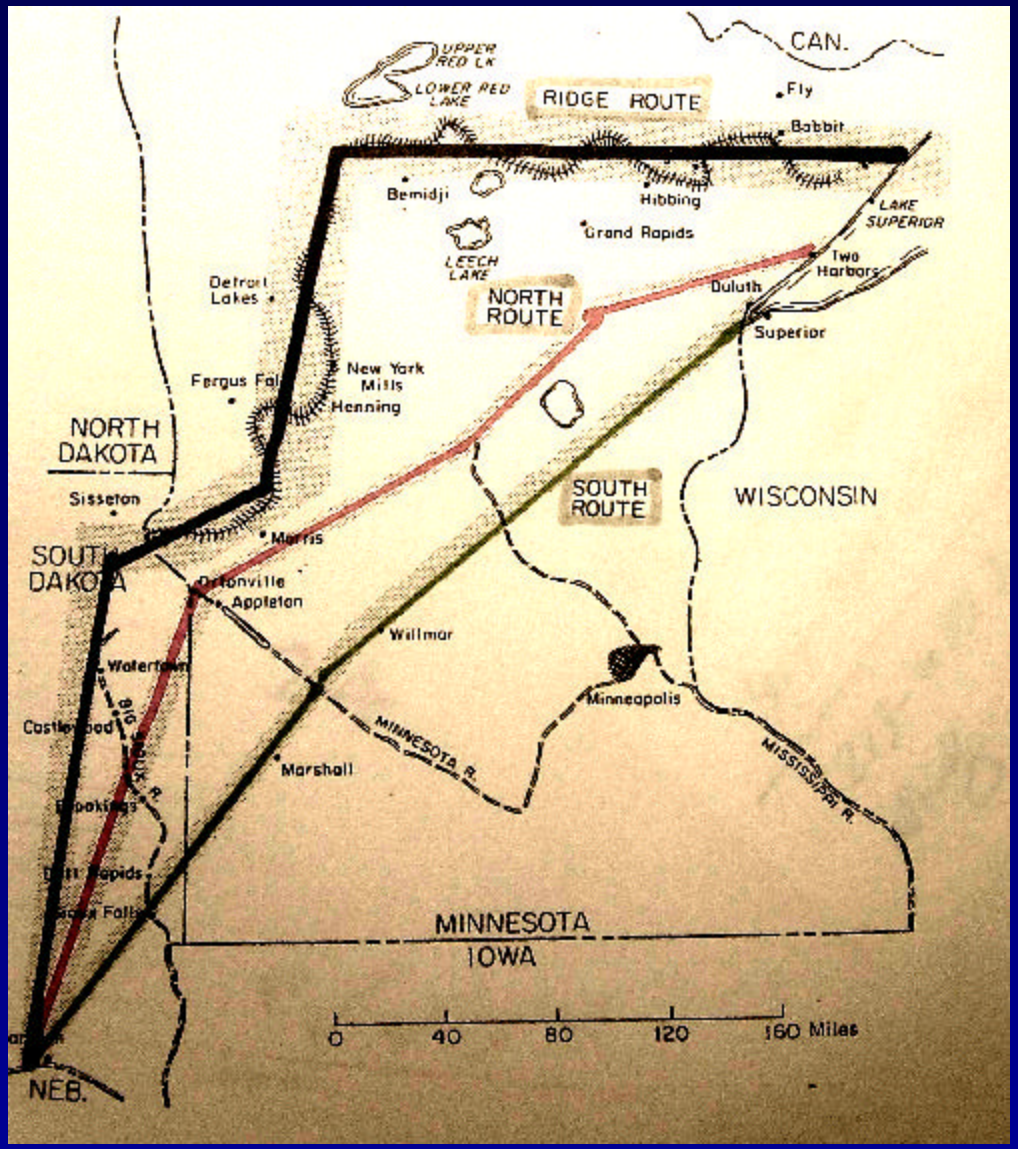


U.S. Geological Survey

The Ogallala Aquifer (1970s)

- By the late 1970s water levels on the Ogallala Aquifer had fallen by 100 feet
- These declines prompted the Corps to study diverting water to the Ogallala from “adjacent areas”
- The Corps’ conclusion: cost-prohibitive ($3 to $30 billion) (1977 dollars)

Bulkley Study (1984)

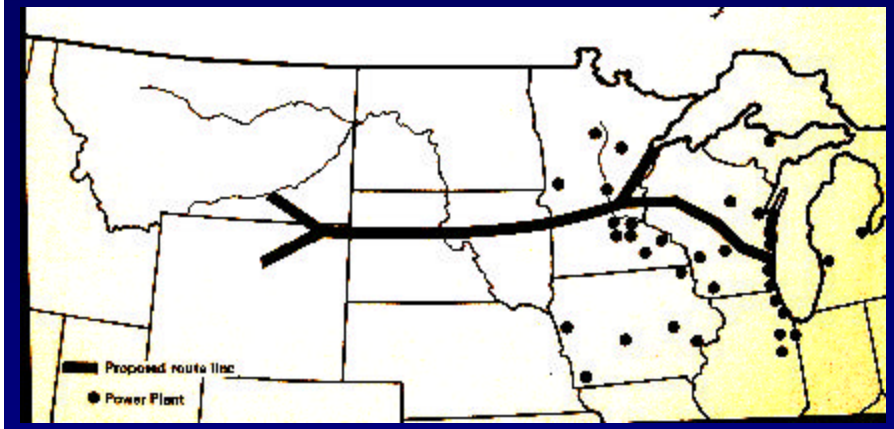


Modified from Bulkley, et al

Bulkley Study (1984)

- Hypothetical canal from Lake Superior to Yankton, SD (611 mi.)
- 10,000 cfs (Same max as Chicago Ship Canal)
- Cost: $27 billion (1982 $)
- Combined with Corps plan, Bulkley's study suggests it would cost $30 billion to $57 billion to send Great Lakes water to the Ogallala

Coal Slurry Pipeline (1981)

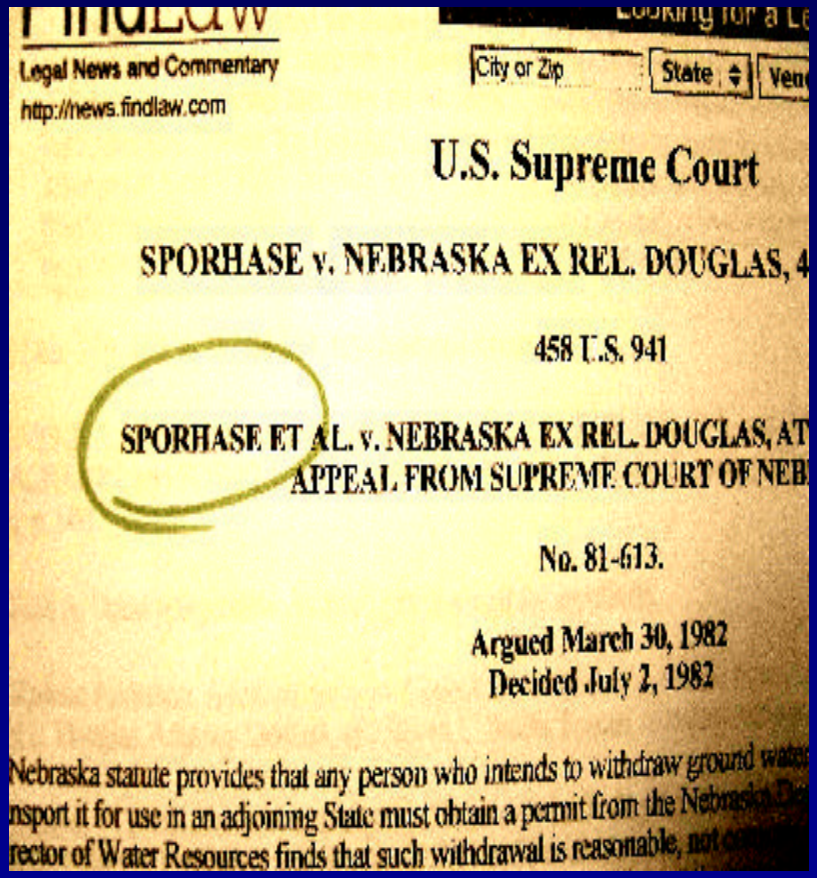


Wisconsin Coastal Management Program

- 1,900-mile proposed pipeline from WY/MT to Great Lakes
- 42-inch pipe
- $2.8 billion project (1981 dollars)
- Great Lakes residents became alarmed after company suggested using Lake Superior water for slurry
- Eminent domain battle killed project

Sporhase v. Nebraska (1982)

- Groundwater is an article of commerce
- Nebraska's limits on interstate water transfers violated commerce clause
- Great Lakes governors felt Sporhase prohibited them from banning diversions
- They decided that banning diversions would not withstand a court challenge


Legal News and Commentary
http://news.findlaw.com
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State

U.S. Supreme Court

SPORHASE v. NEBRASKA EX REL. DOUGLAS, 4

458 U.S. 941

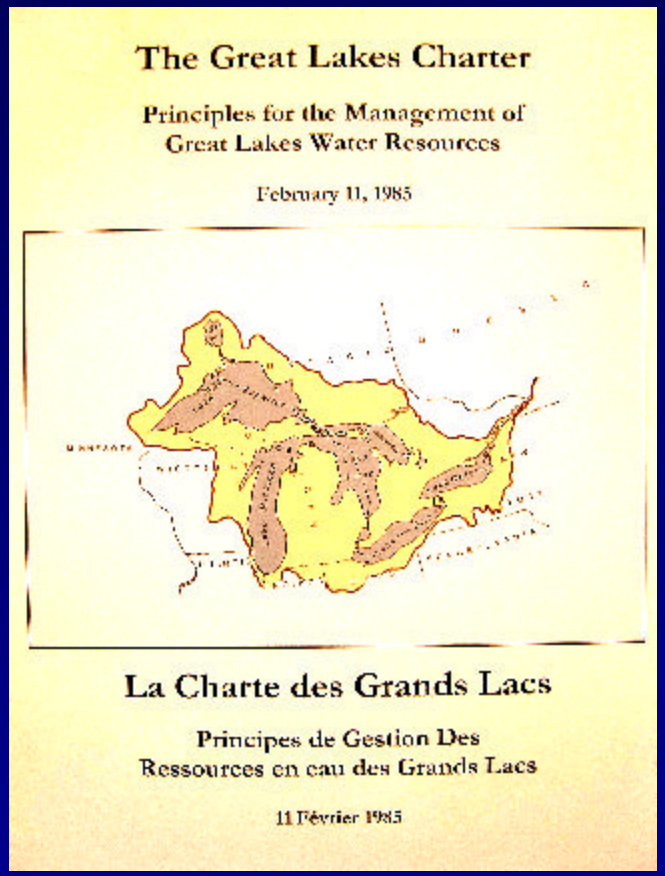
SPORHASE ET AL. v. NEBRASKA EX REL. DOUGLAS, AT
APPEAL FROM SUPREME COURT OF NEB

No. 81-613.

Argued March 30, 1982
Decided July 2, 1982

Nebraska statute provides that any person who intends to withdraw ground wate
nsport it for use in an adjoining State must obtain a permit from the Nebraska
rector of Water Resources finds that such withdrawal is reasonable, not

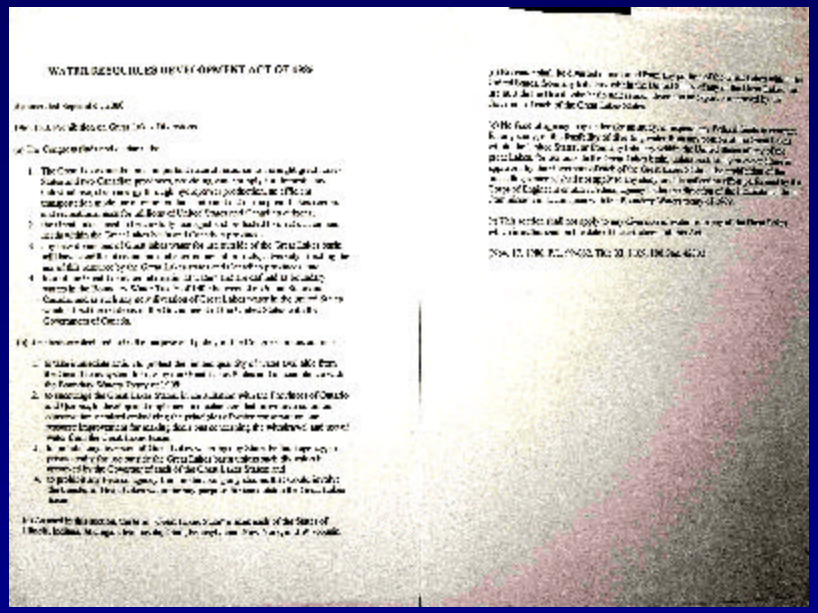
Great Lakes Charter of 1985



- Nonbinding, but international
- Diversions AND consumptive uses over 5 mgd required "prior notice and consultation" with other jurisdictions
- Agreed to reach "consent & concurrence" in water disputes
- States and provinces pledged to "regulate" withdrawals over 2 mgd

WRDA of 1986

- Required that all Great Lakes diversions (on U.S. side) be unanimously approved by all 8 Great Lakes governors
- Binding, but only on the U.S. side of the border
- Thin legislation with no standard for judging diversion applications
- Only applies to diversions--not in-Basin consumptive uses
- Only takes one governor to kill a diversion proposal
- Constitutionality questions



Pleasant Prairie, WI (1989)

- WRDA diversion request
- Village is on Lake Michigan
- Straddles Basin line
- Radium in groundwater
- Requested 3.2 mgd “temporary diversion”
- Return flow by 2009
- Two governors never responded to village’s diversion request
- Odd “approval” letter from Michigan
- Awkward WRDA test case

Lowell, Indiana (1992)

- WRDA diversion request
- Town 5 miles beyond Basin
- Requested 1.1 mgd -- No return flow
- Hearing held in Indiana
- CGLG tried to broker deal
- Gov. Engler (MI) vetoed proposal as
- Concerns about precedent
- Only Great Lakes diversion ever vetoed
- Growing regional concerns about WRDA process

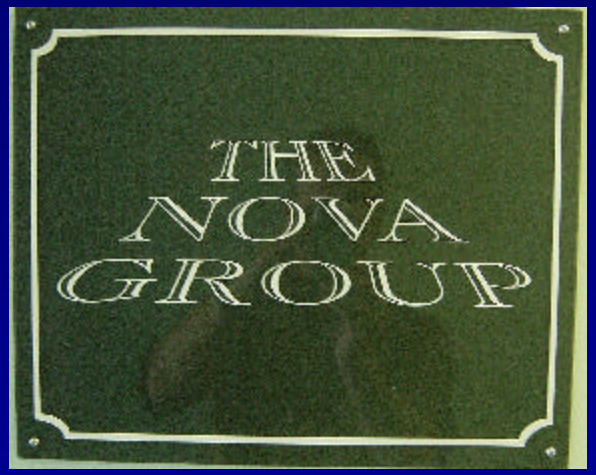
Mud Creek, MI (1992)

- Charter “consumptive use” request (in Basin)
- Ag irrigation project
- 8.6 mgd to 14.4 mgd
- Consultation held in Mich.
- “Consensus” not achieved
- Michigan went ahead despite objections
- Tangible regional frustrations with Charter process

Akron, OH (1994)

- WRDA Diversion request
- 4.8 mgd with complicated return flow
- Akron straddles Basin line
- No public hearing
- Governors approved diversion
- Bitter court fight with neighbors
- Diversion went through, but Akron lost other water rights
- Regional concerns about Great Lakes water regulations continue

The Nova Group (1998)



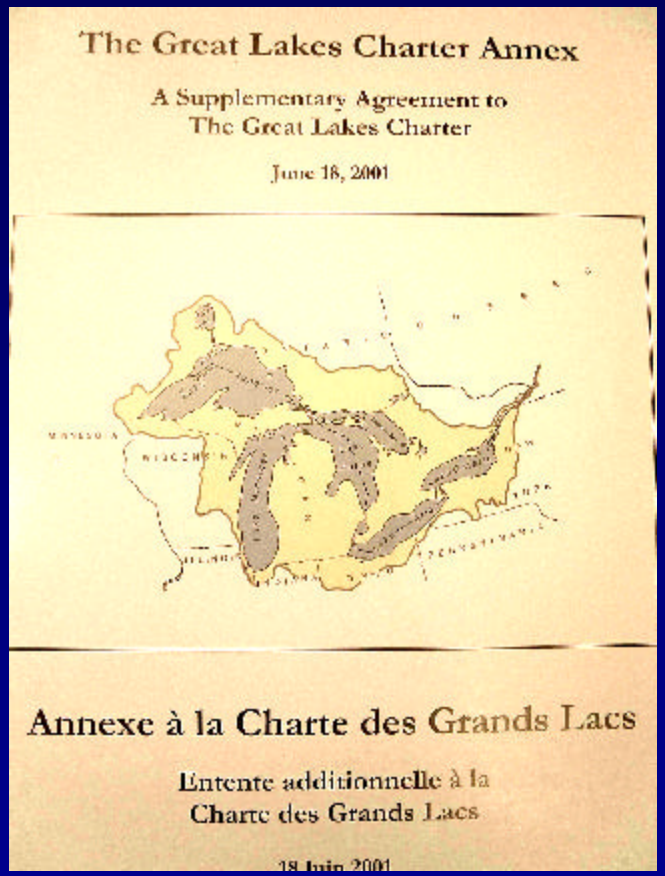
- Plan to ship 158 million gallons per year to Asia
- Could not be stopped by anti-diversion laws in the U.S. or Canada
- Concern about international precedent
- Highly controversial proposal
- Nova proposal raised serious questions about the adequacy of Great Lakes water laws

Canadian Response to Nova

- Successfully pressured Nova Group to withdraw permit
- Ontario passed provincial legislation banning diversions from the Great Lakes and other major watersheds
- Canada’s Parliament passed federal legislation banning diversions from the Great Lakes

U.S./Canada Response to Nova: Annex 2001

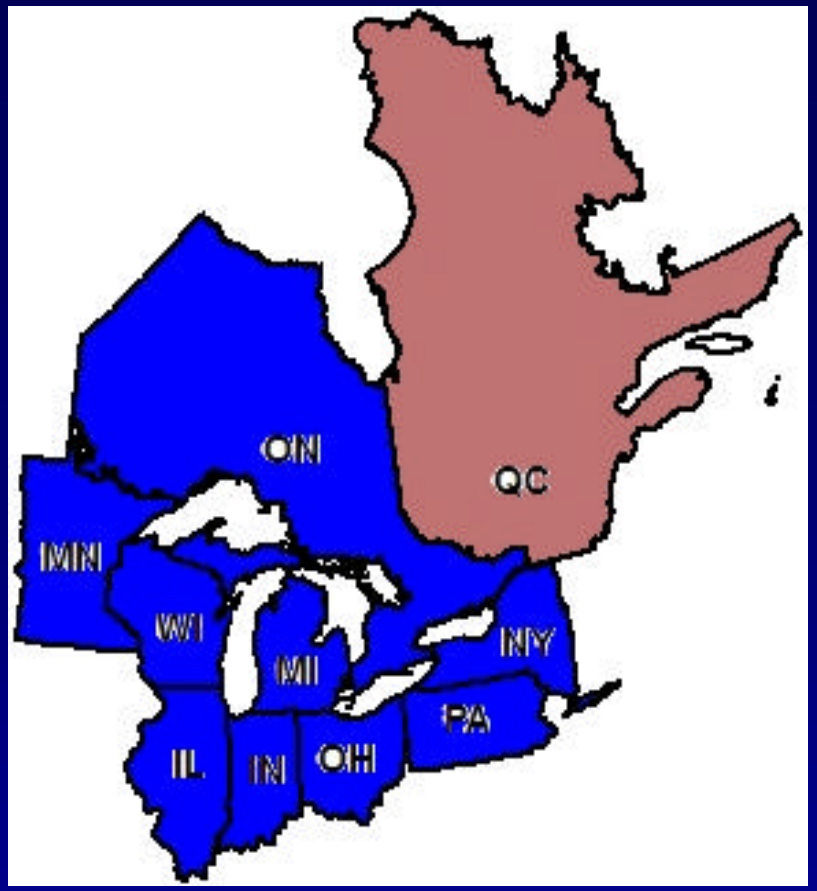
- Not a binding agreement, but a roadmap for a new water-management system
- Governors & premiers pledged to create a “binding” agreement “such as a compact”
- Envisioned a return-flow requirement
- No adverse environmental impacts
- Self-imposed 3-year deadline to release new water management system



Great Lakes Compact (2005)

- Released Dec 2005; bans new diversions, with limited exceptions
- States must regulate in-Basin water use
- New uniform standard for judging water withdrawals
- Conservation required
- Groundwater & tribs part of Basin
- Illinois diversion exempted
- Water in bottles smaller than 5.7 gallons not considered a diversion
- Provinces adopt similar regs

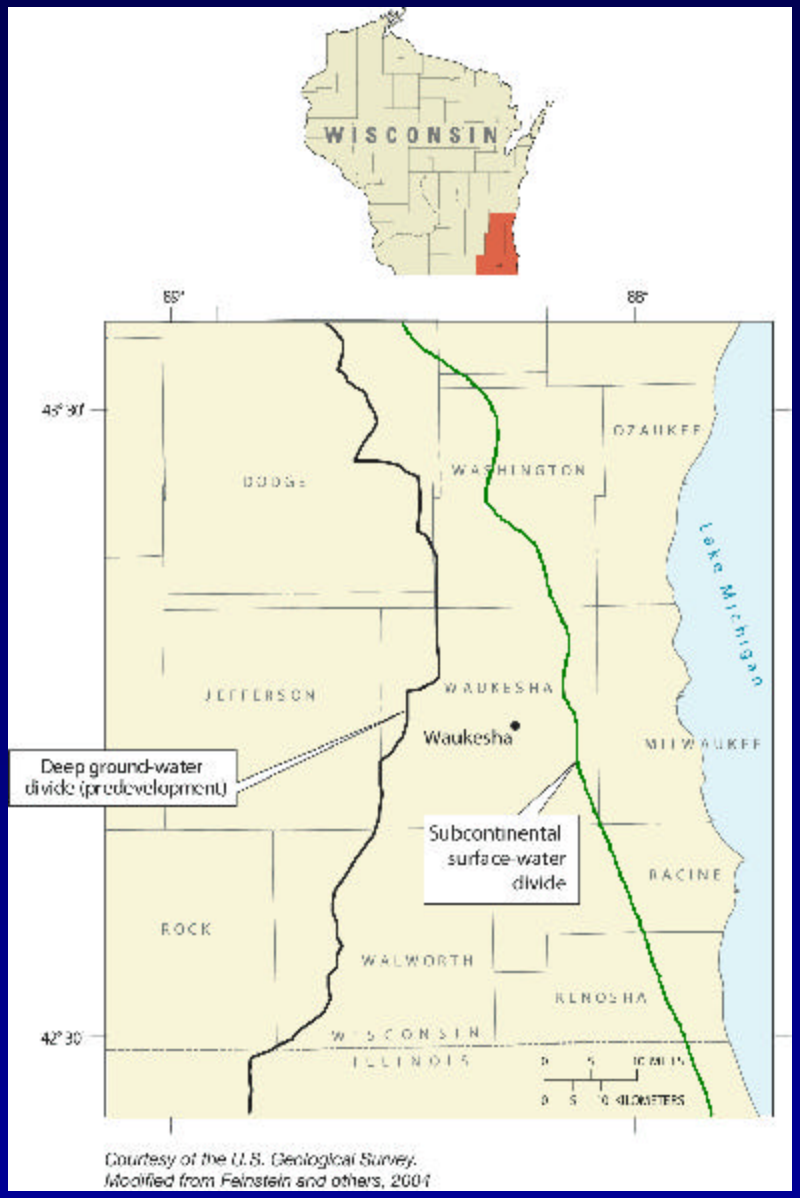
Compact's Status?



Council of Great Lakes Governors

- Compact has been adopted by all 8 Great Lakes legislatures *and* Congress
- President Bush signed it Oct. 3
- Companion agreement that mirrors Compact has been adopted by Ontario
- Quebec passage expected this fall
- Then what?

New Berlin & Waukesha in ‘09?



Courtesy of the U.S. Geological Survey. Modified from Feinstein and others, 2004

- Two communities on or near the Basin line that are suffering water problems
- They fall under the “exceptions” clause
- They are allowed to apply for a diversion but must meet a series of strict requirements--most notably, return flow
- Approval is not guaranteed
- New Berlin has applied, Waukesha expected to apply in ‘09

Bottom line

- Like the rest of the world, the Great Lakes region is entering a period of increased water tension
- Climate change will likely exacerbate those tensions
- Water-starved areas (near & maybe far) will continue to look to water-rich regions like the North American Great Lakes for help
- The prior system was dysfunctional and highly unpopular
- The Great Lakes region now has a new, modern, binding world-class water regulatory system designed to protect this globally significant resource for the next 100 years and beyond
- The Great Lakes region has reached a historic turning point. A new water management paradigm has been adopted. Will this serve to decrease regional water tension and keep outside water interests at bay? Stay tuned

Photo by RJ & Linda Miller

www.greatlakeswaterwars.com