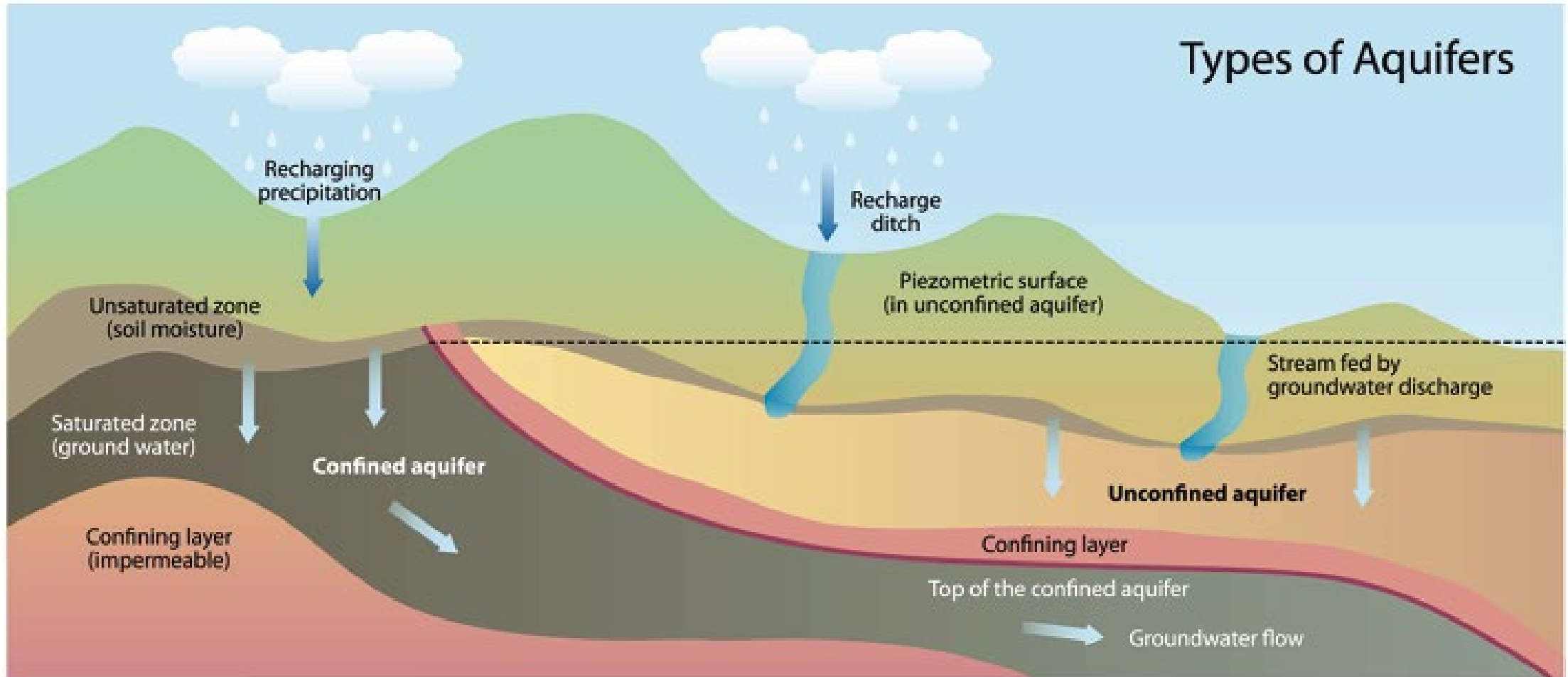


Groundwater Law & Agriculture in the Mid-South: Taking Stock of the Road Ahead

12th Annual Mid-South Ag & Environmental Law Conference

Groundwater



Groundwater is usually “self-supplied”

- There are very few restrictions on drilling wells
- If you have water under your land, you can hire a licensed contractor to drill
- There are hundreds of thousands of wells
- Don't have to move the water very far—just drill a new well close to where it is needed



Arkansas nationally ranks in water withdrawals

Total water withdrawals, top States, 2015
[percentages calculated from unrounded values]

State	Percentage of total withdrawals
California	9%
Texas	7%
Idaho	6%
Florida	5%
Arkansas	4%

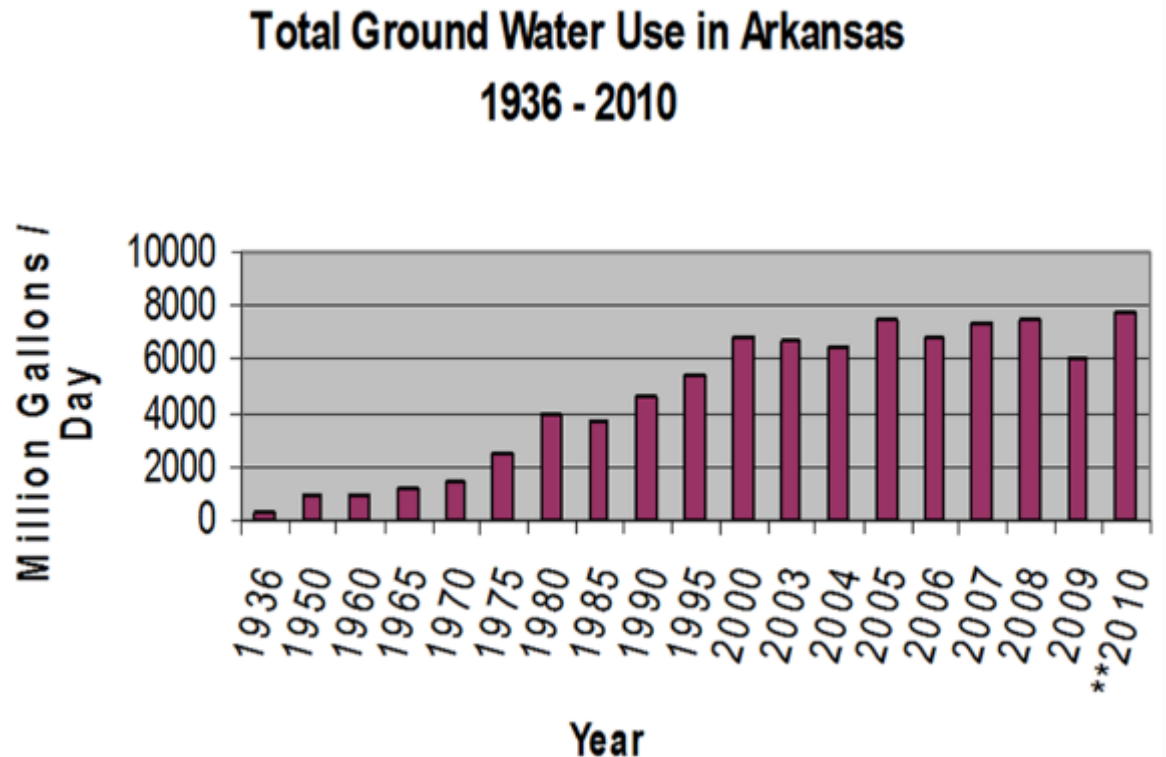
Groundwater withdrawals, top States, 2015
[percentages calculated from unrounded values]

State	Percentage of total withdrawals
California	21%
Arkansas	11%
Texas	9%
Nebraska	7%
Idaho	6%

Source, US Geological Survey

What does Arkansas use water for?

- 11 billion gallons of water a day
- In a year's time, that's 12.4 million acre-feet – enough to cover the entire state in 4.2 inches of water
- Largest demands:
 - Public drinking water 3.5%
 - Thermoelectric power 11%
 - Crop irrigation 80%
 - About 85% of that is groundwater



Groundwater loss

Well studied

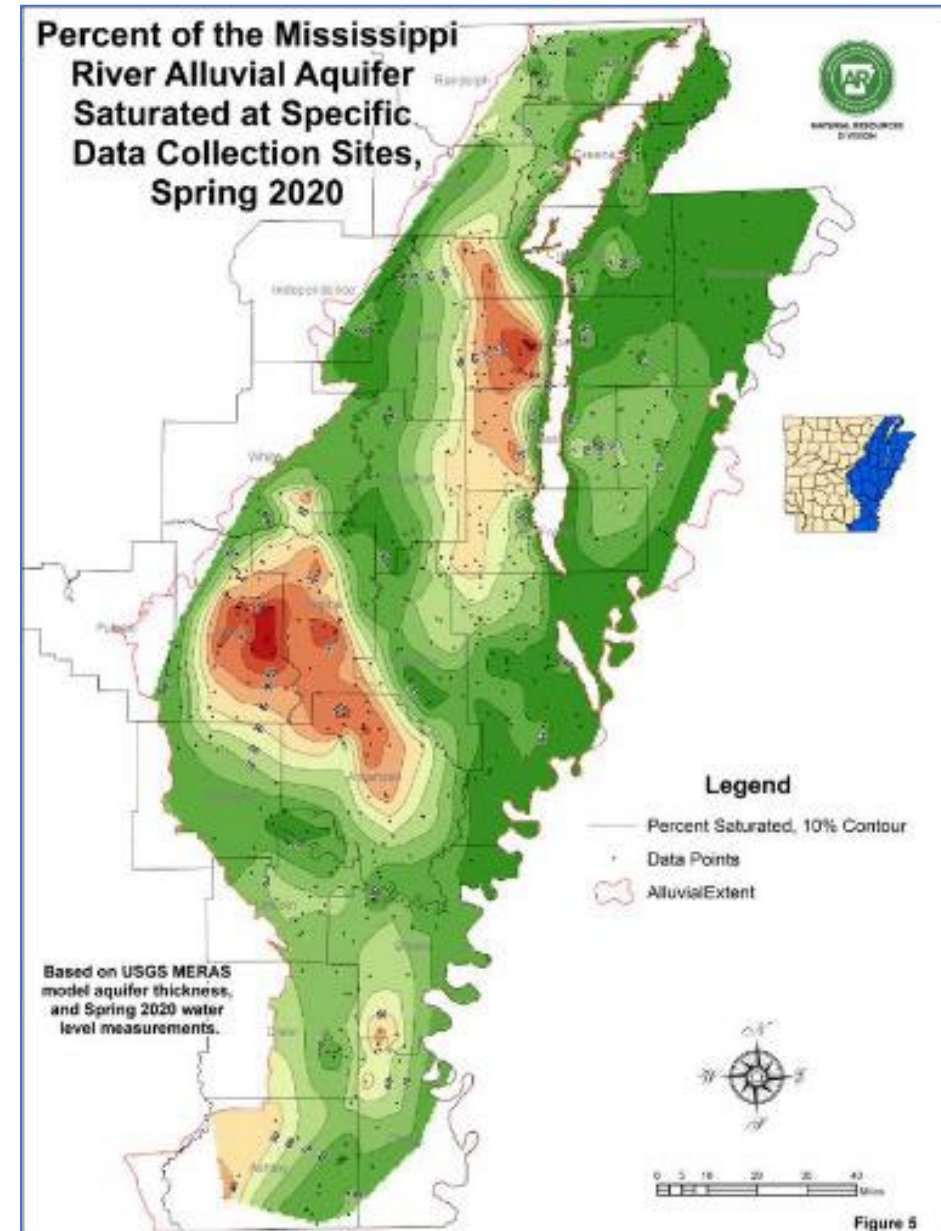
- Noticed by 1920
- Measured since then
- Modeling

Supply gap

- Demand 8.7 million AFY
- Sustainable 1.9 million AFY
- Supply gap 6.8 million AFY

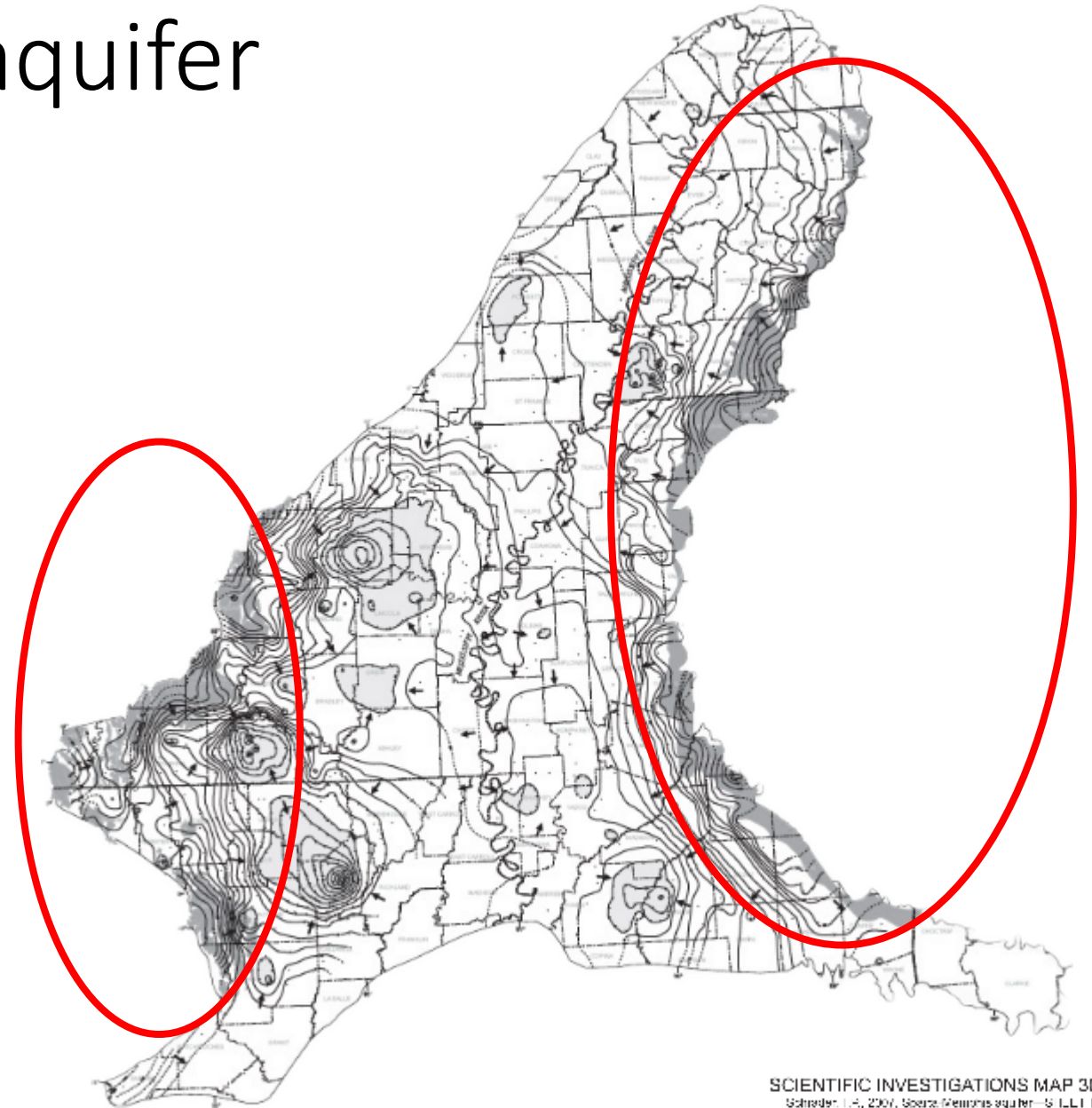
Consequences

- Less available water
- Lost drought resilience
- Higher pumping costs
- Increased drilling costs
- Fewer irrigated acres
- Sparta aquifer threatened





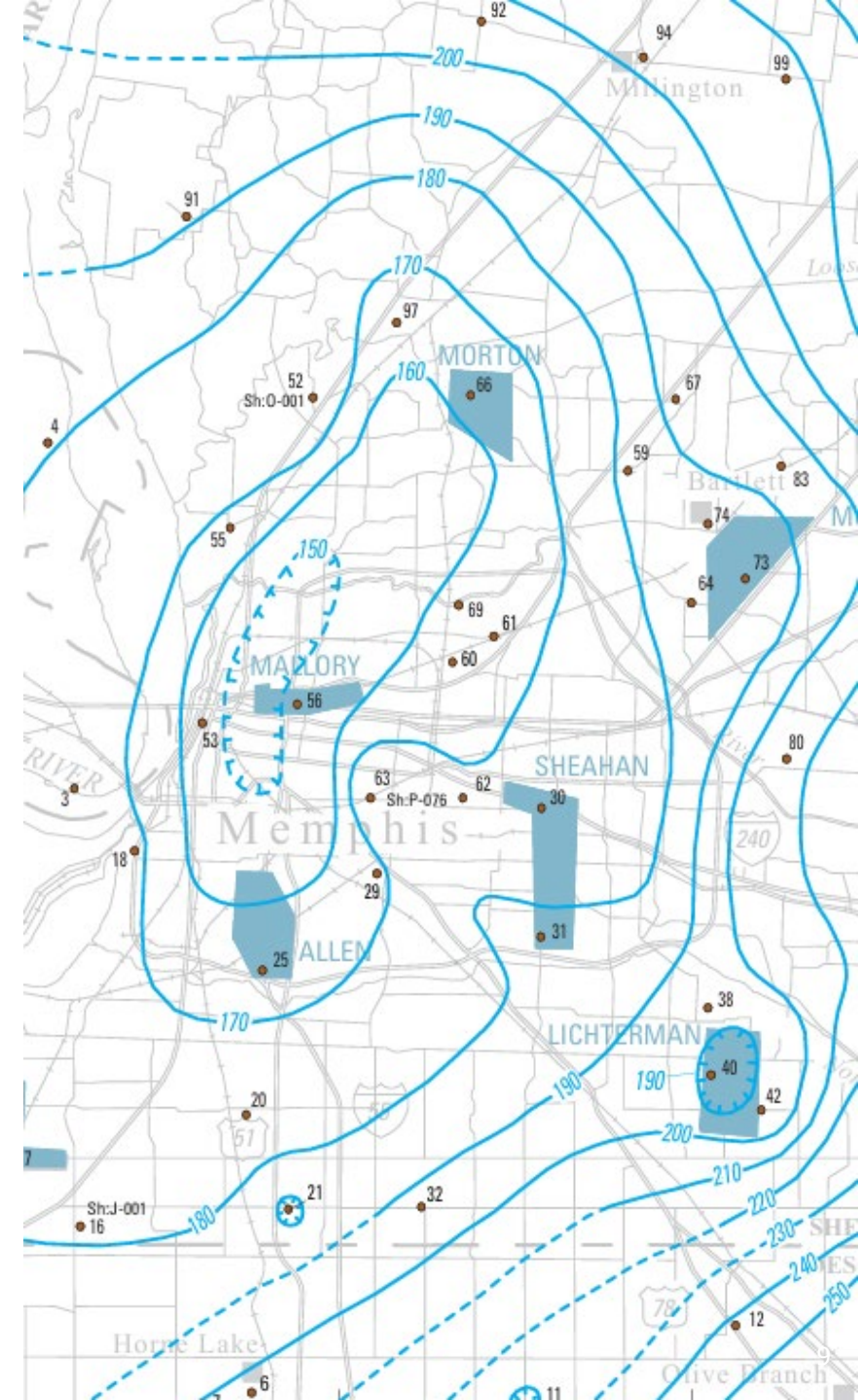
The Sparta-Memphis aquifer



Mississippi v. Tennessee, 595 U.S. ____ (2021)

- Mississippi: Tennessee's withdrawals caused Mississippi's groundwater to flow toward the depression
- Alleged groundwater being pulled into Tennessee was Mississippi's property, and that Tennessee was removing it unlawfully
- Over \$600 million damages sought
- Supreme Court Ruling: Unanimous dismissal – The groundwater flows between the states, is a shared resource not exclusively owned, so it is subject to equitable apportionment

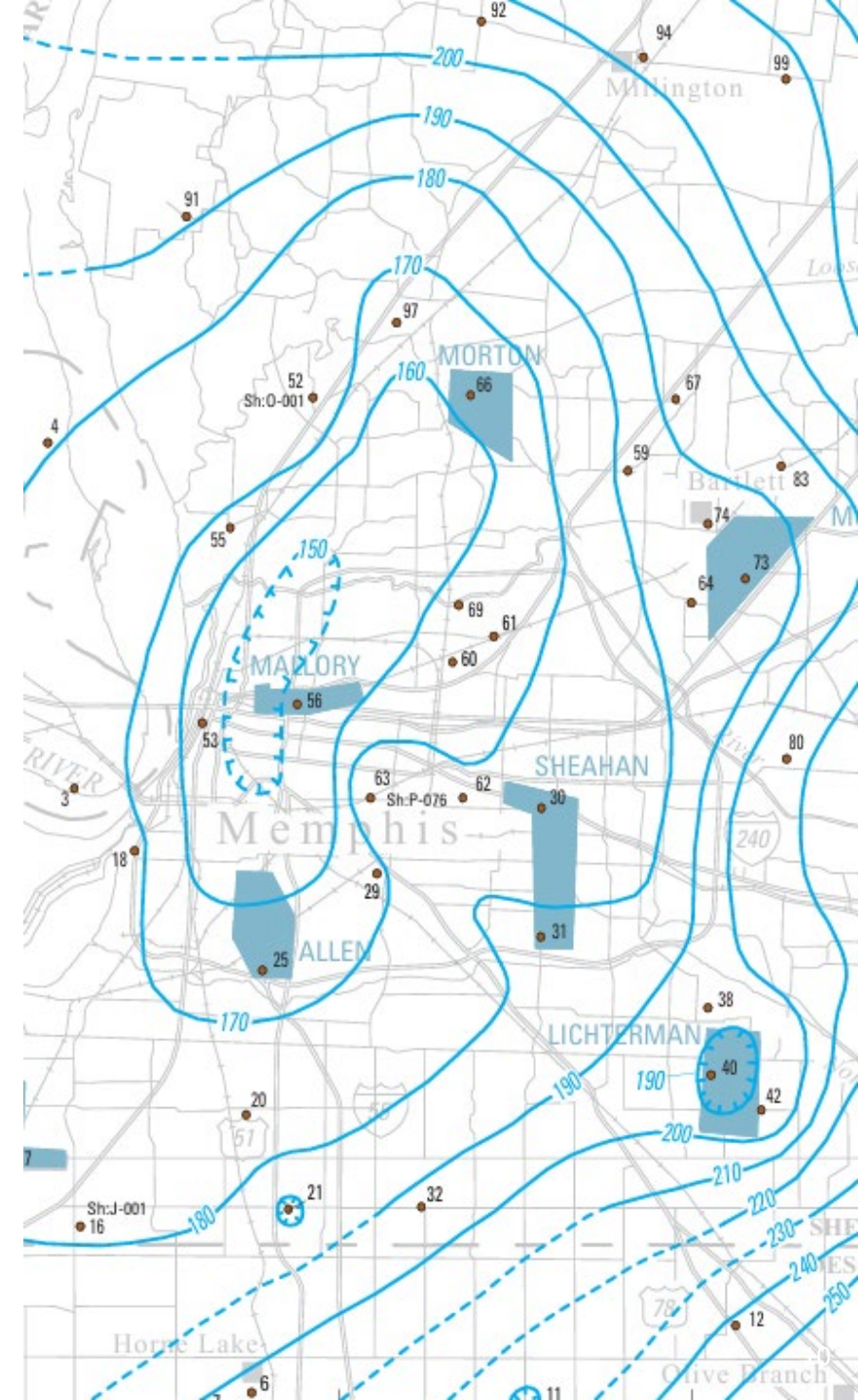
Illustration: Kingsbury, J.A., 2018, Altitude of the potentiometric surface, 2000–15, and historical water-level changes in the Memphis aquifer in the Memphis area, Tennessee: U.S. Geological Survey Scientific Investigations Map 3415, 1 sheet, <https://doi.org/10.3133/sim3415>.

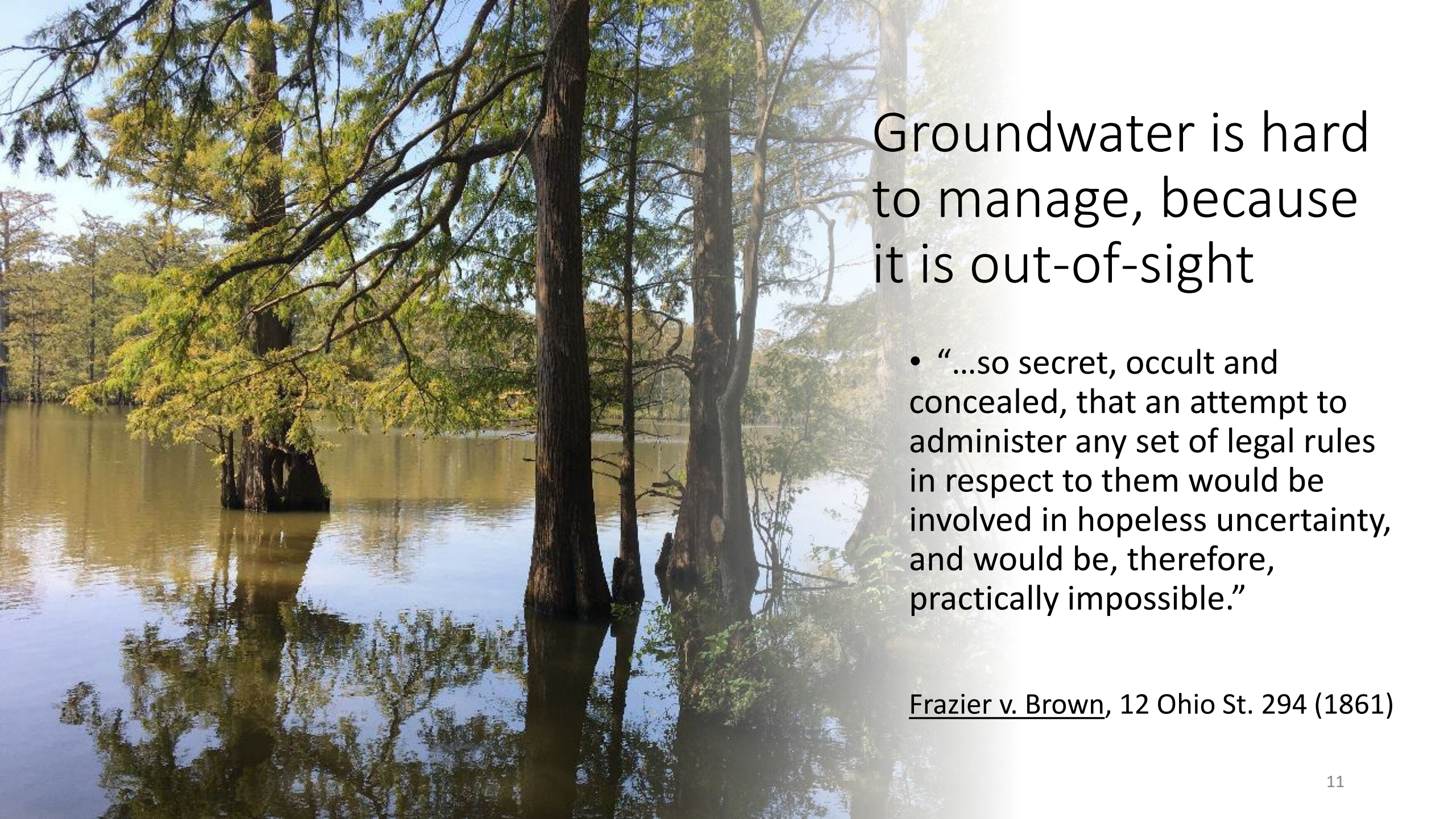


Mississippi v. Tennessee, 595 U.S. ____ (2021)

- Court extended equitable apportionment from interstate surface water to interstate groundwater
- Case ended without equitable apportionment, because Mississippi only pursued trespass claim
- This left no opportunity to try apportionment
- Equitable apportionment still requires one state to prove significant injury from other state's water use
- One way around equitable apportionment would be interstate compacts, which are now used extensively for surface water

Illustration: Kingsbury, J.A., 2018, Altitude of the potentiometric surface, 2000–15, and historical water-level changes in the Memphis aquifer in the Memphis area, Tennessee: U.S. Geological Survey Scientific Investigations Map 3415, 1 sheet, <https://doi.org/10.3133/sim3415>.



A scenic view of a swampy area with tall, thin trees and their reflections in the water. The trees are mostly cypresses, with some showing yellowing leaves. The water is calm and reflects the trees and sky. The background shows a dense forest of similar trees under a clear blue sky.

Groundwater is hard to manage, because it is out-of-sight

- “...so secret, occult and concealed, that an attempt to administer any set of legal rules in respect to them would be involved in hopeless uncertainty, and would be, therefore, practically impossible.”

Frazier v. Brown, 12 Ohio St. 294 (1861)

Interstate groundwater compacts

- A compact between Sparta-Memphis states could be a vehicle for management of the interstate resource
- Arkansas law has a provision for Sparta compact negotiation in Ark. Code Ann. § 15-20-207
- Compact rules likely would include
 - “Safe” or “sustainable” yield
 - A percentage of that yield that each state is entitled to pump
 - Method to account for pumping
 - Procedure to allege over-pumping and request remedies
- **How does a state government make well owners with private property rights to use groundwater pump less?**

Arkansas's judicial approach

Jones v. Oz-Ark-Val Poultry Co., 228 Ark. 76, 306 S.W. 2d 111 (1957)

- Rejected “English Rule” of unlimited pumping
- Out of the blue adopted “American Rule” of reasonable use
- With “correlative rights,” meaning neighbors have equal right to pump

Lingo et al. v. City of Jacksonville, 258 Ark. 63, 522 S.W.2d 403 (1975)

- Similar case with a municipal water system's well field in a rural area
- No issue moving water off-site if it does not reduce the common supply

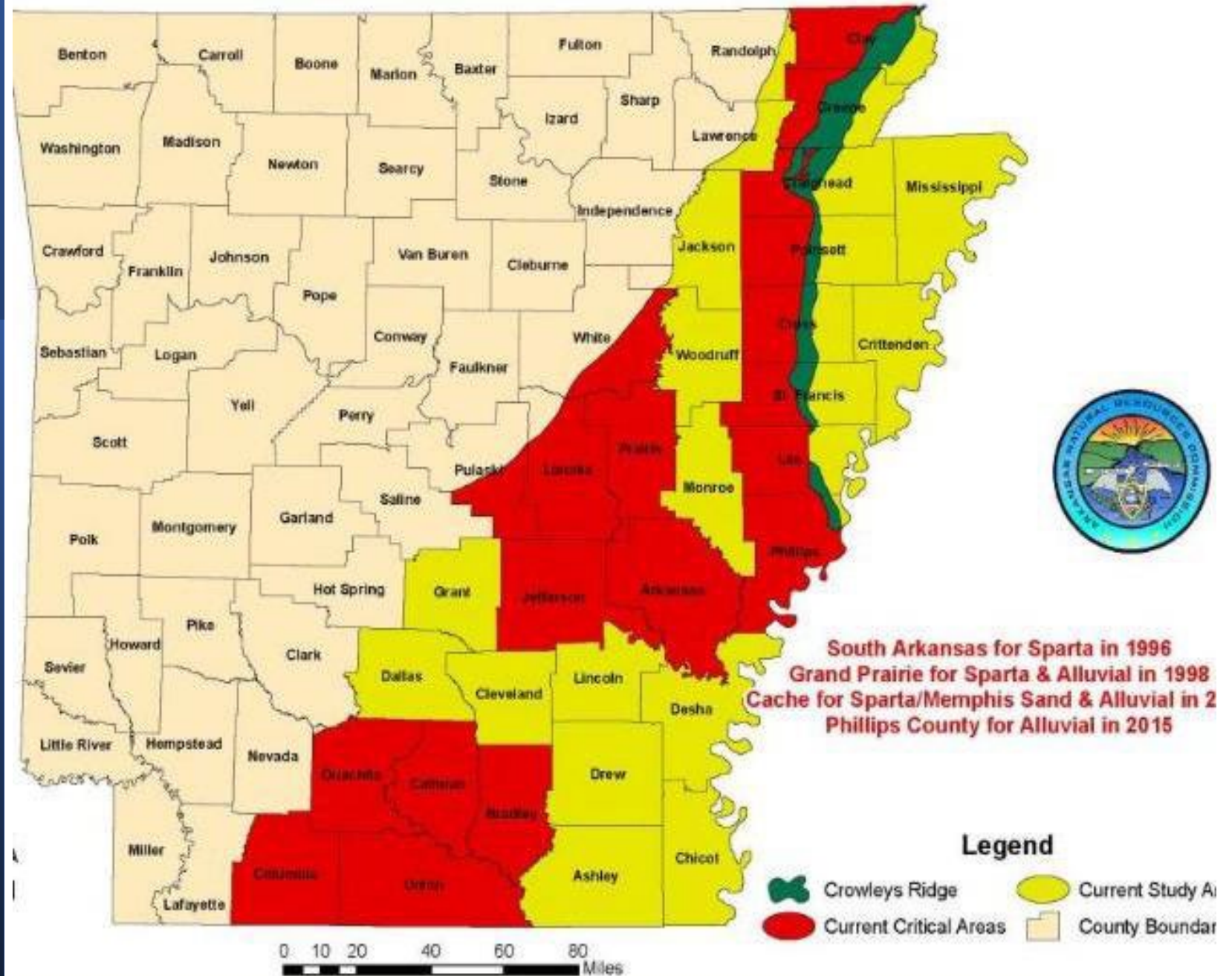
Arkansas's legislative approach

- Litigation is a terrible way to resolve water disputes
 - Arkansas works to provide information to water users, encourage conservation, and find ways to increase surface water use
- Legislature has passed laws to help conserve groundwater
 - Water use registration
 - Tax credits
 - Arkansas Groundwater Protection and Management Act
 - Non-riparian transfer

Critical Groundwater Areas

1991: Arkansas Groundwater Protection and Management Act

Ark. Code Ann. § § 15-22-901—915



Registering and Reporting

- Registration/reporting annually
 - After-the-fact, not pre-permitting
 - Surface: Ark. Code Ann. §15-22-215
 - Ground: Ark. Code Ann. §15-22-302
 - Wells capable of 50,000 GPD or more-not domestic wells
- “...fee for...withdrawal...” Ark. Code Ann. §15-22-913
 - Does that indicate a public ownership interest in the water?

Limited regulation authority

- The Groundwater Act provides for reduction of pumping, but provides numerous loopholes
- This would make compact compliance almost impossible in the short term or without amendment
 - Grandfathering
 - Groundwater right issued for past 3 years reported beneficial use
 - Replacement wells
 - Domestic and <50,000 gallons per day capacity
 - Public water systems
 - Water bottlers
 - New well-drilling free-for-all during first regulation year with amount set at the quantity of water the owner says is necessary for beneficial use

Administrative pumping reduction

- The State of Arkansas would issue groundwater rights for wells, but:
- To require a well owner to use less groundwater, surface water must be available
 - At a comparable price for alluvial wells
 - Operating and depreciation costs
 - At any price for “sustaining aquifers”
- No reduction on demonstration of 20% lower withdrawal or with an approved conservation plan
- And: No reduction or limitation for anybody for 4 years!

Groundwater use limitations

- If groundwater were regulated, the Arkansas Natural Resources Commission could:
 - Enforce pumping schedules
 - Limit withdrawal quantities
 - Decide precedence based on “reasonable beneficial use”
 - Grant some right to off-tract uses
- Groundwater rights would run with the land, and could not be marketed or transferred

Regulation alternatives

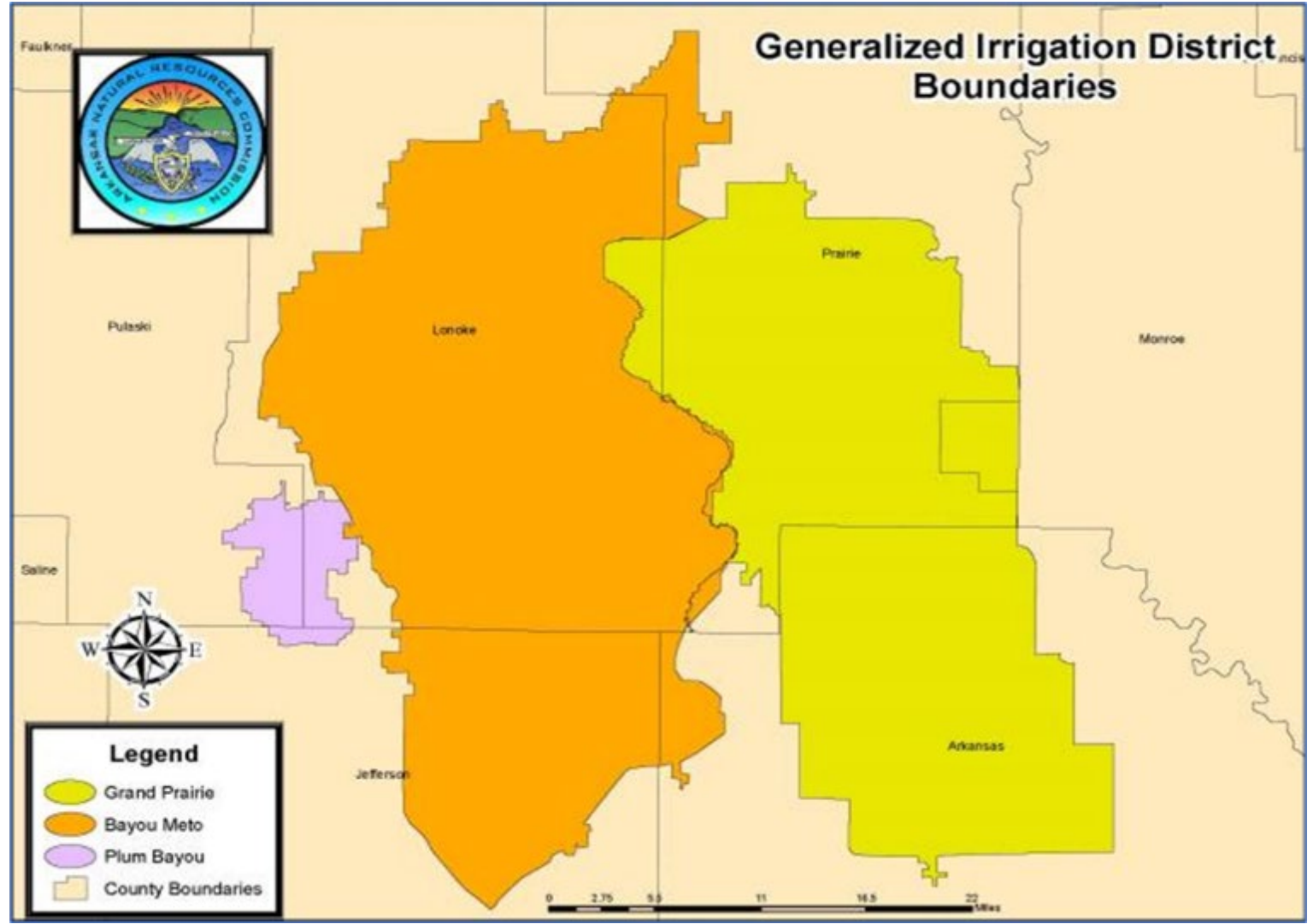
- Data
- Education
- Conservation
- Increased use of surface water

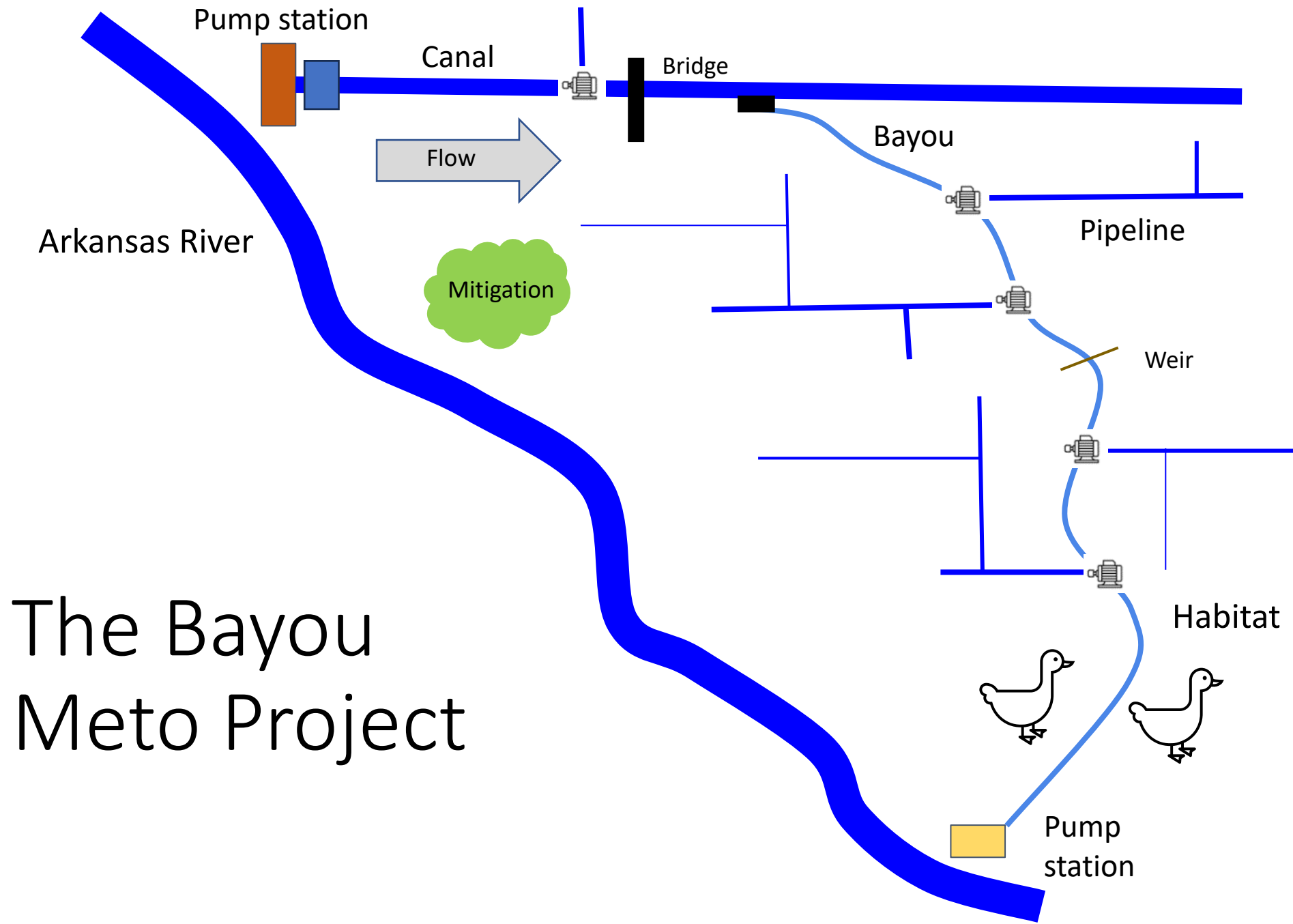
Sparta Aquifer Recovery Project



- Public-private partnership to use Ouachita River water for power generation and industry
- Aquifer saved mostly for drinking water
- Industry is expanding
- Water levels are rebounding dramatically—Over 100 feet in the “Monsanto Well” since 2004

Large water delivery projects under construction





The Bayou Meto Project

Questions and Discussion



Water Management District

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