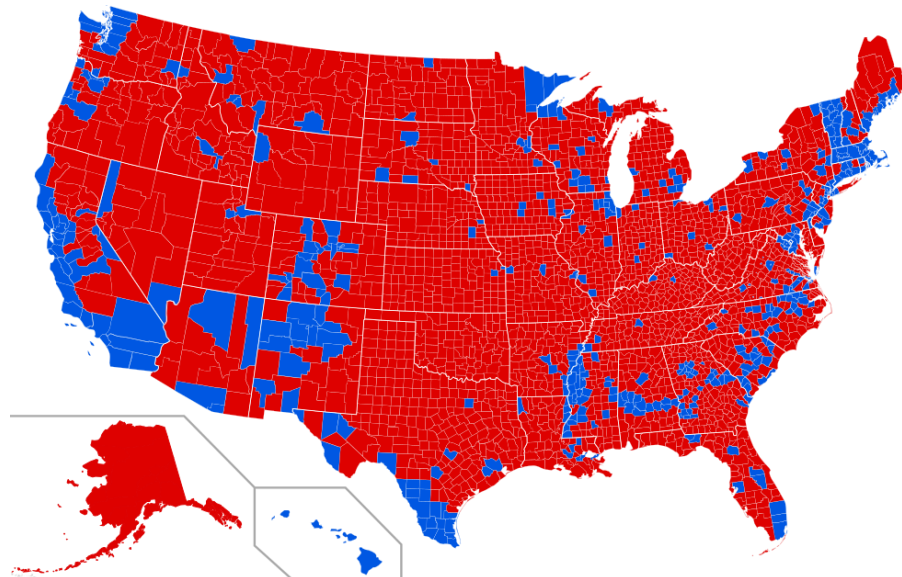
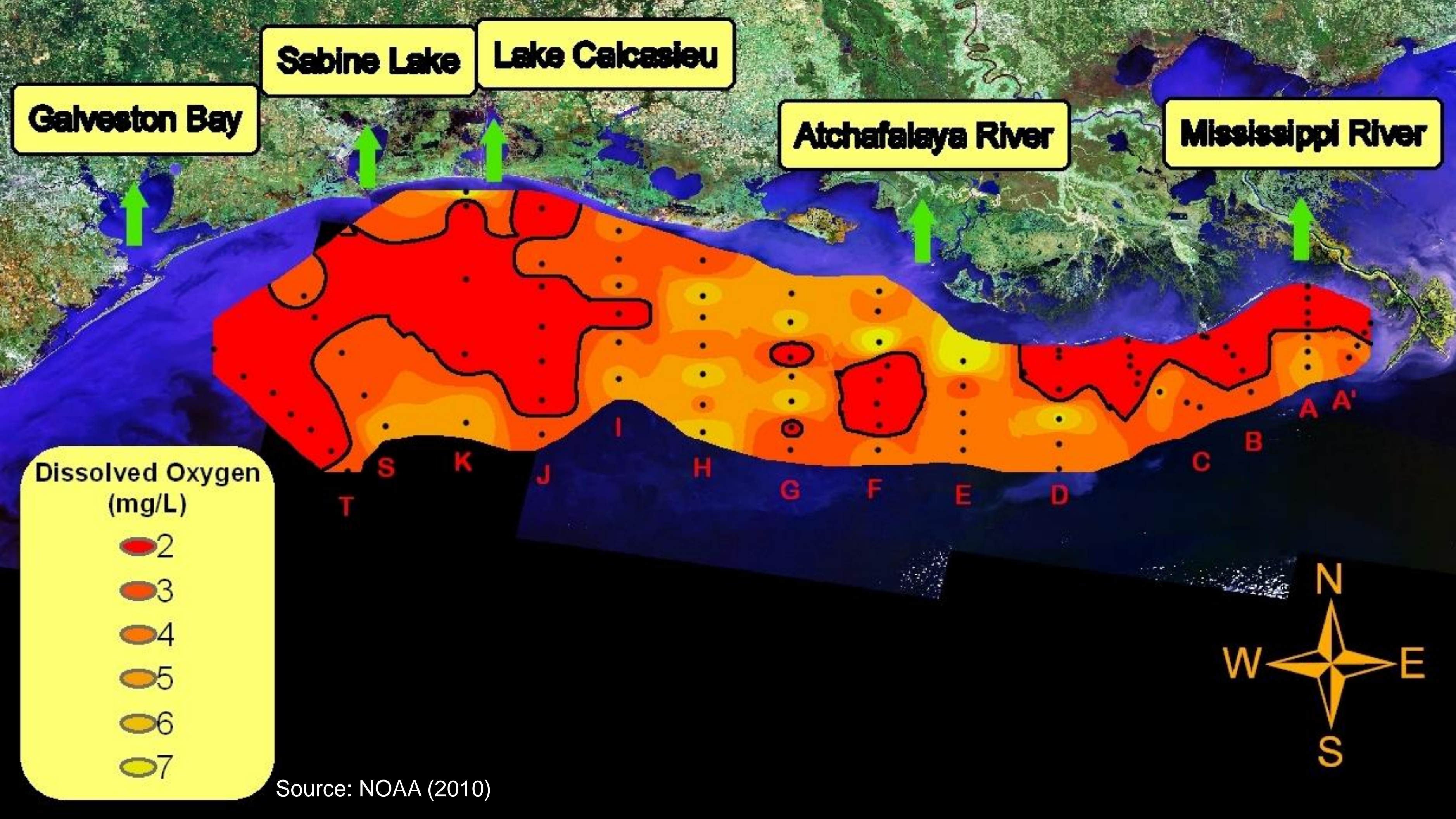


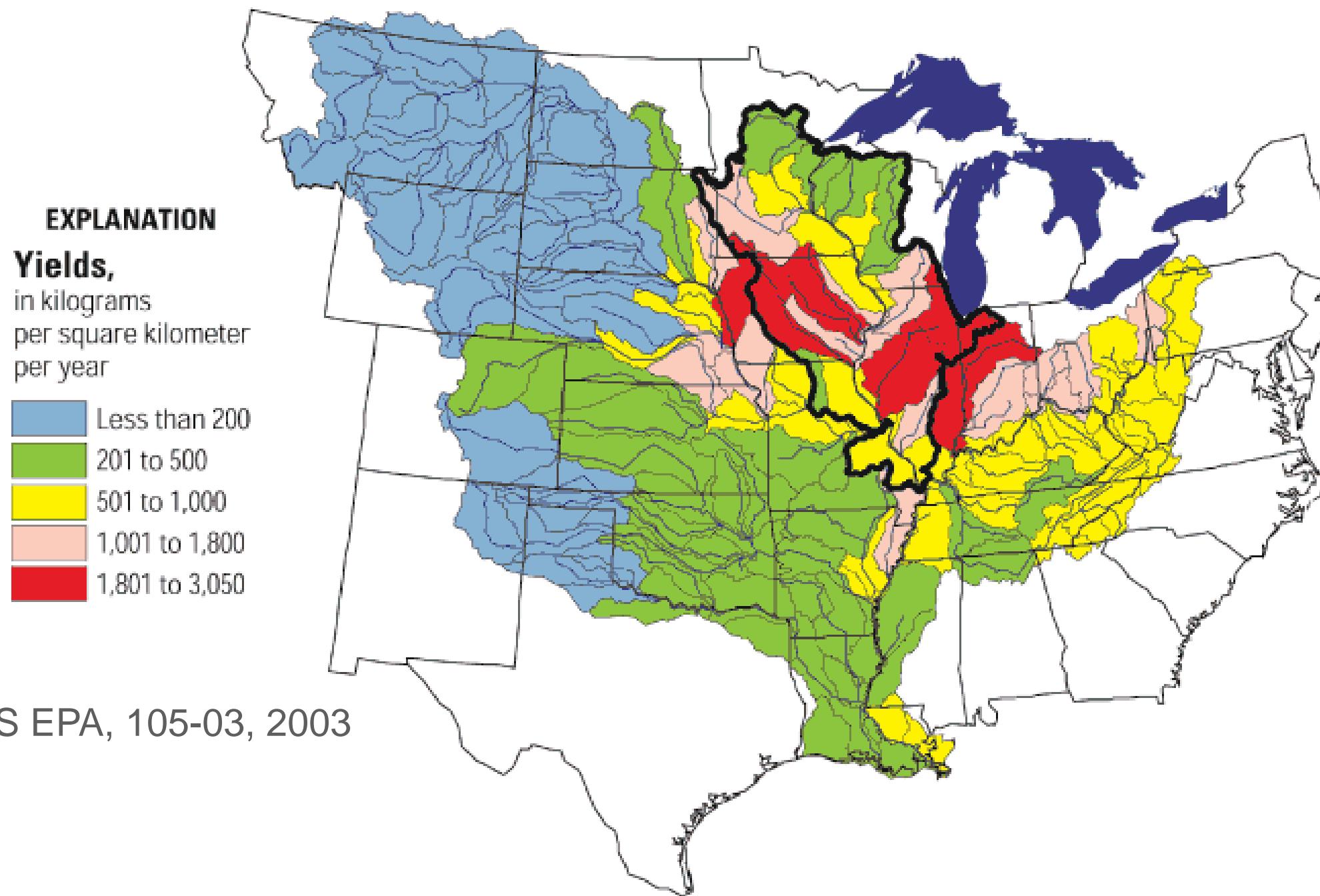
Nutrient Pollution and the Broadening Urban-Rural Political Divide

Michael Tiboris

Fellow, The Chicago Council on Global Affairs








US EPA, 105-03, 2003

State	Nutrient Reduction Strategy?	Numeric Criteria (P)	Numeric Criteria (N)
MN	2008	X 2013	
WI	2007	X 2014	
IA	2006		
IL	2006	Partial 2016	
IN	2008	Partial 2015	
OH	2006		

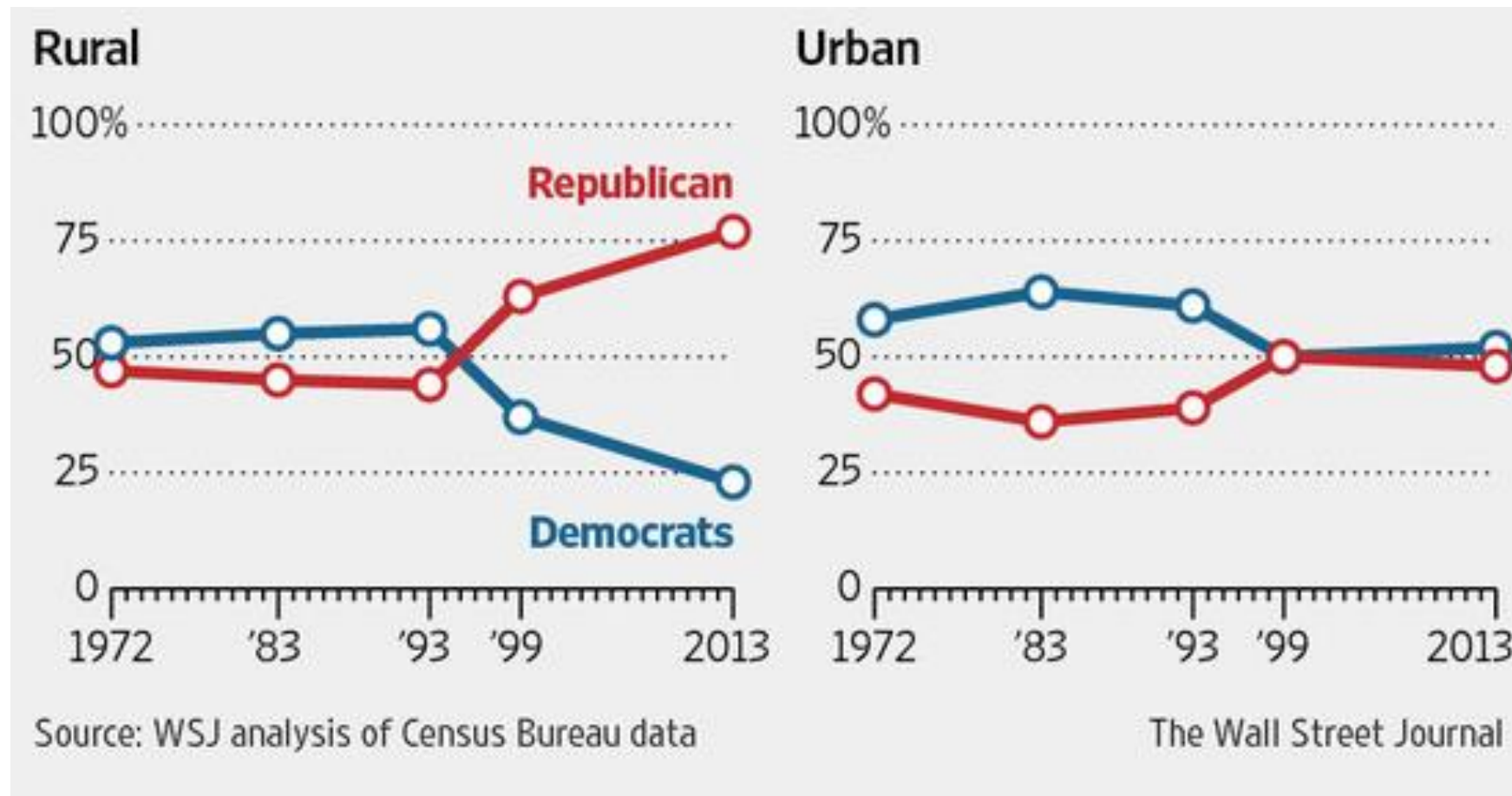
Source: US EPA, 2018

- 
- Nutrient Pollution as a Political Problem
 - The Hydrosocial Geography of Nutrient Flows
 - Urban-Rural Politics and Social Responsibility
 - Transboundary Water Governance and Conflict
 - De-Politicization and Pluralism in Nutrient Policy



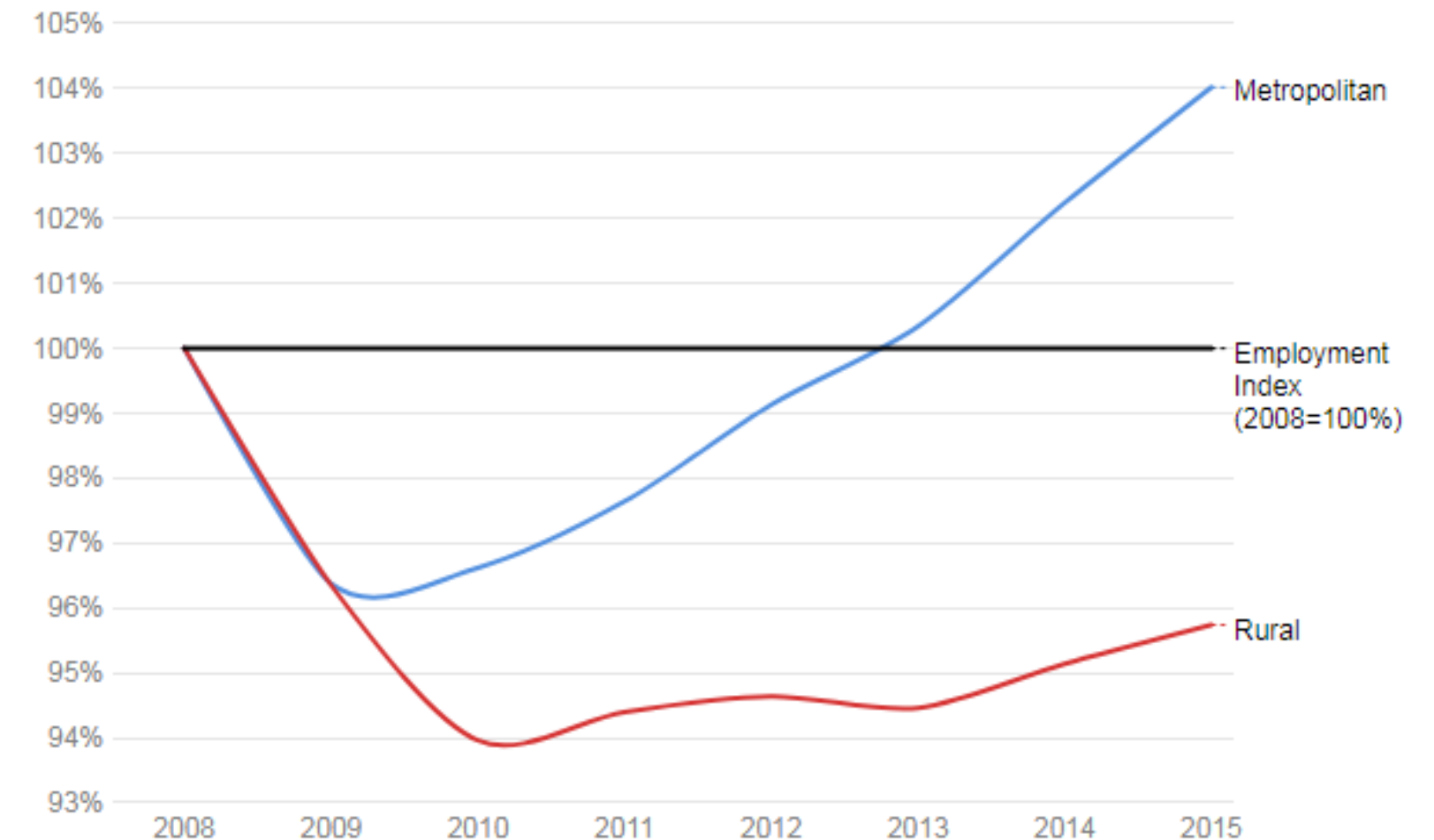
Why is this a specifically political problem?

The Broadening Urban-Rural Political Divide



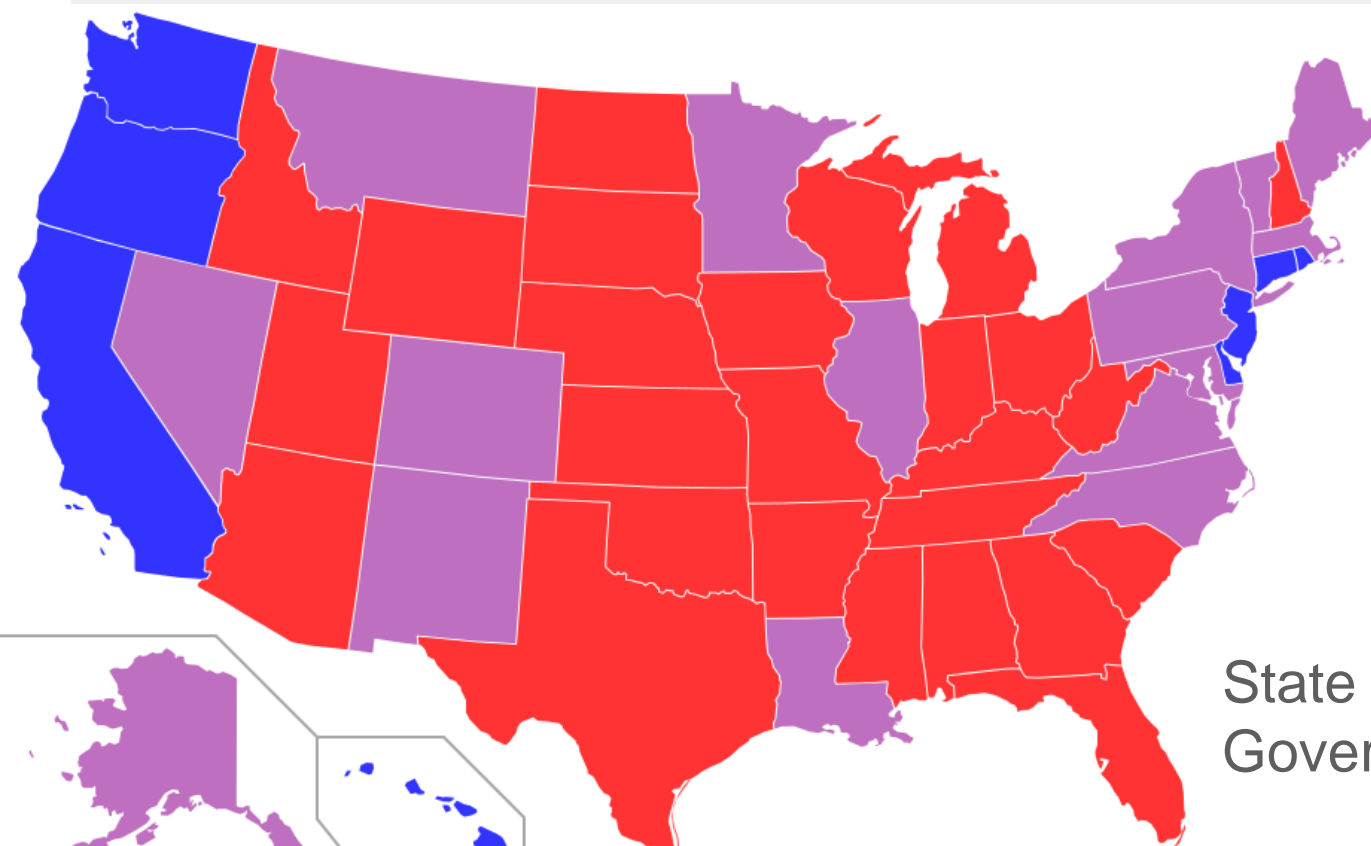
Job growth in America

Since 2008, job growth in metropolitan areas has outpaced that in rural areas.



The Conversation, CC-BY-ND

Source: [Integrated Public Use Microdata Series: Version 6.0, 2008-2015 ACS](#). [Get the data](#)



State Party Trifectas (Senate, House, and Governor of the same party)

Hydrosocial Geography of Nutrient Flows

Geography of the Nutrient Flow

Close

Distant

Tight Hydrosocial Loop, Cooperative

Politically continuous urban/rural spaces, or clear co-identification of shared interests

- Madison, Green Bay
- Intra-state Indiana

Diffuse Hydrosocial Interactions, Semi-Cooperative

More politically cohesive with less clear directionality of nutrient flow.

- Minnesota
- Southern Wisconsin

Tight Hydrosocial Loop, Conflictive

Politically divided geography, not inclined to co-management

- Toledo
- Des Moines

Open Systems, Low Cooperation

Very little contact between source and terminus.

- Illinois
- Indiana

Social/Political Proximity

Close

Distant

Hydrosocial Geography of Nutrient Flows

Geography of the Nutrient Flow

Close

Distant

Tight Hydrosocial Loop, Cooperative

Politically continuous urban/rural spaces, or clear co-identification of shared interests

- Madison, Green Bay
- Intra-state Indiana

Diffuse Hydrosocial Interactions, Semi-Cooperative

More politically cohesive with less clear directionality of nutrient flow.

- Minnesota
- Southern Wisconsin

Tight Hydrosocial Loop, Conflictive

Politically divided geography, not inclined to co-management

- Toledo
- Des Moines

Open Systems, Low Cooperation

Very little contact between source and terminus.

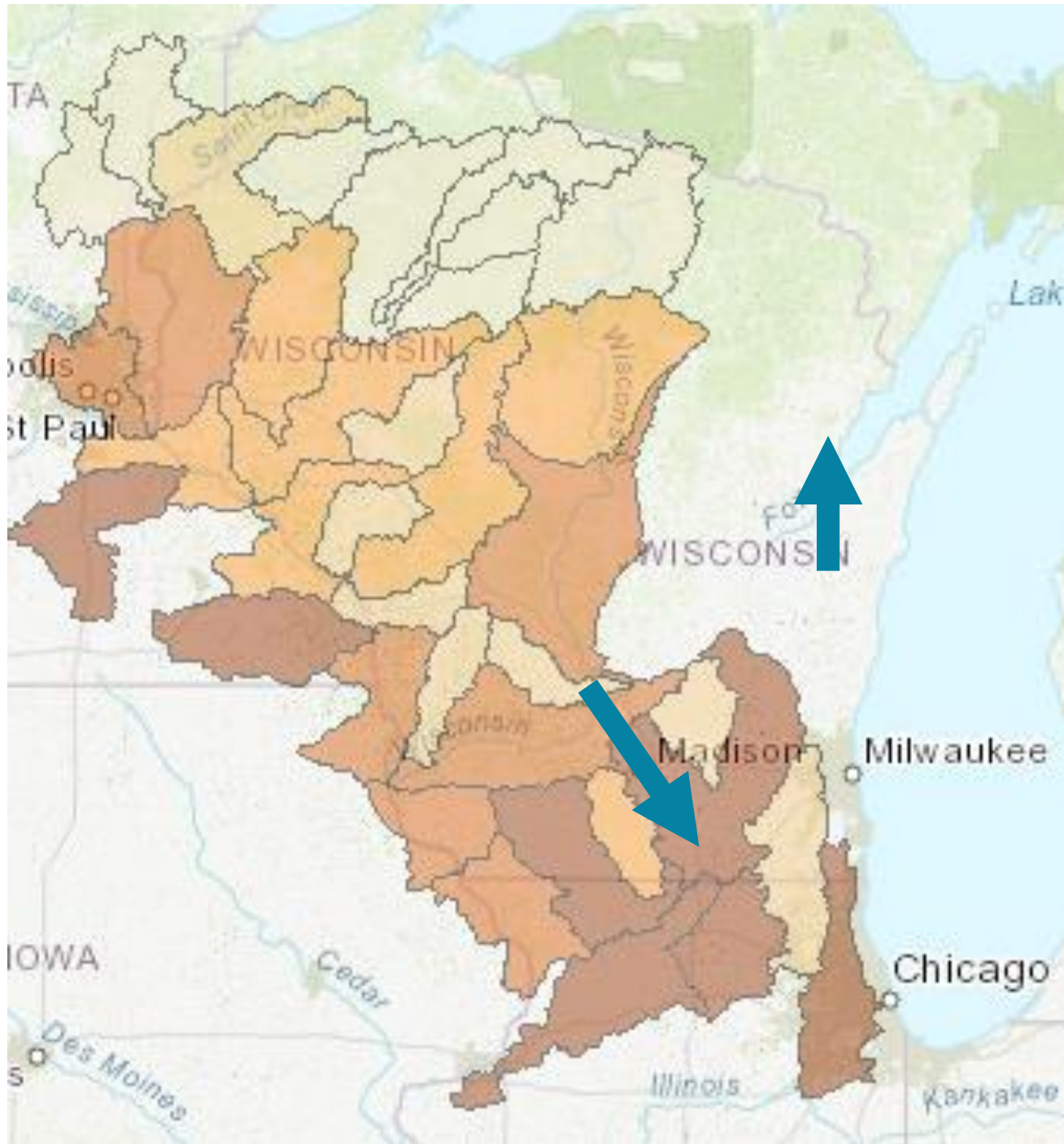
- Illinois
- Indiana

Social/Political Proximity

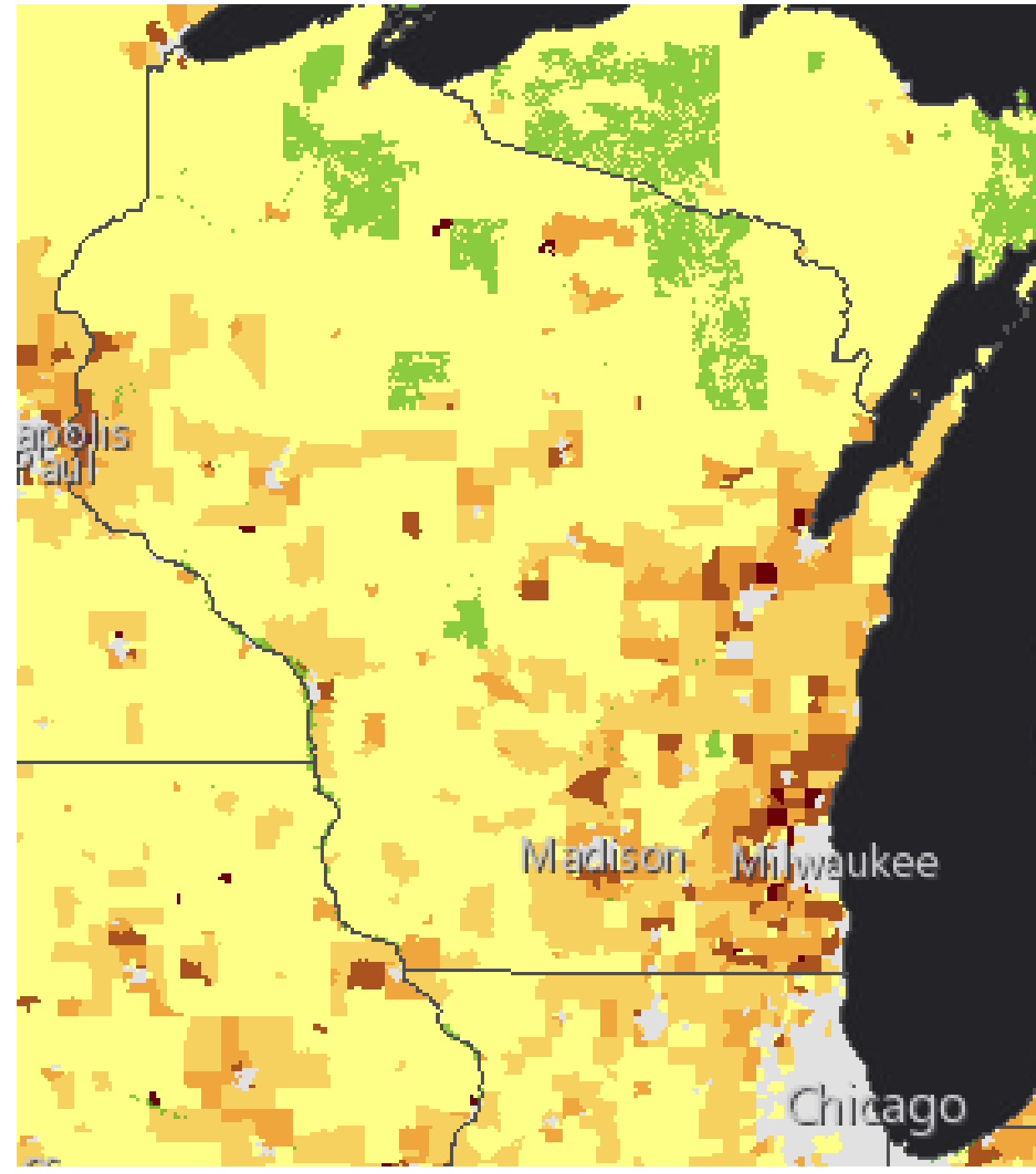
Close

Distant

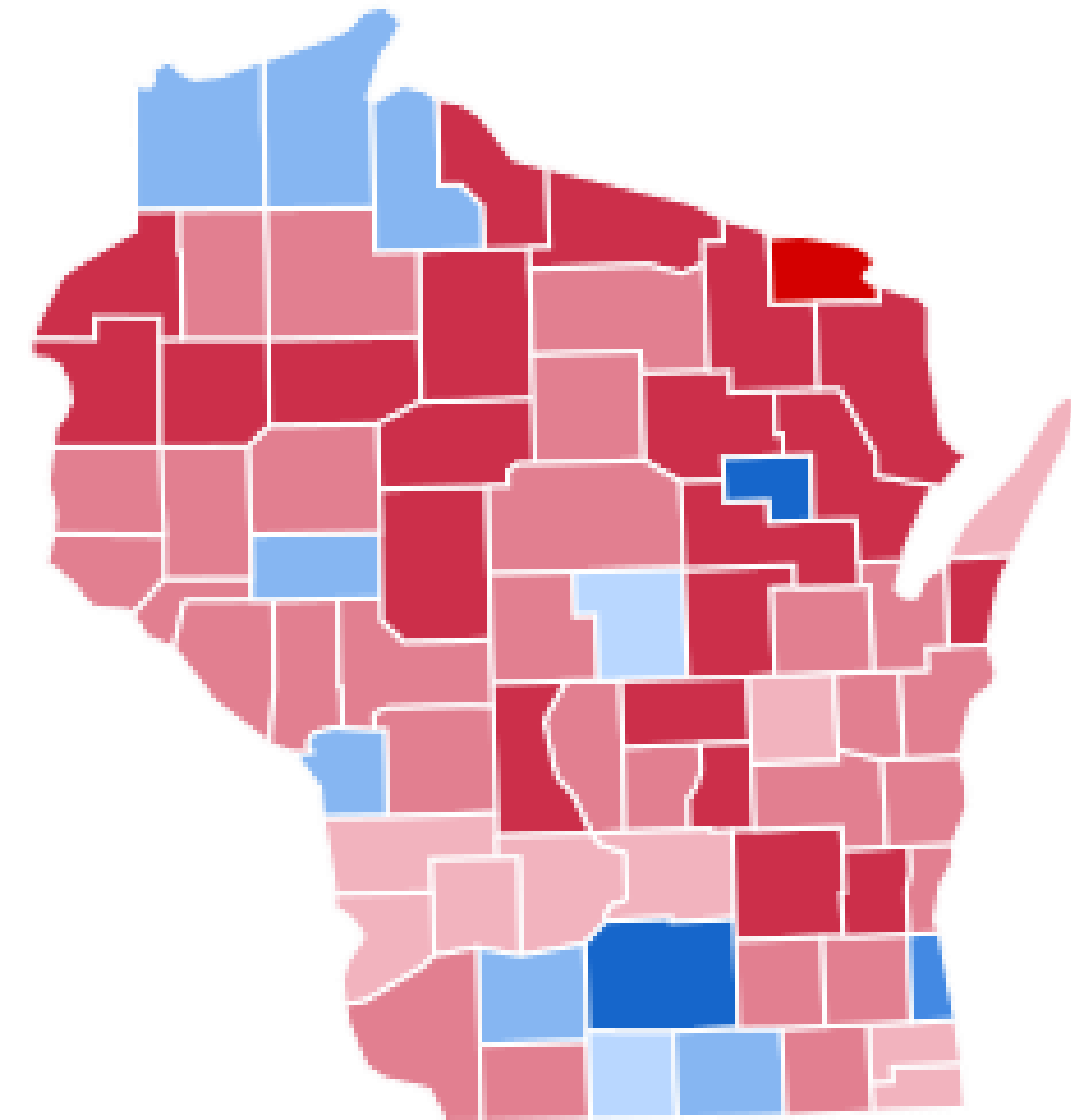
Tight Hydrosocial Loop, Cooperative



Delivered Accumulated Load (N) by HUC8, USGS SPARROW, 2018



Density of *rural* population, US Census Bureau, 2010



2016 Presidential Election Results by County

Hydrosocial Geography of Nutrient Flows

Geography of the Nutrient Flow

Close

Distant

Tight Hydrosocial Loop, Cooperative

Politically continuous urban/rural spaces, or clear co-identification of shared interests

- Madison, Green Bay
- Intra-state Indiana

Diffuse Hydrosocial Interactions, Semi-Cooperative

More politically cohesive with less clear directionality of nutrient flow.

- Minnesota
- Southern Wisconsin

Tight Hydrosocial Loop, Conflictive

Politically divided geography, not inclined to co-management

- Toledo
- Des Moines

Open Systems, Low Cooperation

Very little contact between source and terminus.

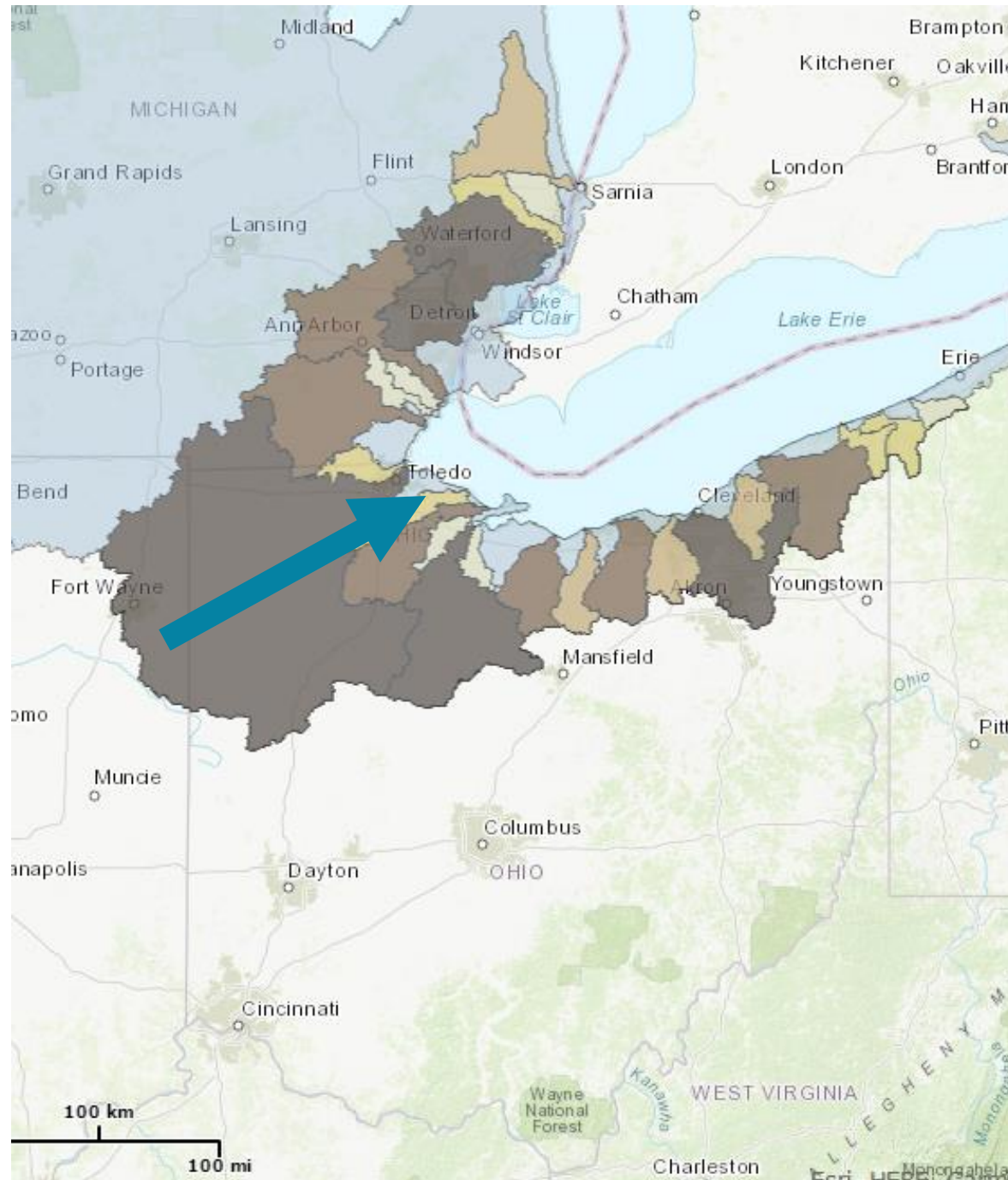
- Illinois
- Indiana

Social/Political Proximity

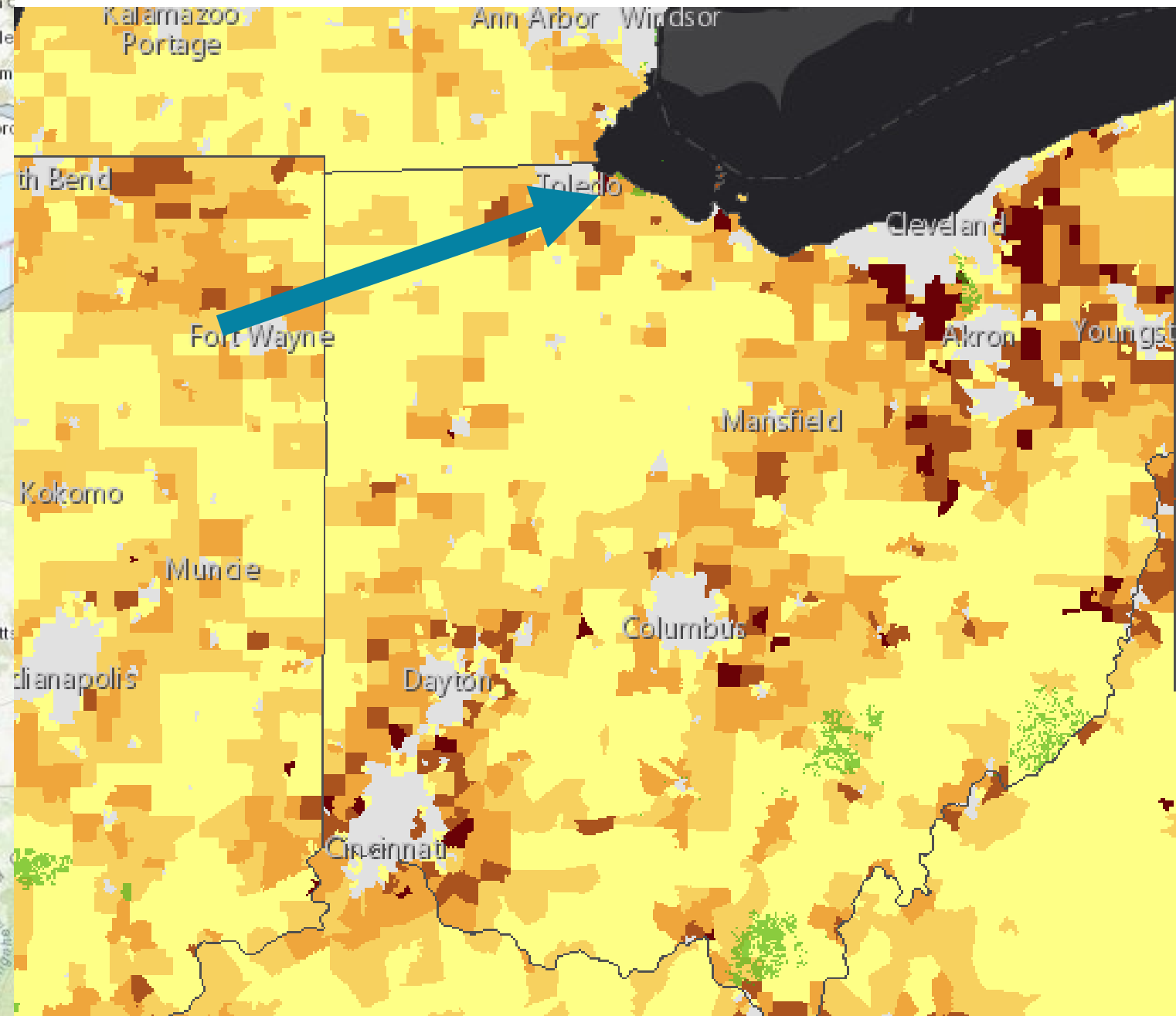
Close

Distant

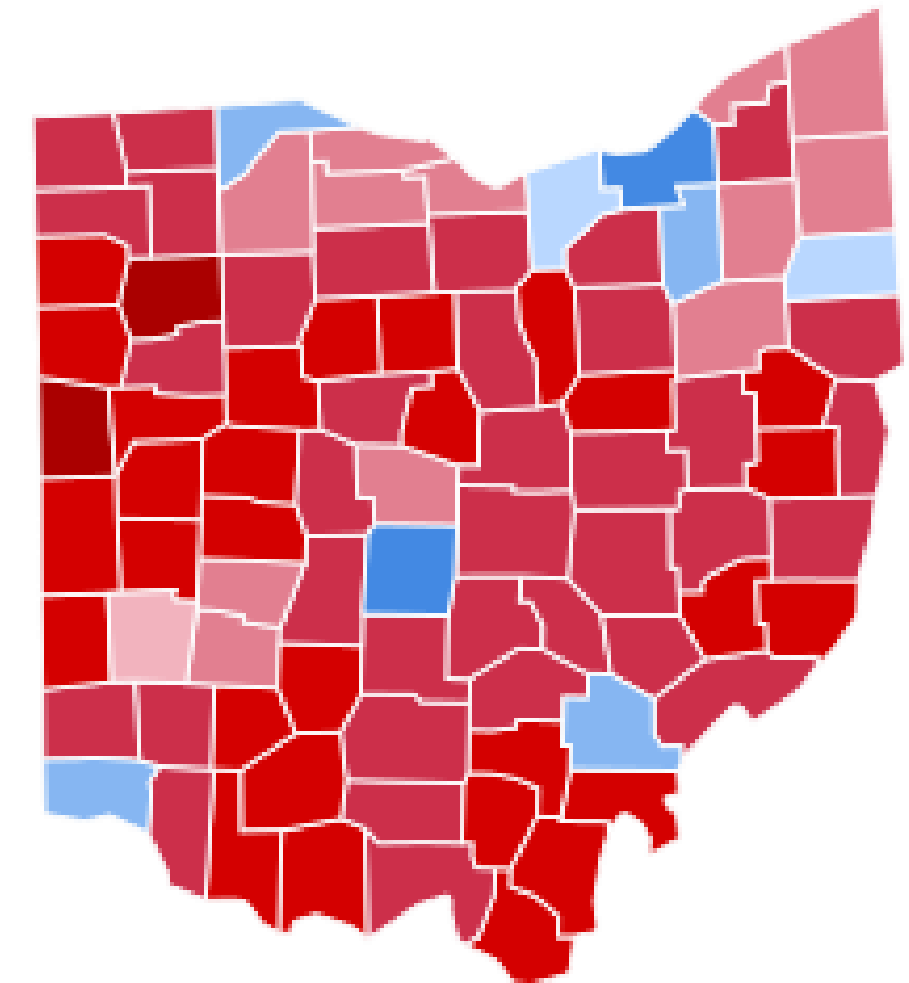
Tight Hydrosocial Loop, Conflictive



Delivered Accumulated Load (N) by HUC8, USGS SPARROW, 2018



Density of *rural* population, US Census Bureau, 2010



2016 Presidential Election Results by County

Hydrosocial Geography of Nutrient Flows

Geography of the Nutrient Flow

Close

Distant

Tight Hydrosocial Loop, Cooperative

Politically continuous urban/rural spaces, or clear co-identification of shared interests

- Madison, Green Bay
- Intra-state Indiana

Diffuse Hydrosocial Interactions, Semi-Cooperative

More politically cohesive with less clear directionality of nutrient flow.

- Minnesota
- Southern Wisconsin

Tight Hydrosocial Loop, Conflictive

Politically divided geography, not inclined to co-management

- Toledo
- Des Moines

Open Systems, Low Cooperation

Very little contact between source and terminus.

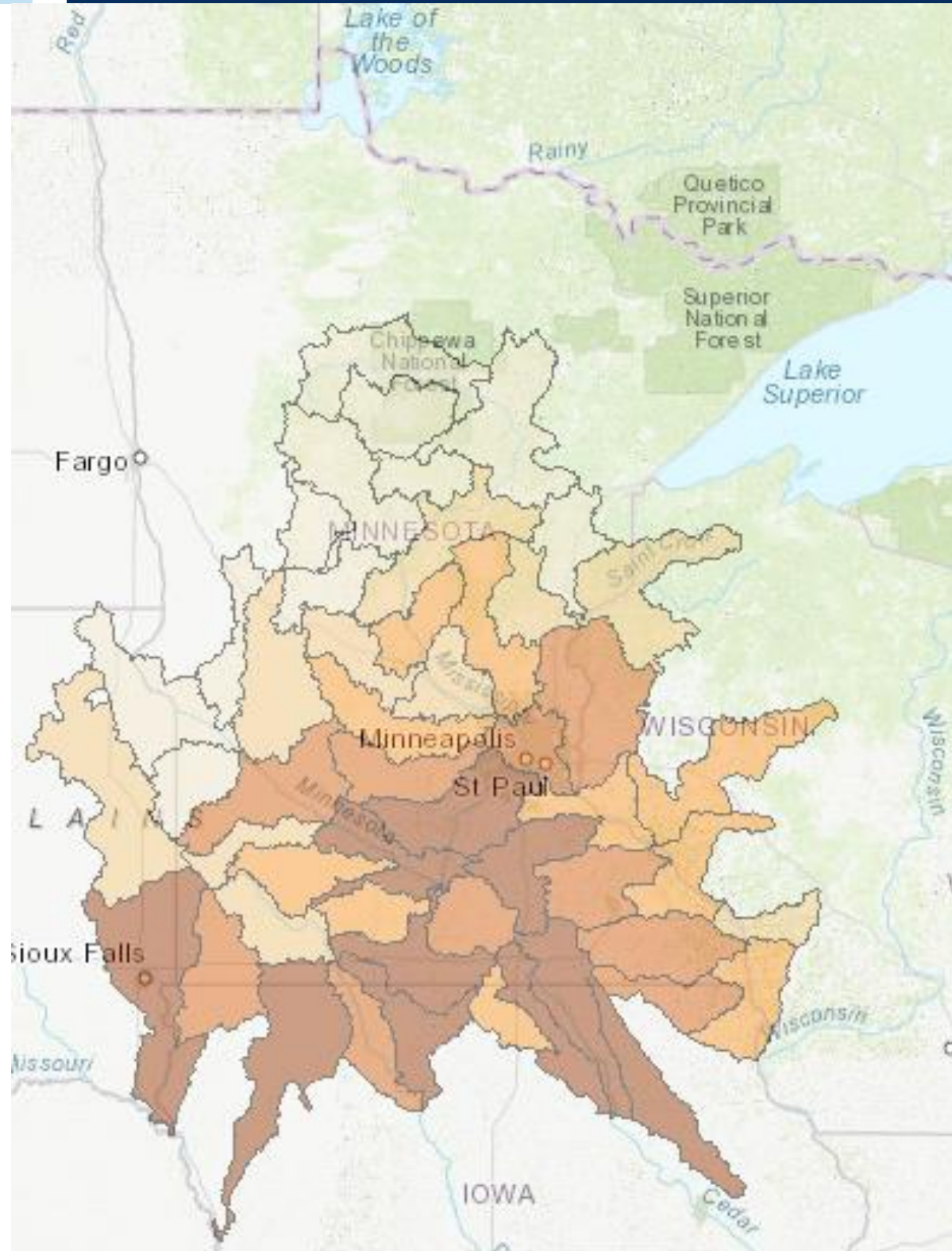
- Illinois
- Indiana

Social/Political Proximity

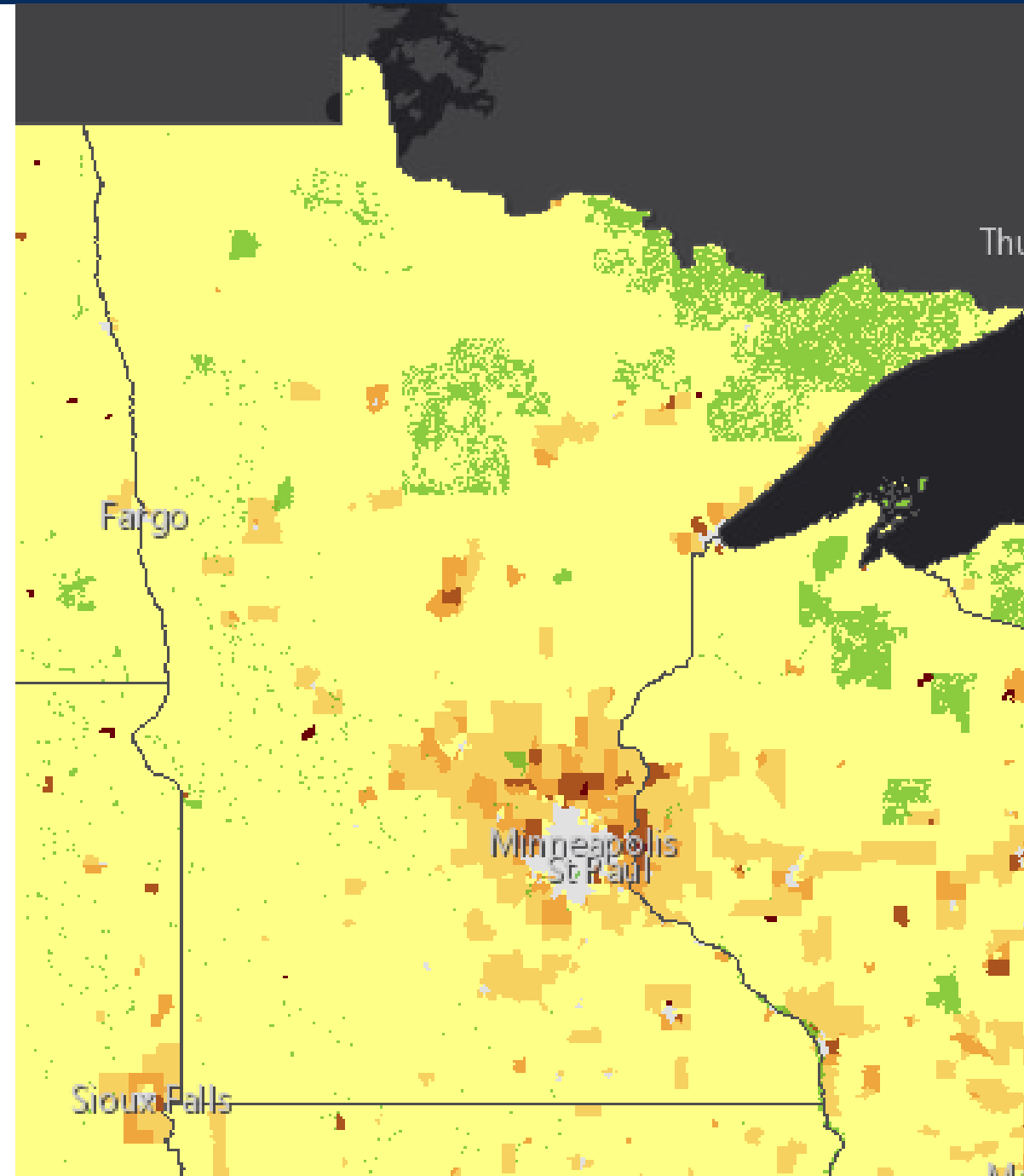
Close

Distant

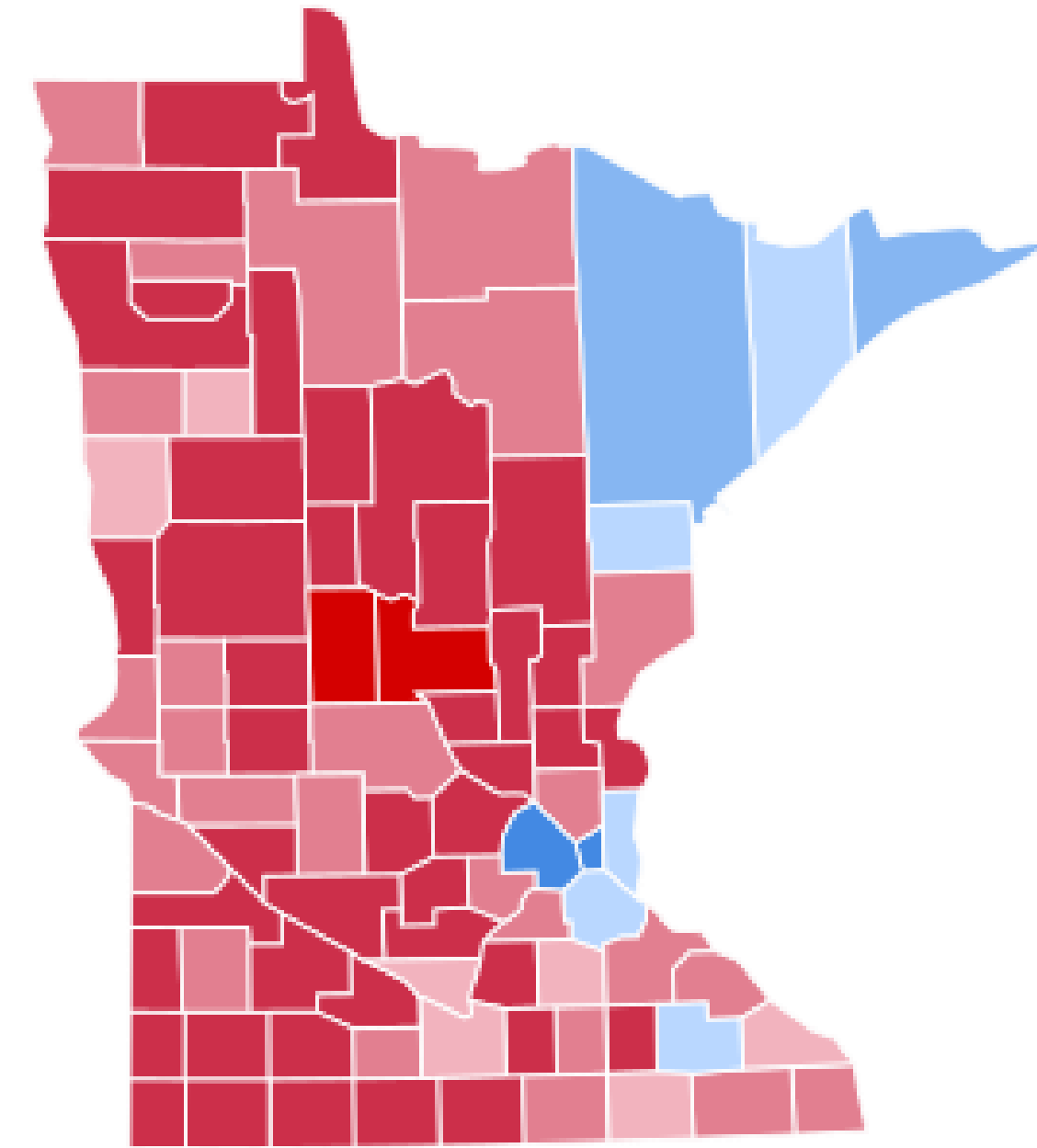
Diffuse Hydrosocial Systems



Delivered Accumulated Load (N) by HUC8, USGS SPARROW, 2018



Density of *rural* population, US Census Bureau, 2010



2016 Presidential Election Results by County

Hydrosocial Geography of Nutrient Flows

Geography of the Nutrient Flow

Close

Distant

Tight Hydrosocial Loop, Cooperative

Politically continuous urban/rural spaces, or clear co-identification of shared interests

- Madison, Green Bay
- Intra-state Indiana

Diffuse Hydrosocial Interactions, Semi-Cooperative

More politically cohesive with less clear directionality of nutrient flow.

- Minnesota
- Southern Wisconsin

Tight Hydrosocial Loop, Conflictive

Politically divided geography, not inclined to co-management

- Toledo
- Des Moines

Open Systems, Low Cooperation

Very little contact between source and terminus.

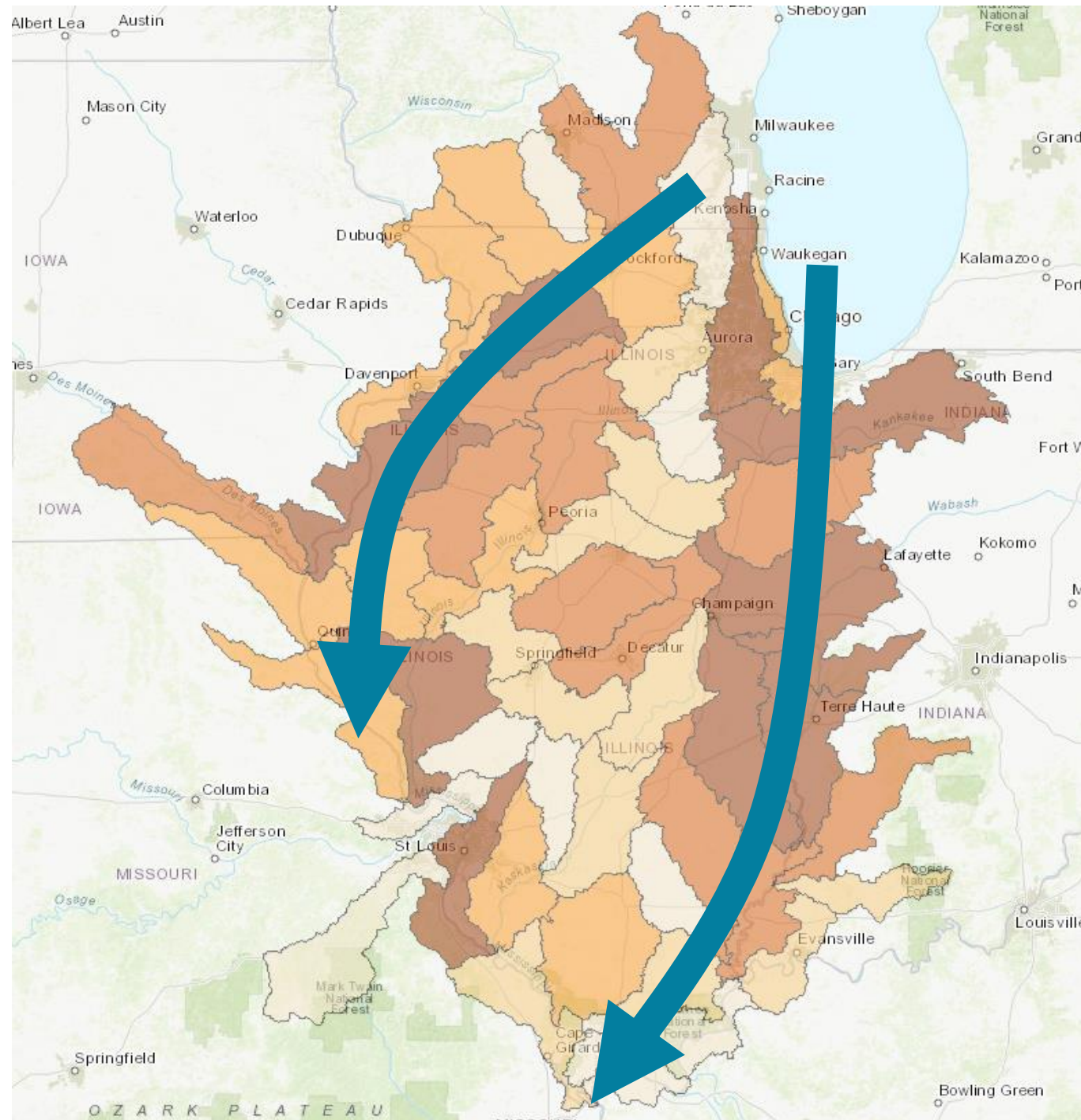
- Illinois
- Indiana

Social/Political Proximity

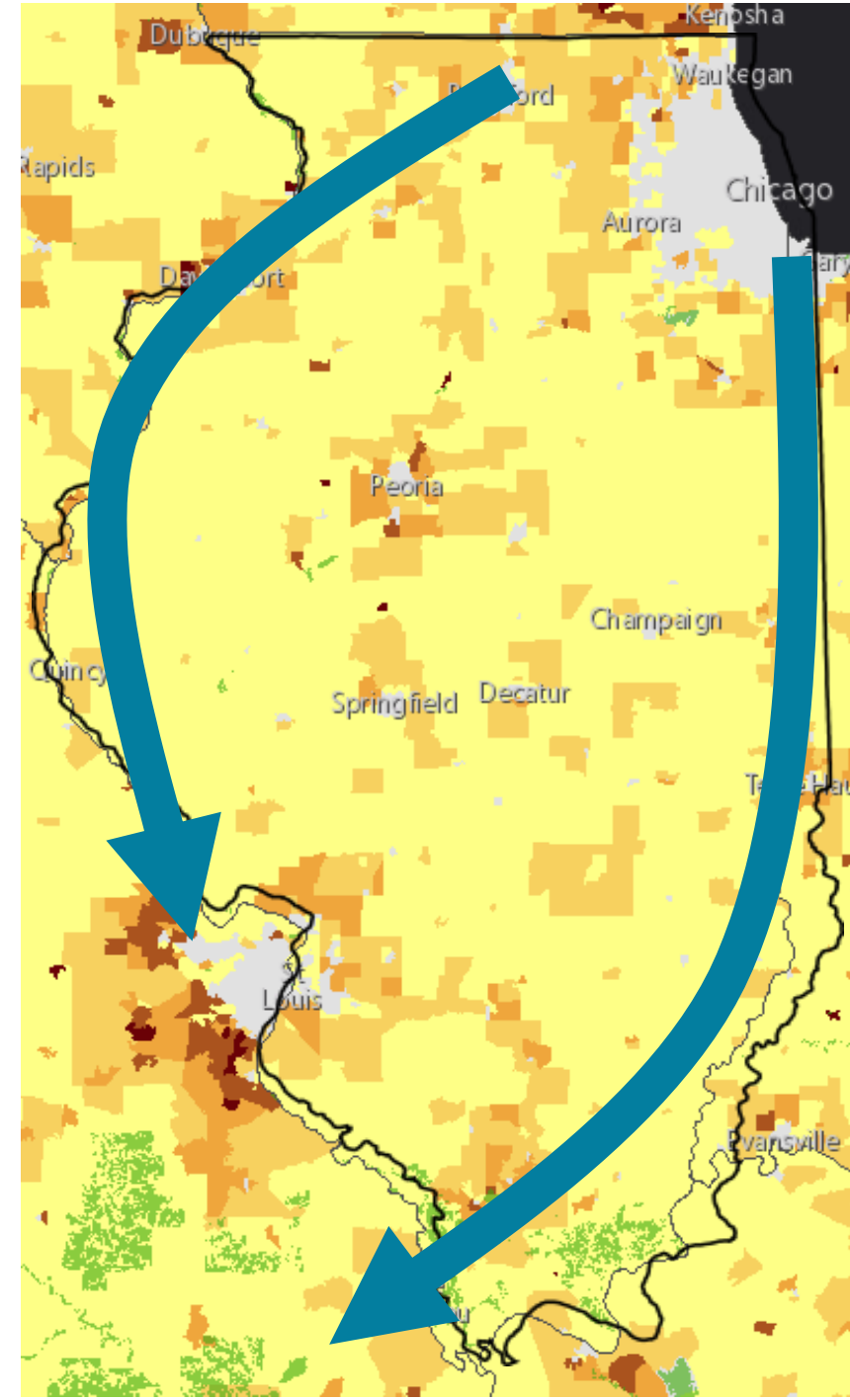
Close

Distant

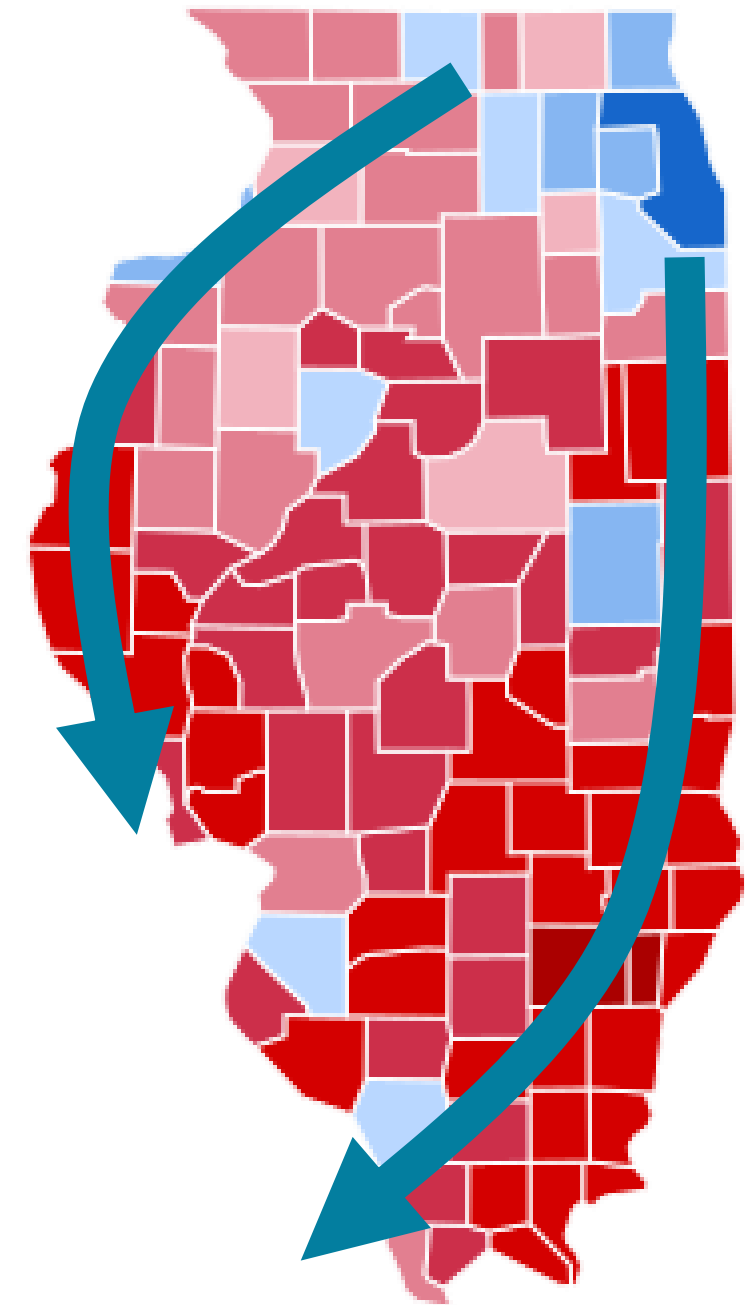
Open Systems



Delivered Accumulated Load (N) by HUC8, USGS SPARROW, 2018



Density of *rural* population, US Census Bureau, 2010



2016 Presidential Election Results by County

Competing Views of Distributional Fairness

Rural Argument

Fairness: Even if we acknowledge that nutrient pollution is a significant problem and that farm operations are the major source, it is *unfair* to argue that responsibility for mitigating it should fall exclusively on agricultural producers (even if subsidized).

Nutrient pollution controls are too expensive, top-down regulations are too demanding, and unilaterally imposed requirements de-value the contribution that farms make to the economy and urban people's basic needs.

Urban Argument

Polluter Pays: The sources of a harm ought to be responsible for correcting that harm.

Efficiency: The cost to remove nutrients on the farm is lower than the cost of removing equal amounts of nutrients at a municipal treatment plant.

Removing nutrient pollution when it gets to a city is expensive and inefficient and ultimately just spread the costs out to lots of people who are not responsible in order to maximize farm profits for a small group of people.



Transboundary Water Conflict and Governance



De-Politicization and Pluralism in Policy

- Make **tight hydrosocial loops** cooperative in ways that reduce NP.
- Harness shared ideology in **diffuse flow** places, giving more authority to the protectors of that practice.
- **Bring open systems closer** or regulate them top down, or with pressure from surrounding tighter loops as free riders.
- Overall, take the disagreement about responsibility **as the primary feature** of the exchange.



Nutrient Pollution and the Broadening Urban-Rural Political Divide

Michael Tiboris

Fellow, The Chicago Council on Global Affairs

