



Sustainable Water Management: Water for People and Nature

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Georgia Governor Declares Emergency Due to Drought

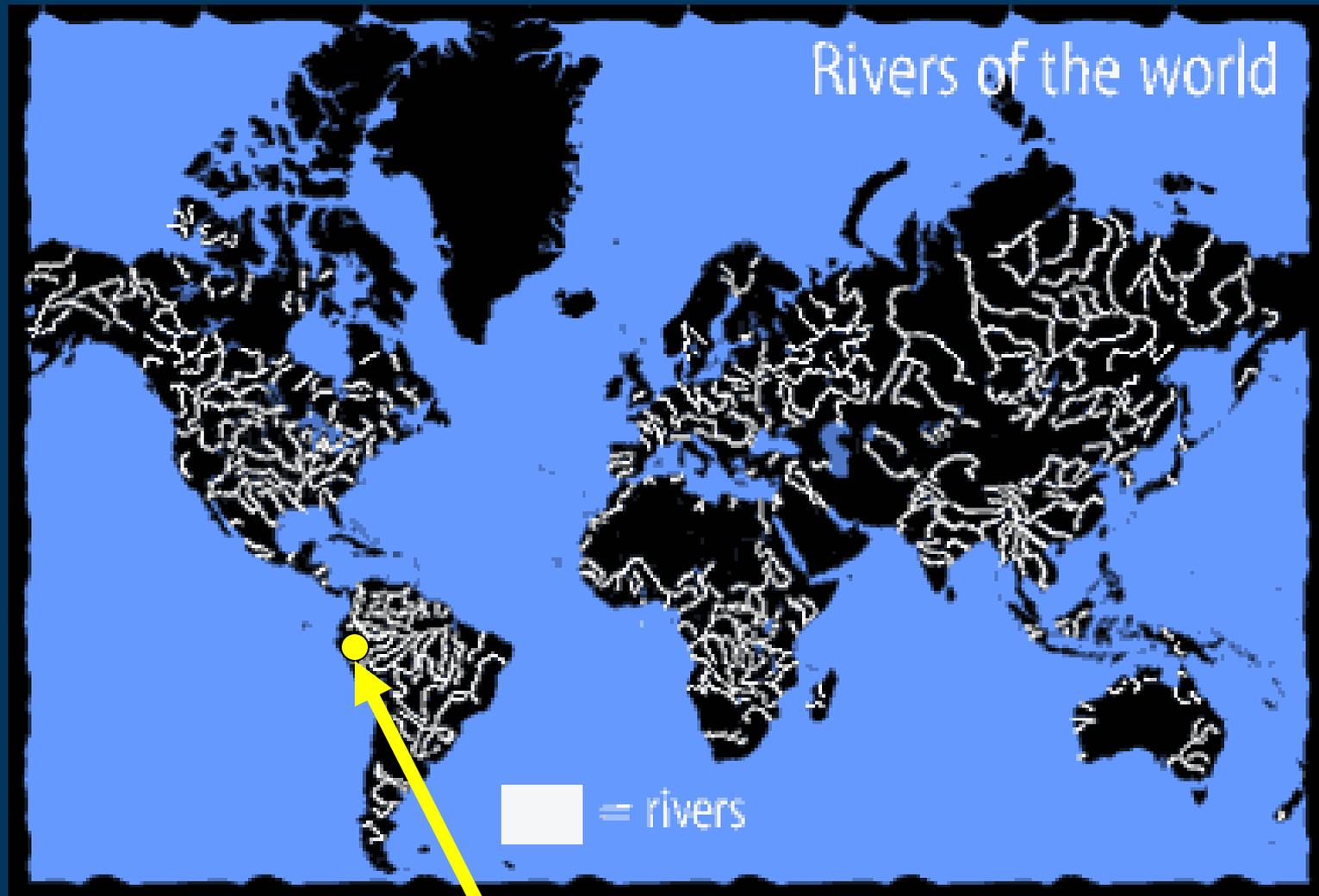
“Putting animals ahead of the lives and needs of Georgians is simply unacceptable.”

“Alabama is trying to use these insane rules of the fish and wildlife and the Corps of Engineers to dry Georgia up, and we're not going to let it happen”

The Atlanta Journal-Constitution, 10/20/07

“I'm telling you, when it comes to choosing between mussels and drinking water for children, I'm about fed up with this mess.”

Governor Perdue, Radio Appearance



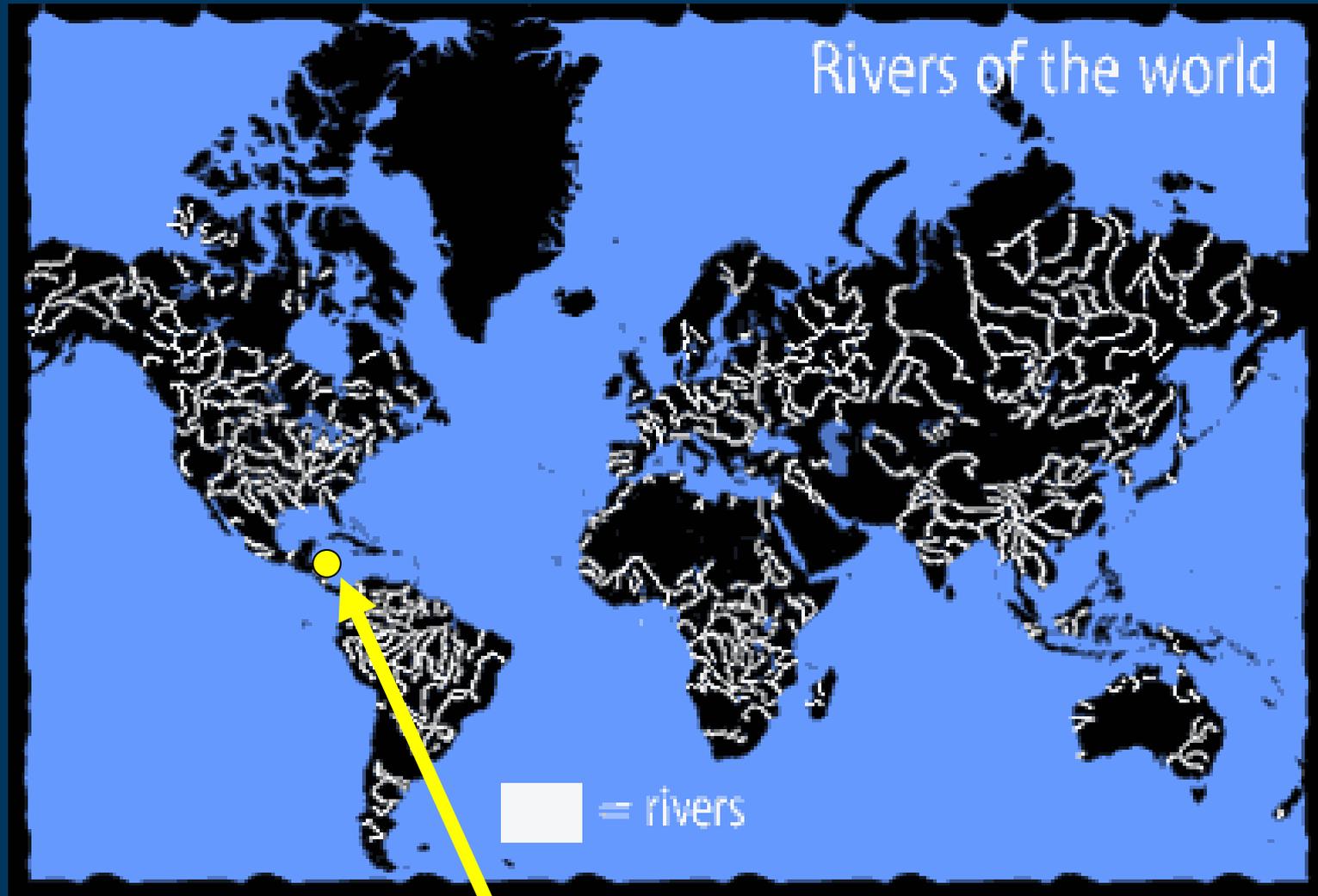
Quito, Ecuador









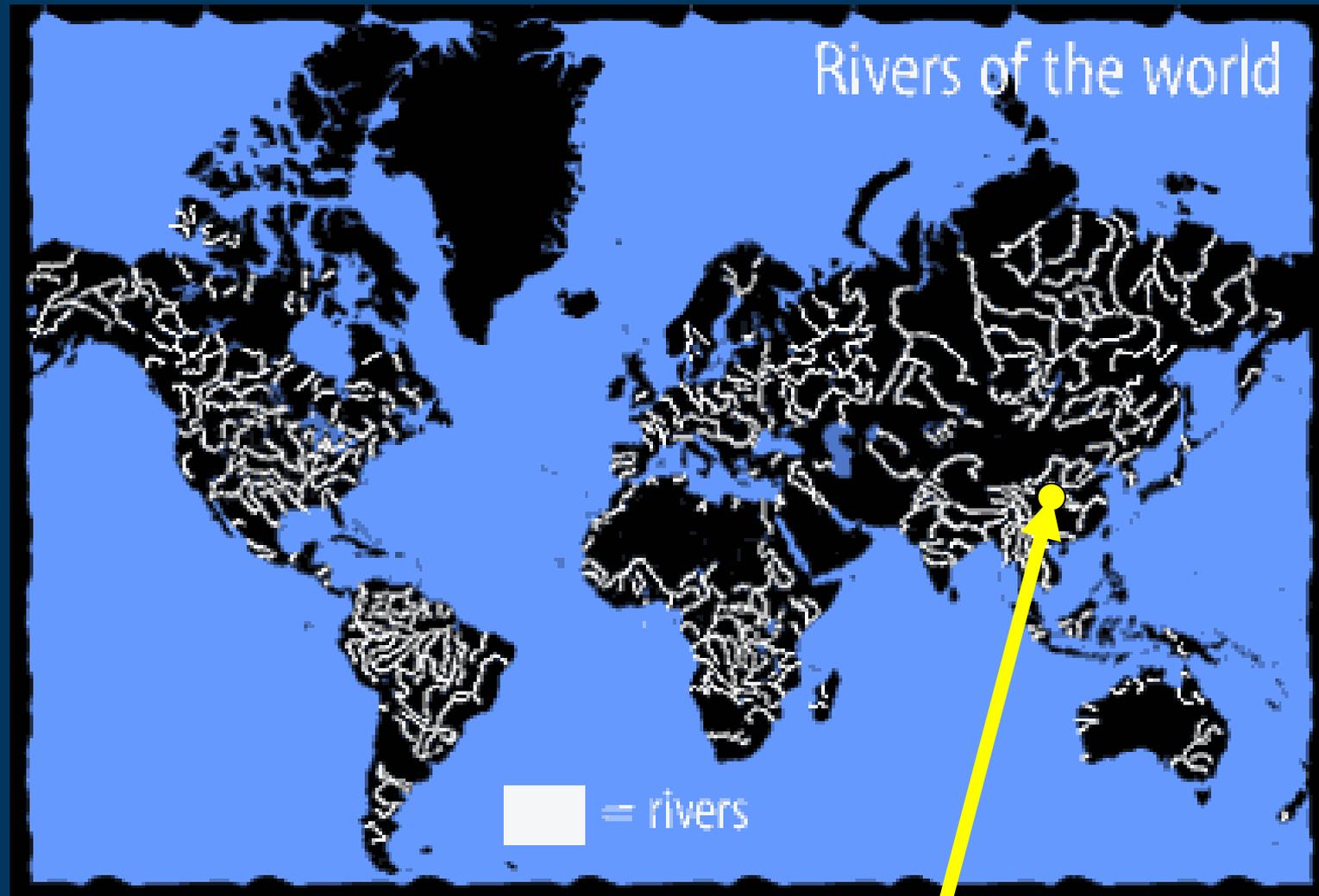


Patuca River, Honduras





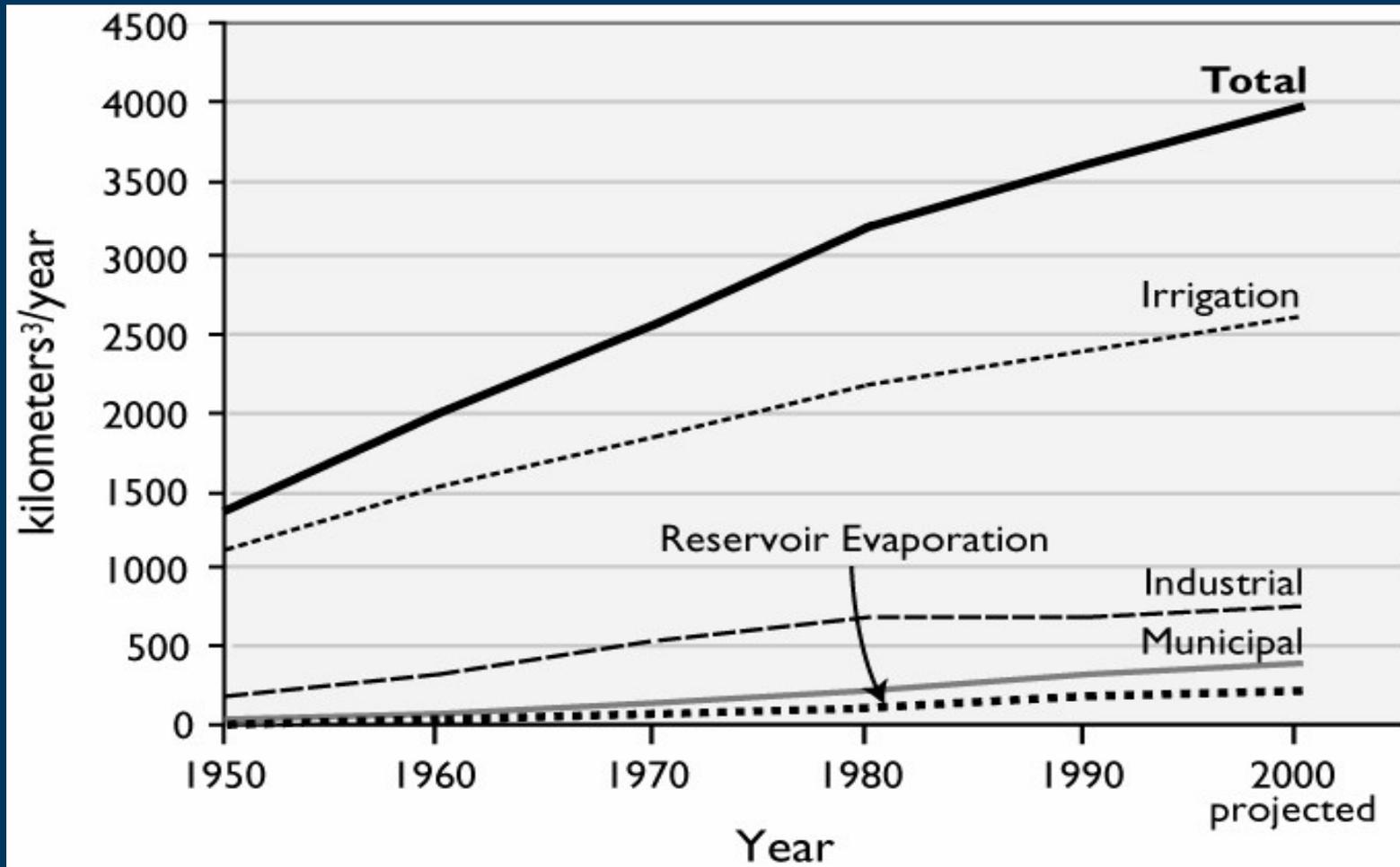




Yangtze River, China



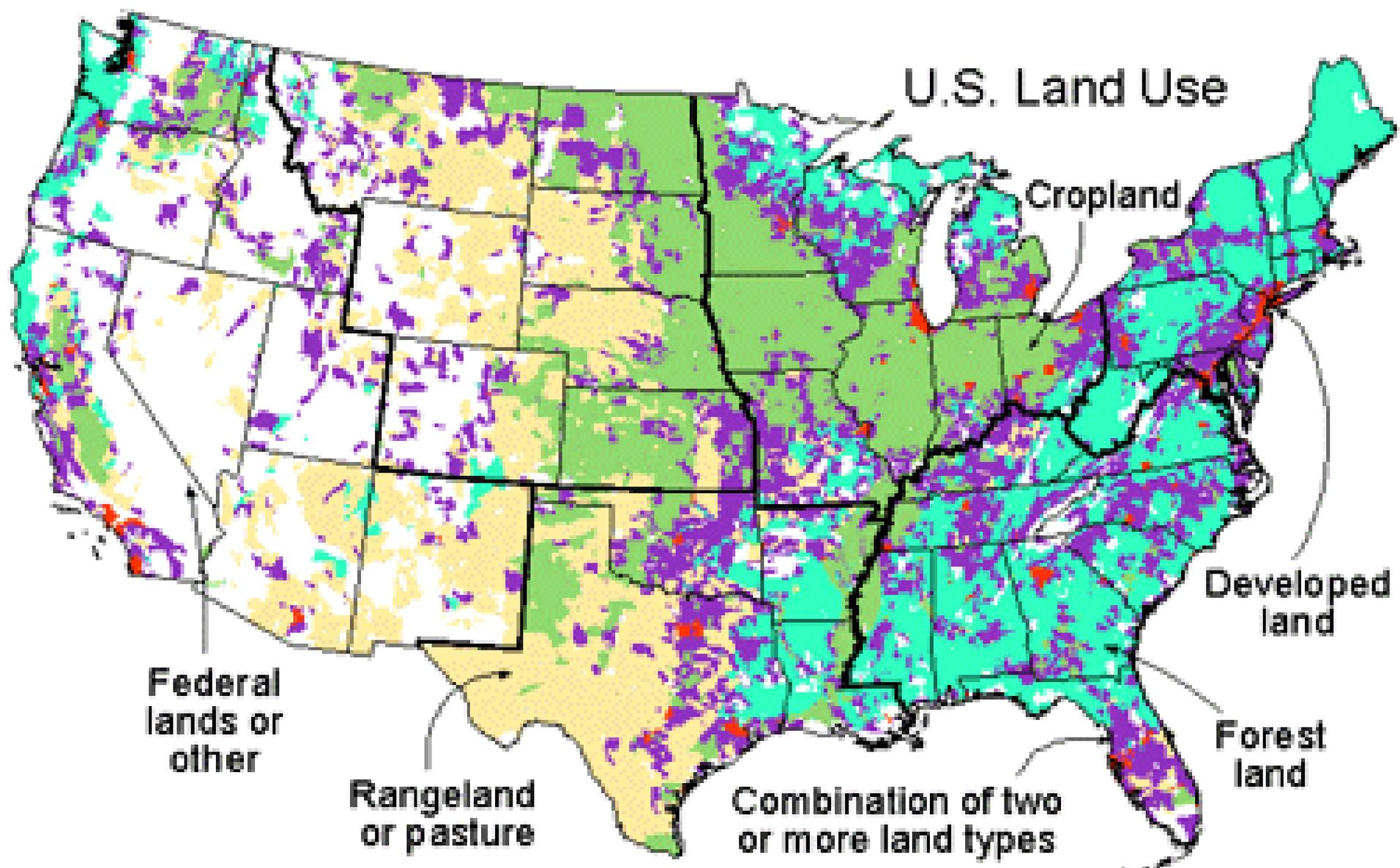
Global Water Consumption







(c) 2005 reto ambühler



U.S. Land Use

Cropland

Developed land

Forest land

Federal lands or other

Rangeland or pasture

Combination of two or more land types

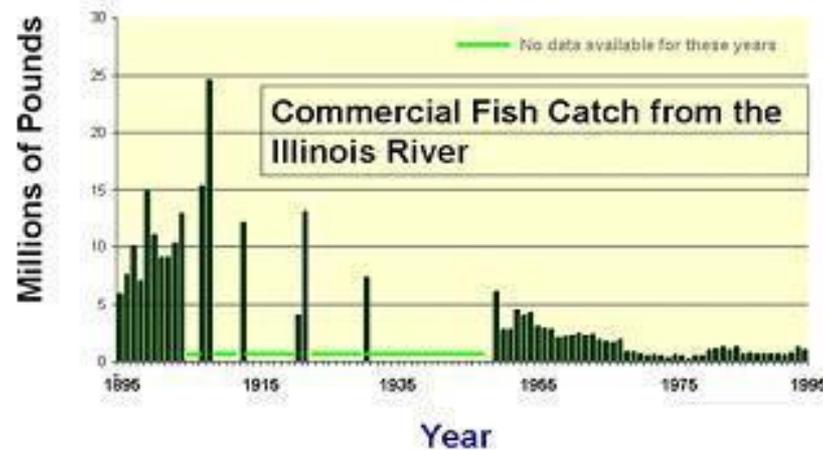
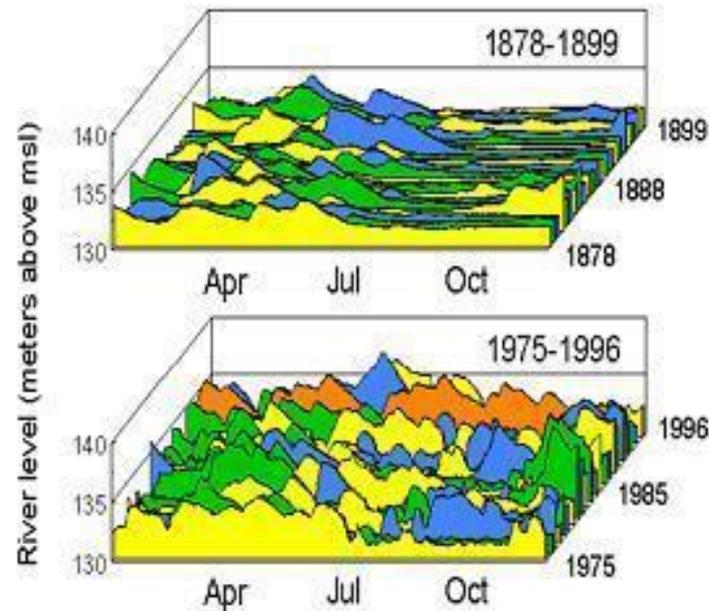




Agriculture







4. Change in flow in the Illinois River over 100 years of intensive flood and navigation management, compared with fish catch. From 1890-1910, 10% of the U.S. freshwater catch came from a 200-mile stretch of the lower Illinois River- more than any other river.

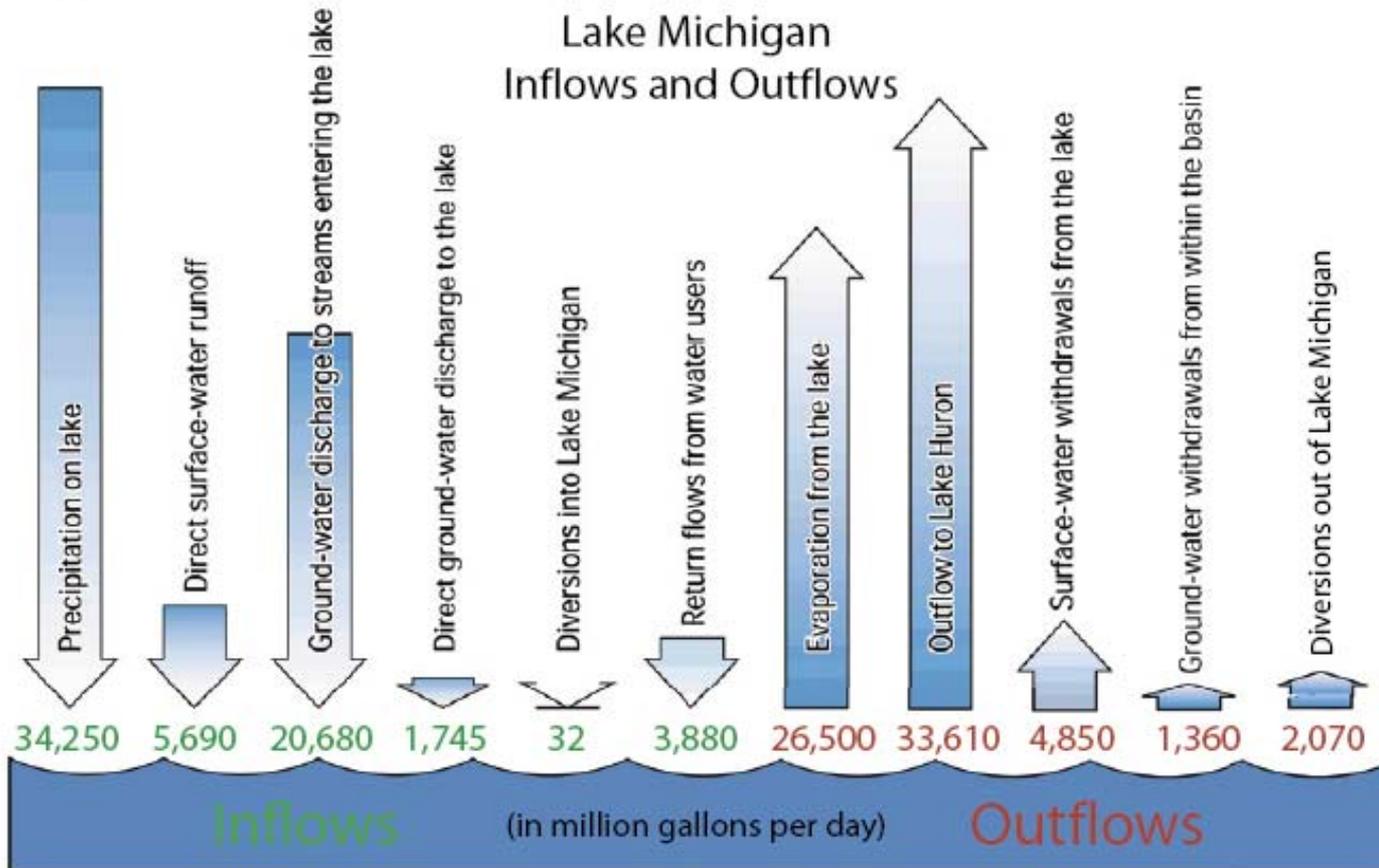
[courtesy of Rip Sparks]





Water Balance in the Great Lakes

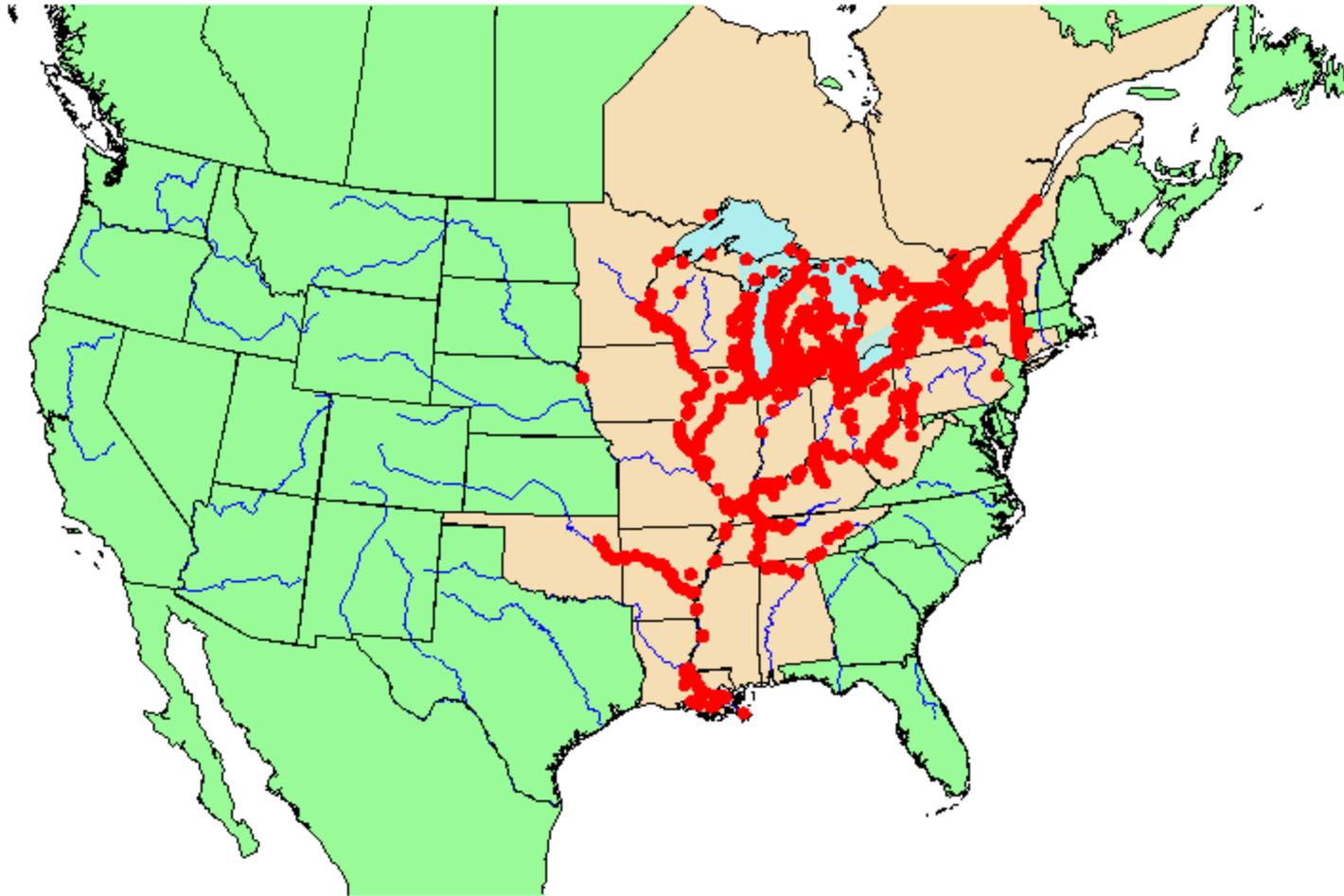
Lake Michigan Inflows and Outflows



Natural systems control the water balance in the Great Lakes, but human activities can alter this balance.

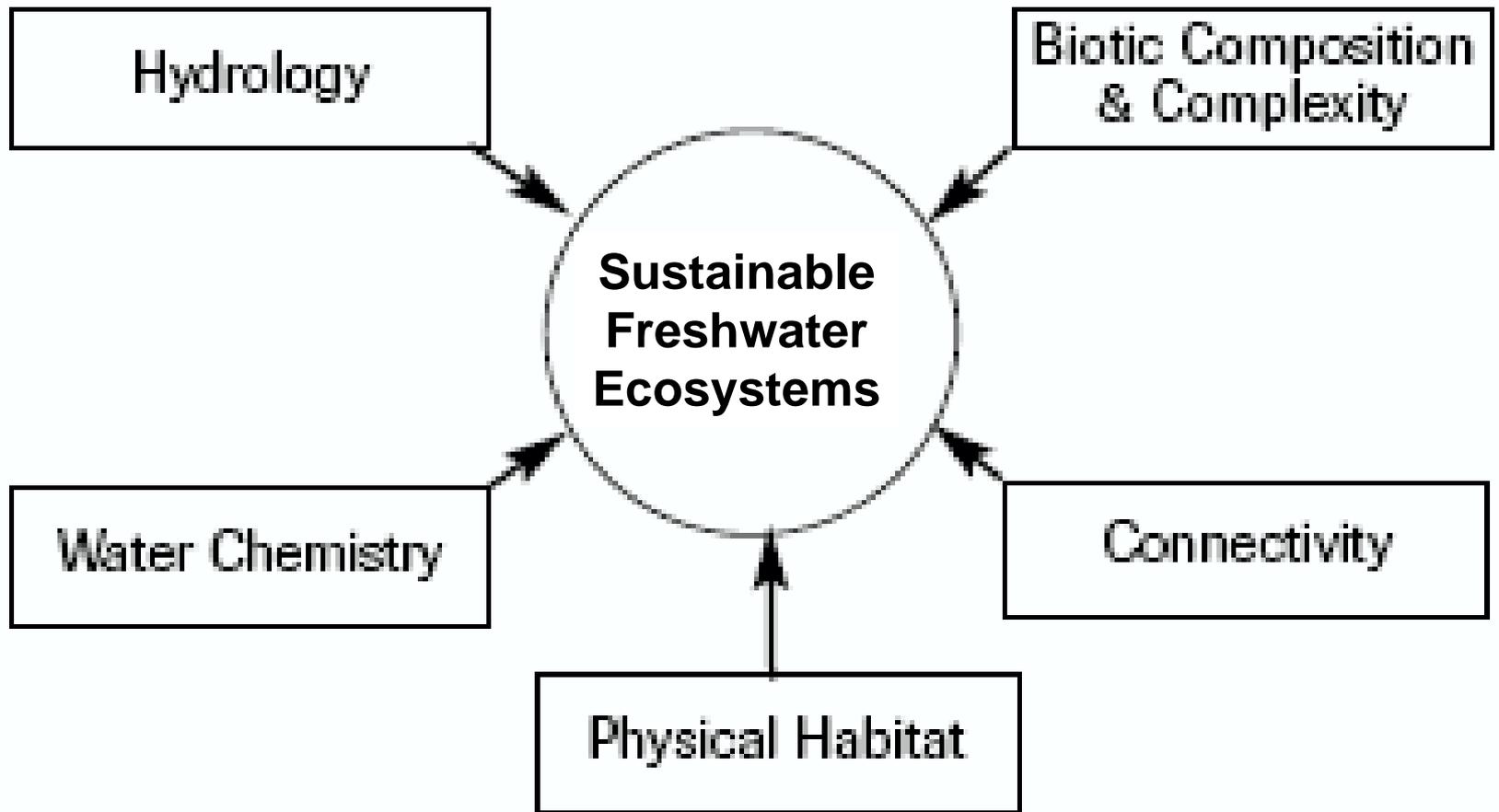
Source: Grannemann and others, 2000, "The Importance of Ground Water in the Great Lakes Region," Water-Resources Investigations Report 00-408, USGS

November 2000

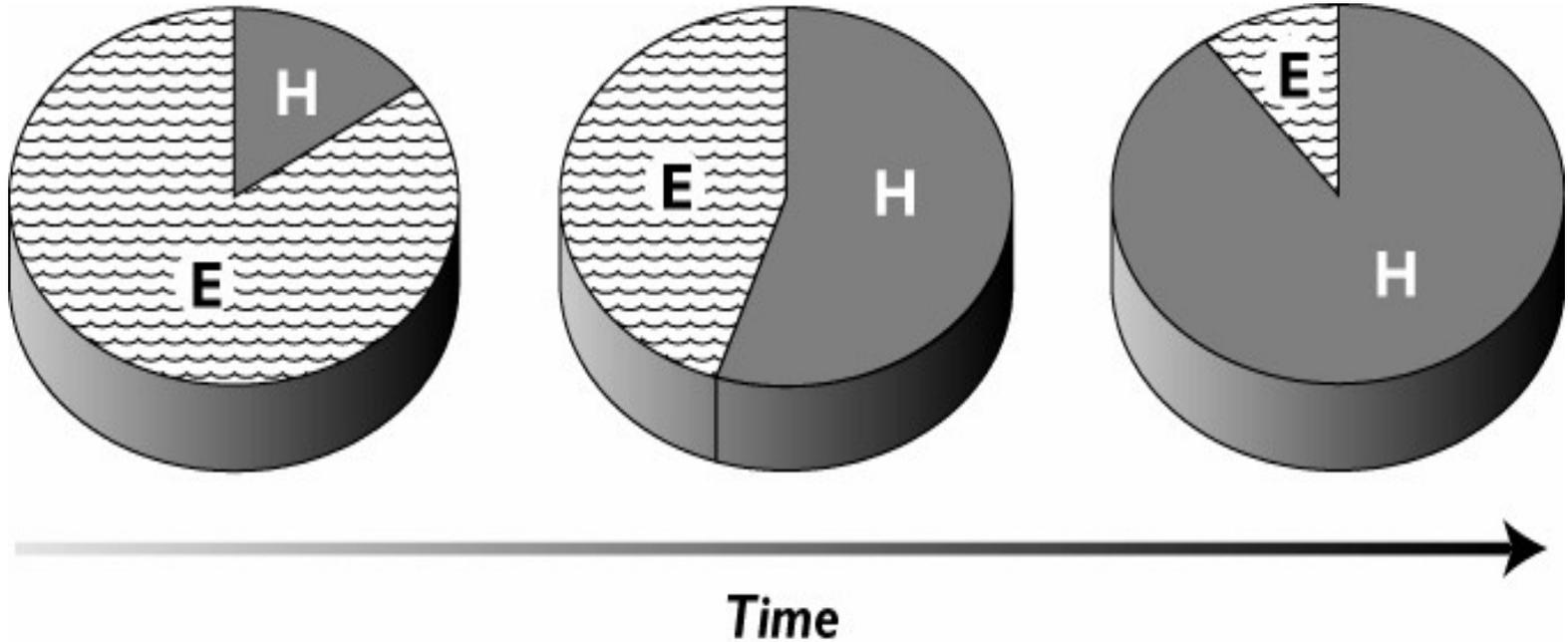


 **States with zebra mussels in inland and adjacent waters.**

Estimated costs to society (2000): 5 Billion dollars



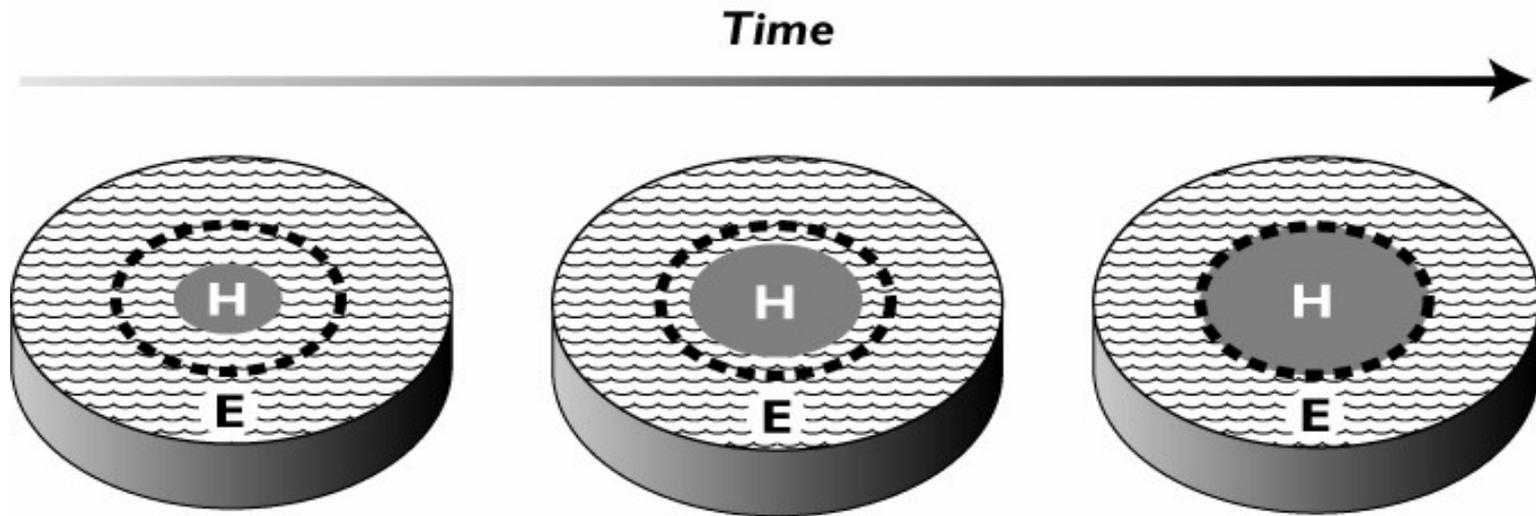
Traditional Approach to Water Management



E = ecosystem support
H = human use

From "Rivers for Life: Managing Water for People and Nature" by Sandra Postel and Brian Richter (Island Press 2003)

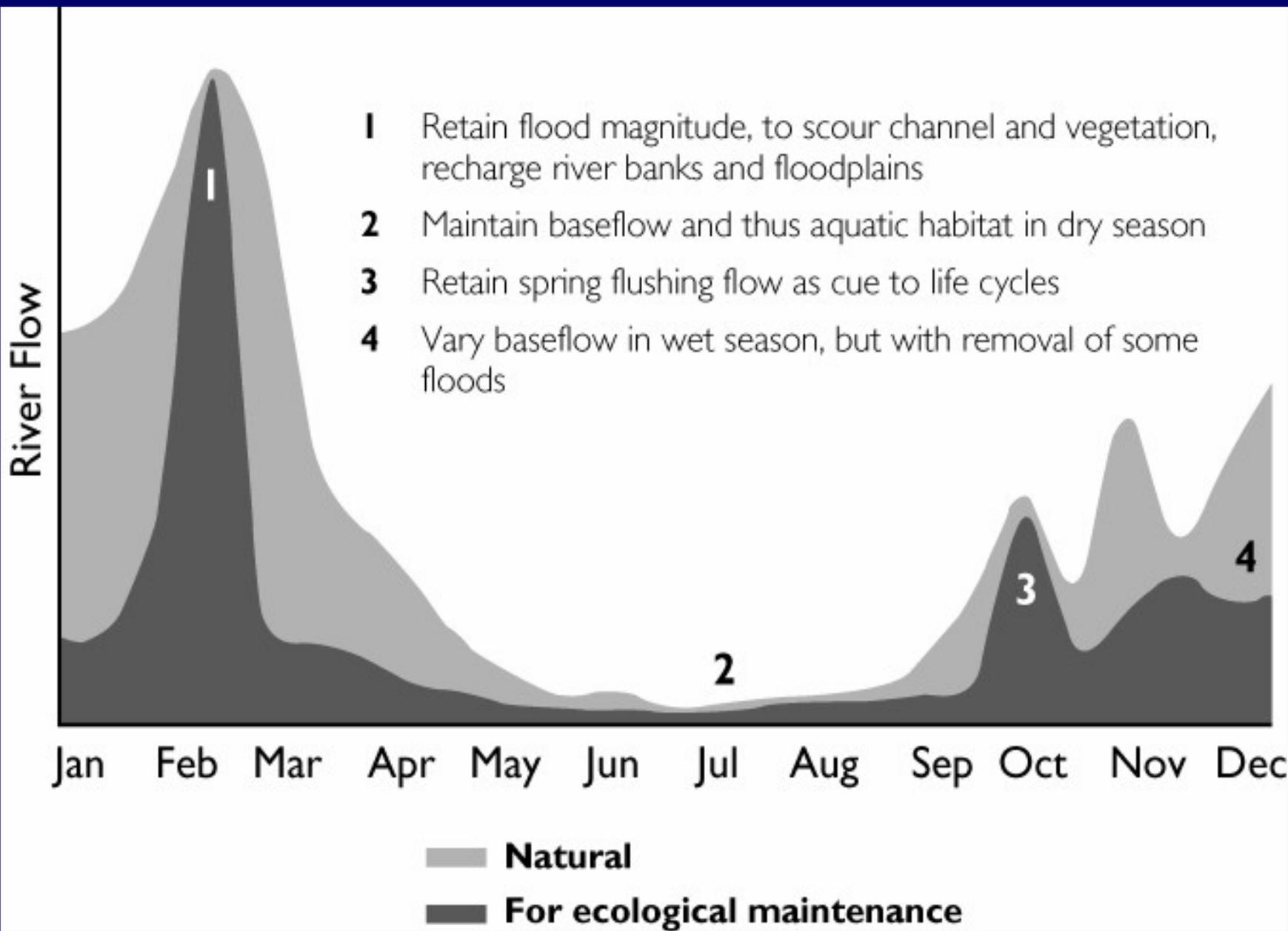
A Sustainable Approach to Water Management



E = ecosystem support

H = human use

From “Rivers for Life: Managing Water for People and Nature” by Sandra Postel and Brian Richter (Island Press 2003)



Actions for a different paradigm

- Identify thresholds to sustain ecosystem health and services to society.
- Evaluate the potential benefits and losses to human uses and ecosystem sustainability from development or management scenarios.
- Look to develop *win/win* management solutions for long-term sustainability. It is not one vs. the other.
- Quantify the broad economic costs and benefits to illustrate the financial underpinnings of ecosystem management and development decisions.

Actions for a different paradigm

- Create natural resource management and development plans that sustain natural ecosystem patterns and processes, and services to society. *They are a lot cheaper to maintain than to restore.*
- Create a truly *integrated* river and lake basin management and development approach by creating and reviewing plans with other agencies and stakeholders to advance sustainable economic and ecosystem futures.

