

Regional Water Supply Planning in Indiana

Defining Regions

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What are the questions answered by regional water supply planning?

- How much water in the basin?
 - How much groundwater, how much surface water?
 - Where and when is this available?
- How much need, where, when?
- What are the infrastructure alternatives?

What are the critical factors in delineating a water supply planning region?

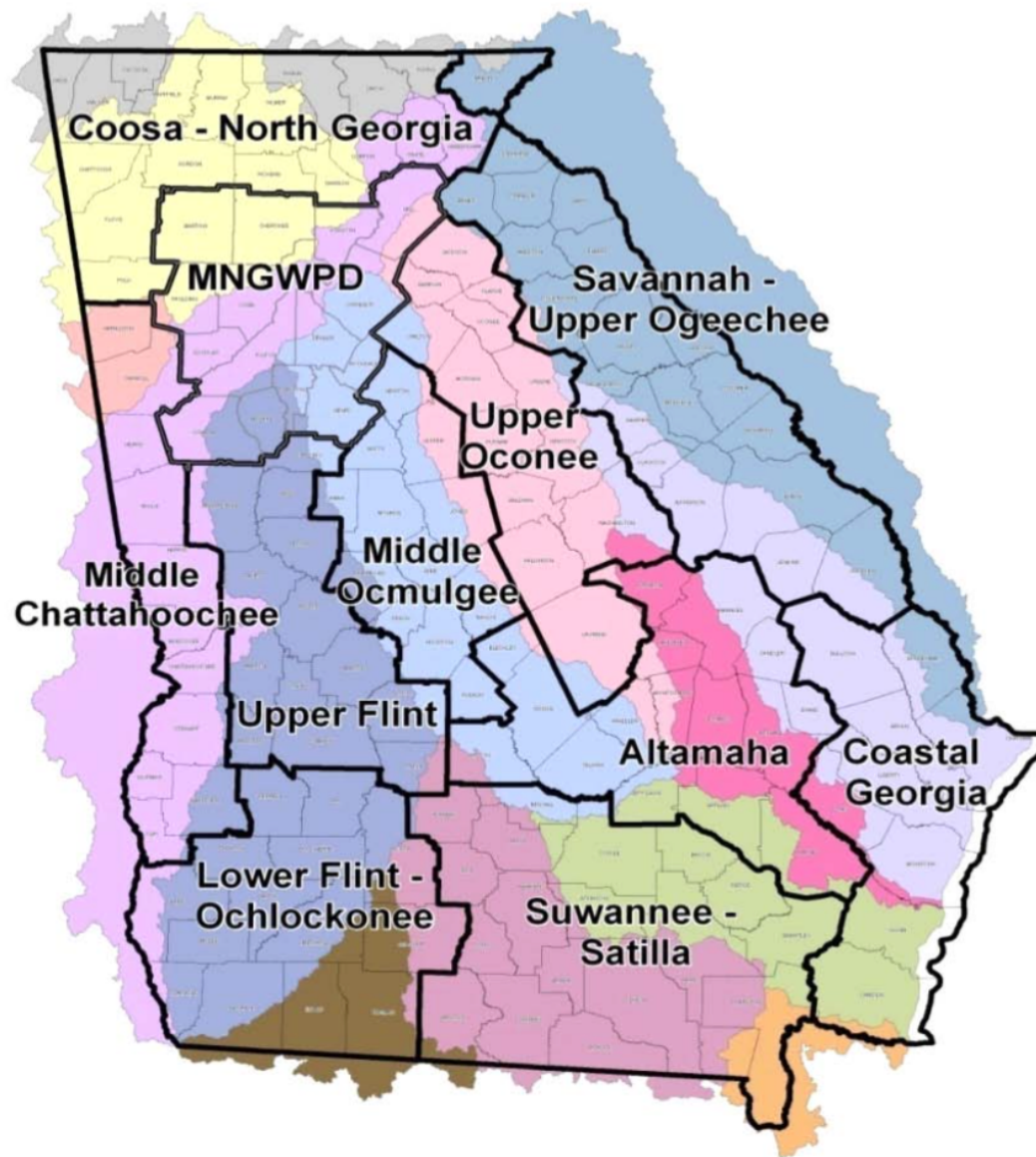
- Who are the users?
 - Are users different in surface water and groundwater?
 - How has use changed over time?
- Does other infrastructure drive changes in use?

Principals of Regional Water Supply Planning

- In riparian states *cooperation is critical to resource management.*
- A water supply planning *region* needs to *share a river or an aquifer.*
- Regions need to identify *common goals and priorities.*
- A water supply planning region needs to *share problems.*
 - *Growth in demand*
 - *Increases in seasonal peak* withdrawals
 - *Local competition for* regional supply
- Number of Regions – Avoid too many or too few plans within the the state.
- Population clusters – Municipal systems in larger towns are important but ideally, there are not too many people or too few in each region.

Georgia Planning Regions

Example #1

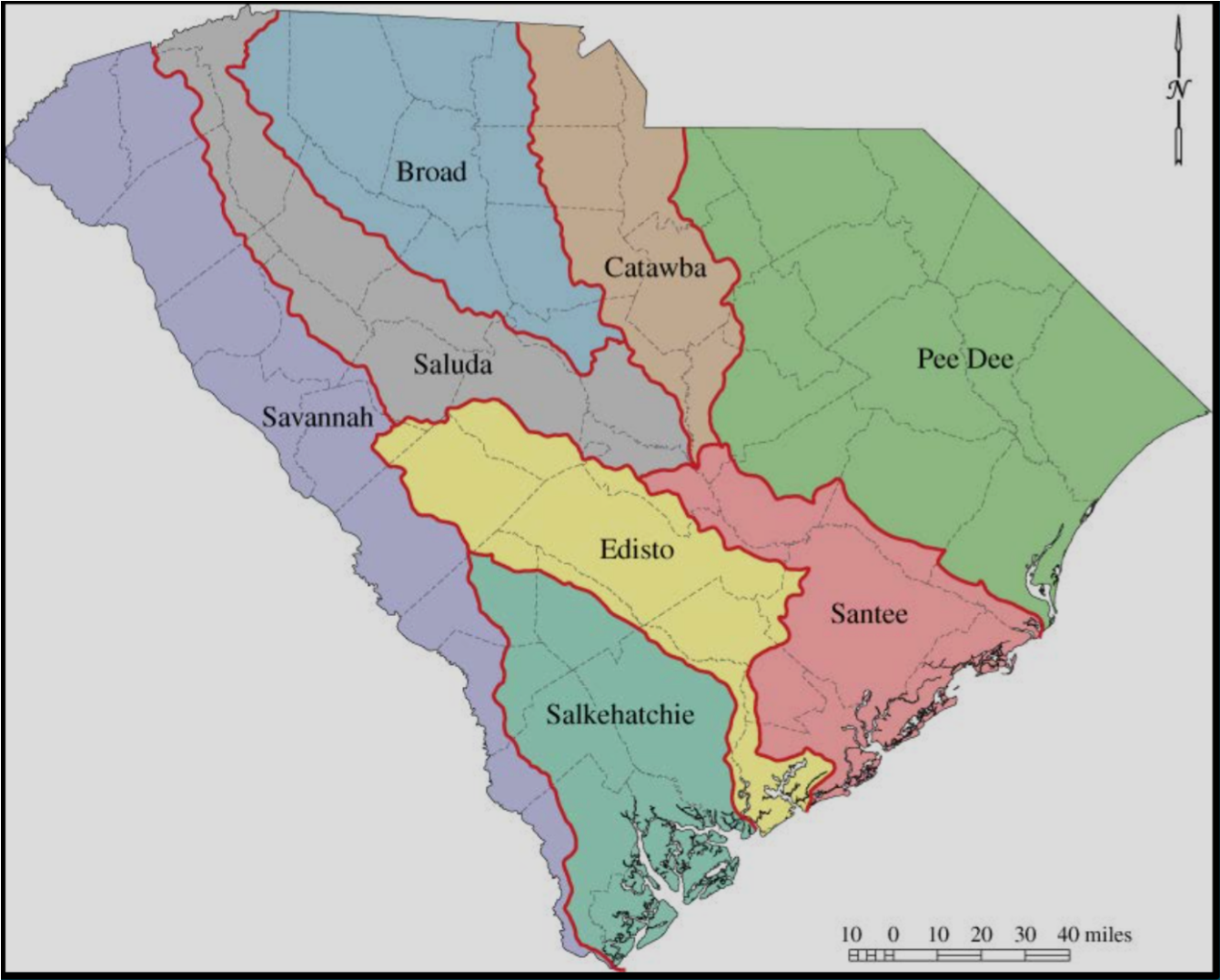


0 5 10 20 30 40 Miles

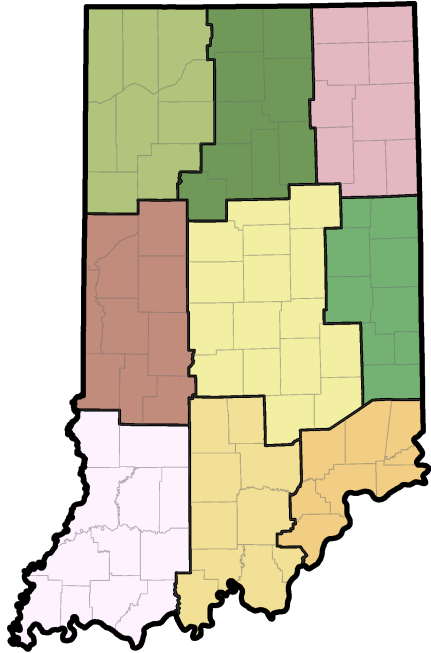


Proposed South Carolina Planning Regions

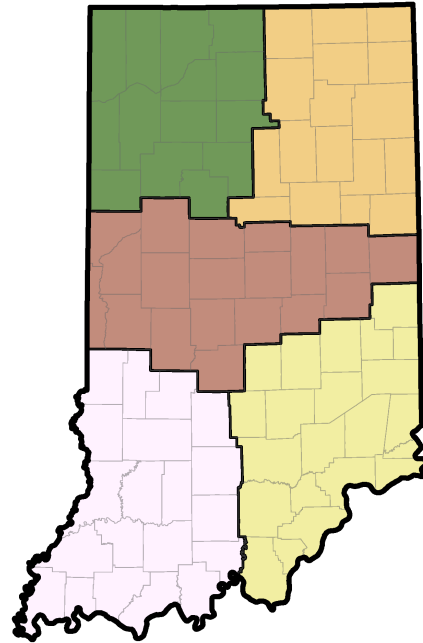
Example #2



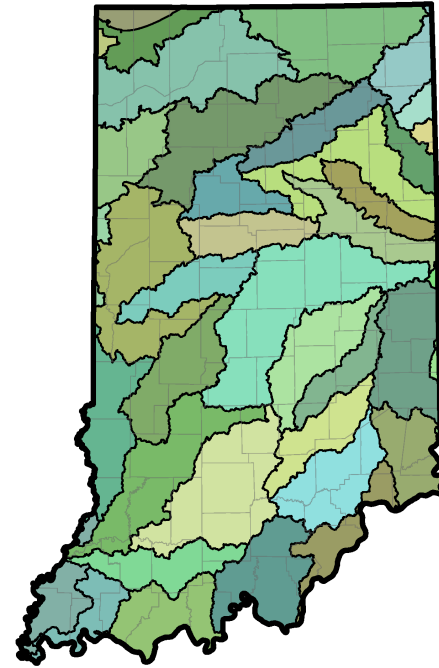
Many options for Indiana Regions



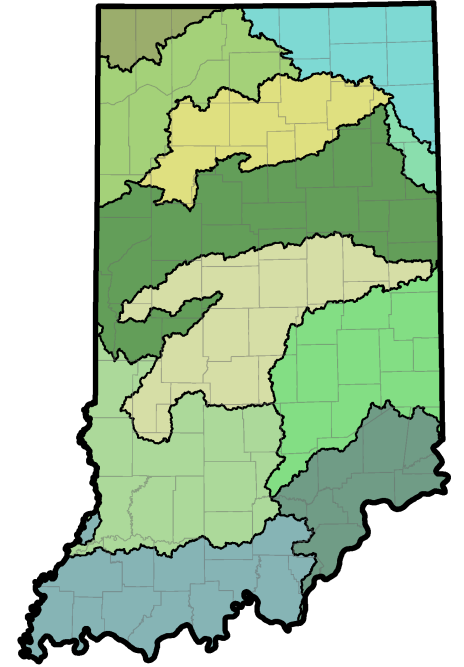
a) Climatic regions



b) Indiana AWWA districts



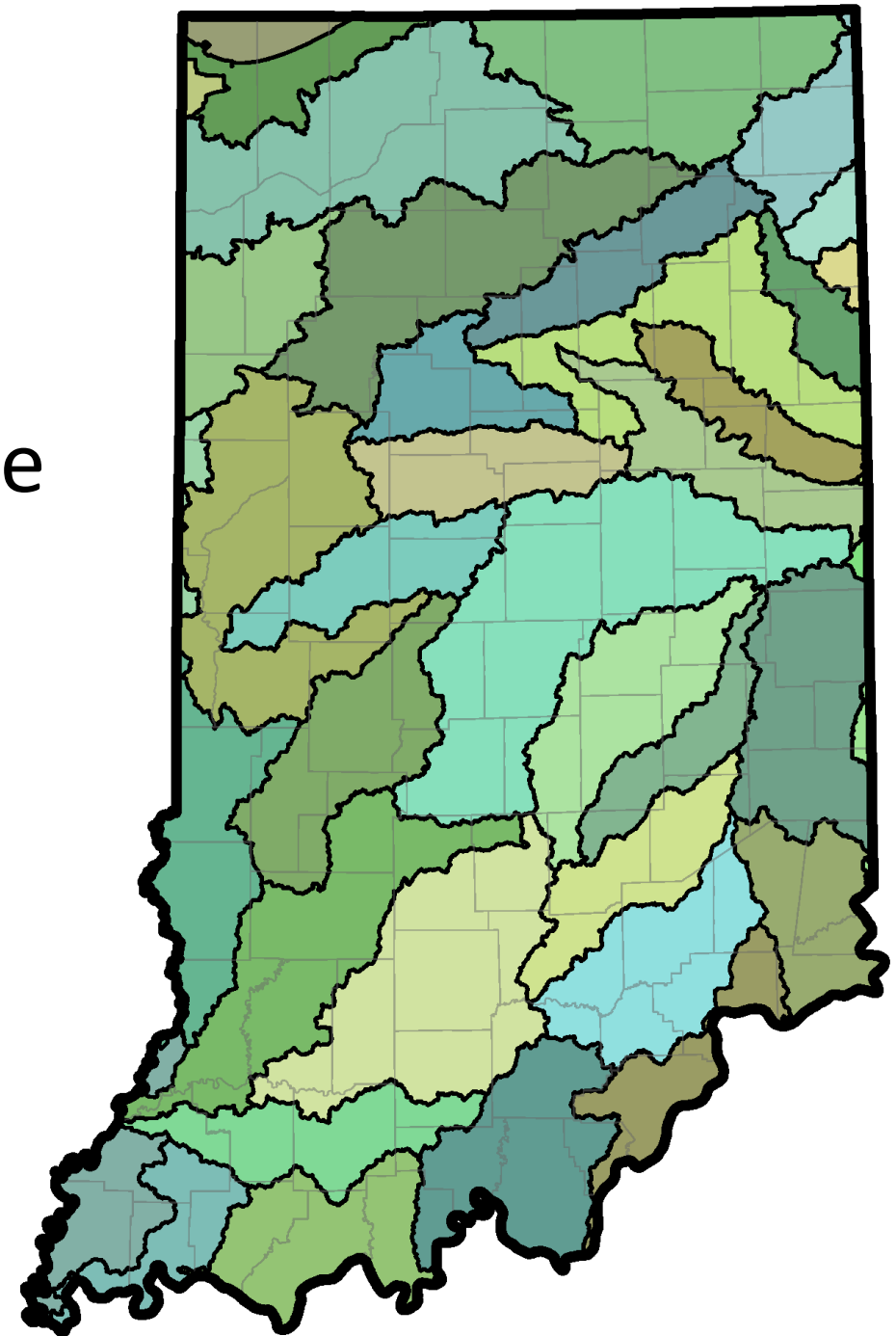
c) Watersheds



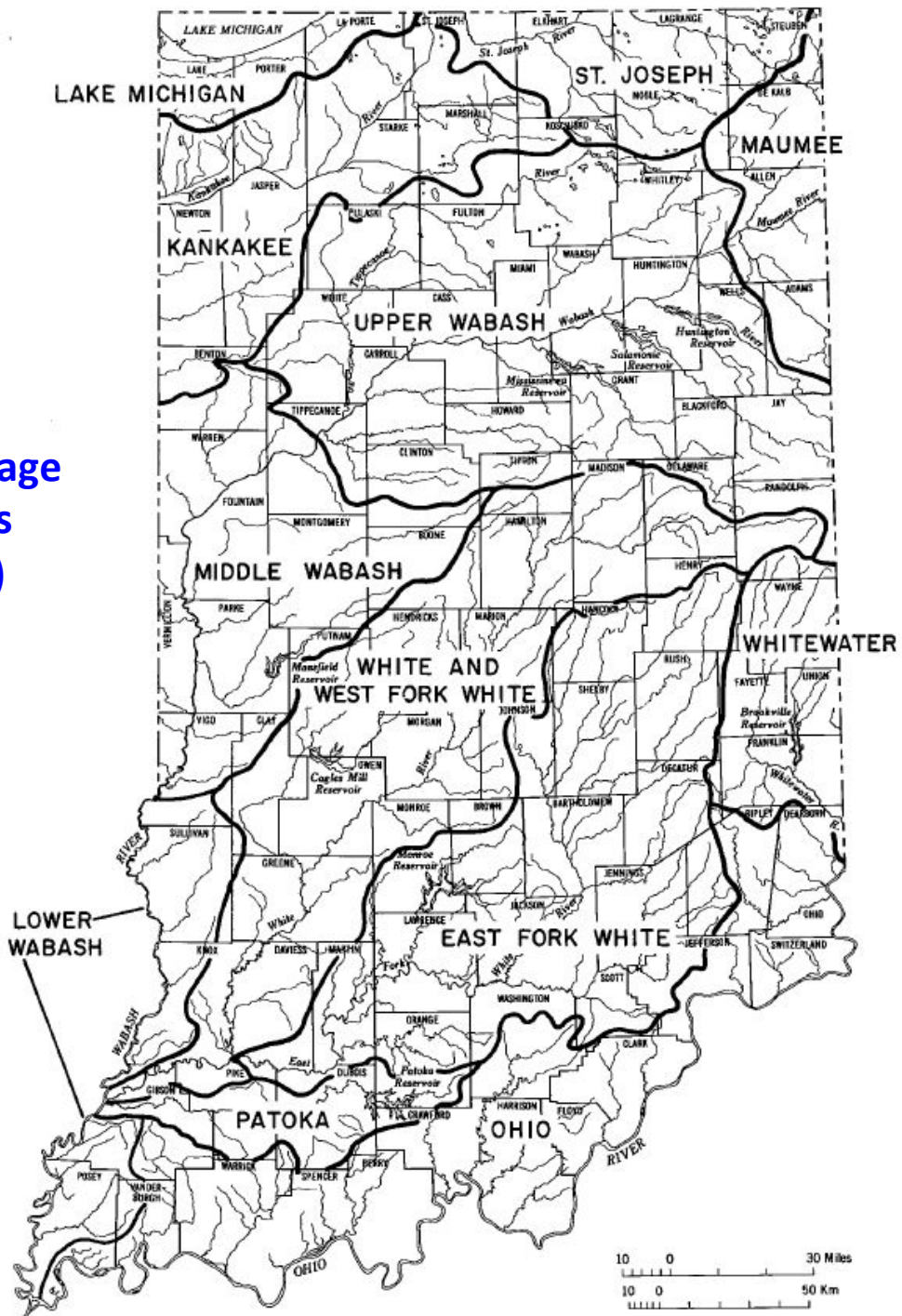
d) Combined watersheds

Watersheds scale makes hydrologic sense

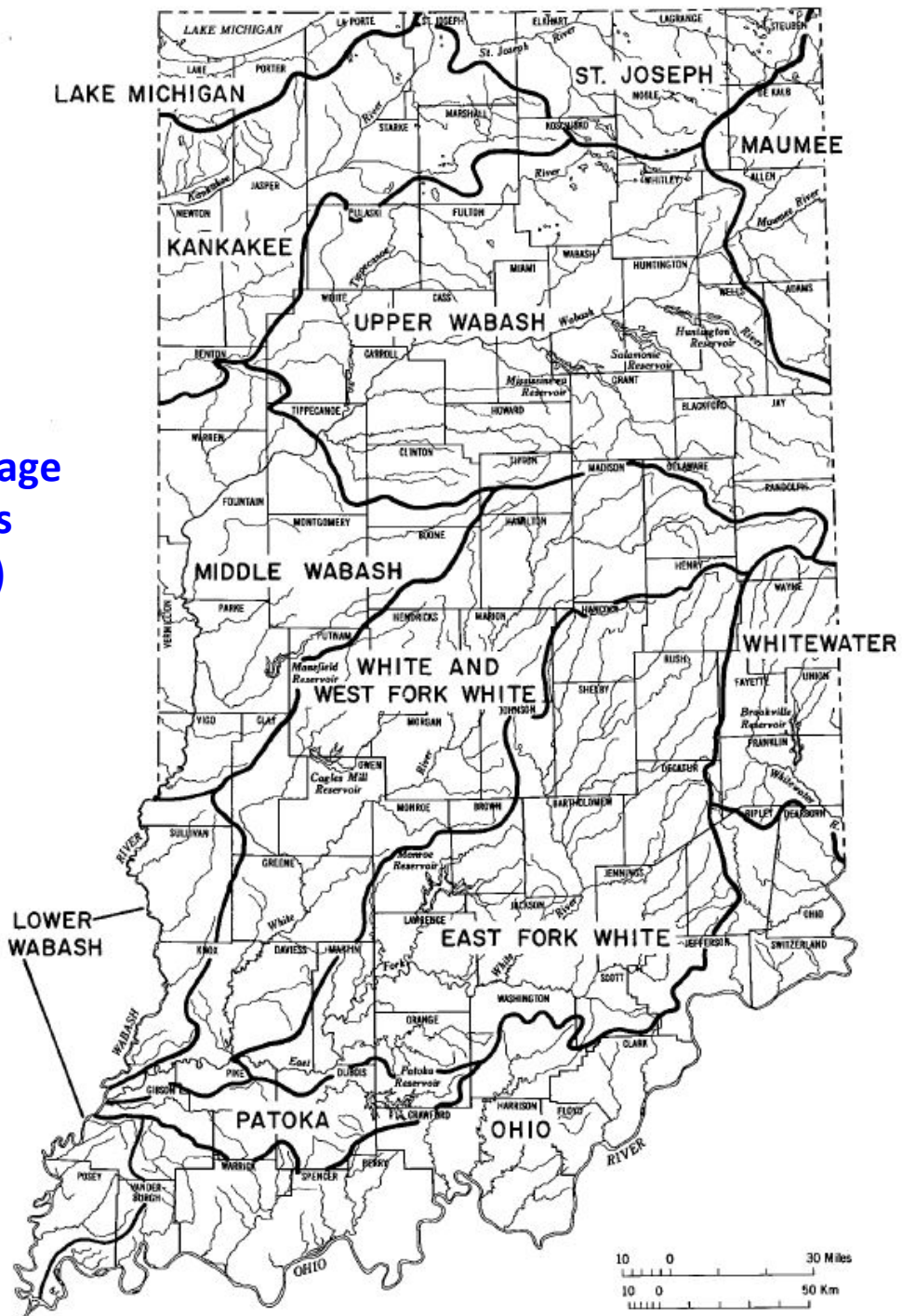
- Grouping watersheds would be practical
 - Water availability
 - Demand forecasts
- Sustainability / adequate supply evaluation
- Water shortage investigations



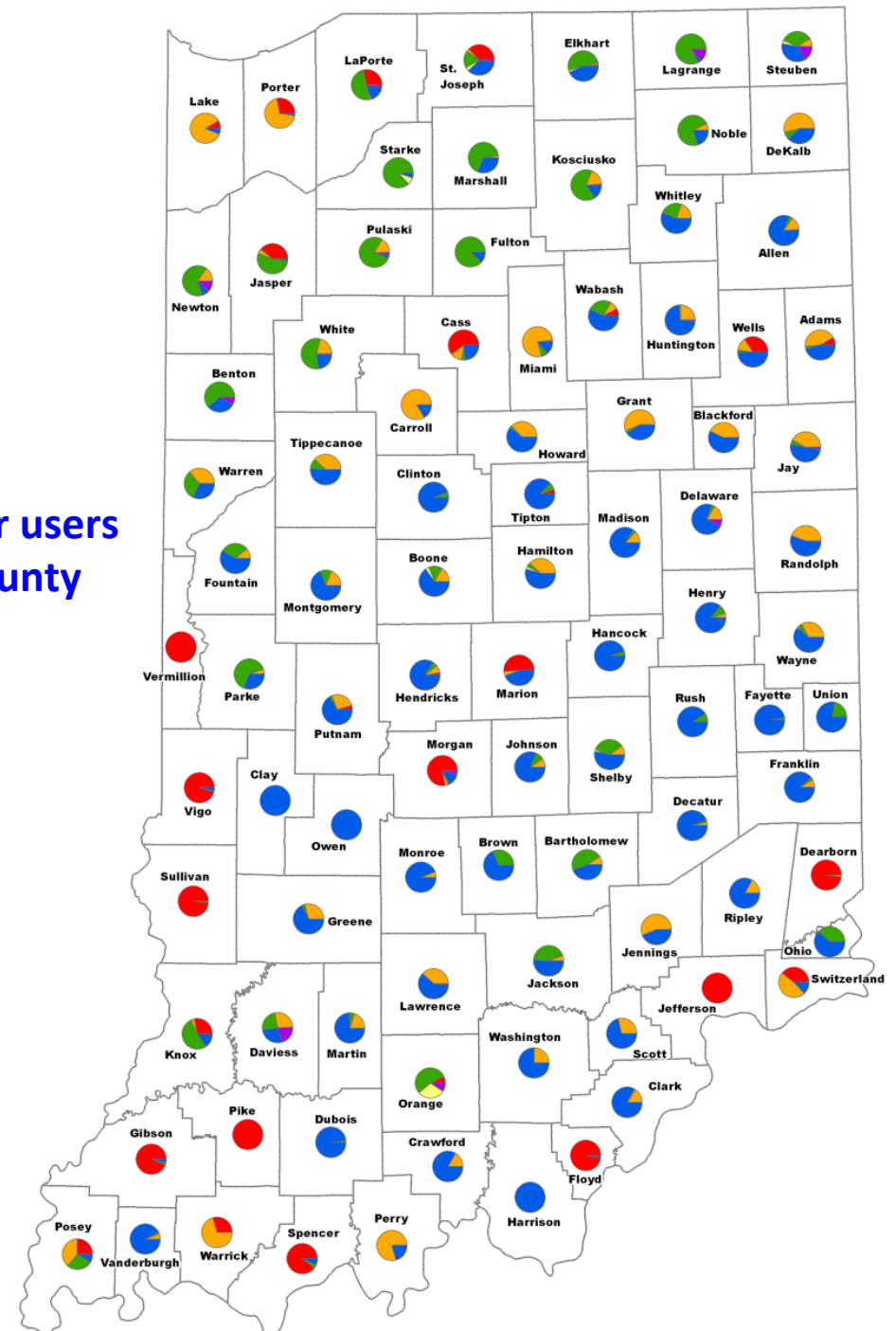
Drainage
Basins
(DNR)



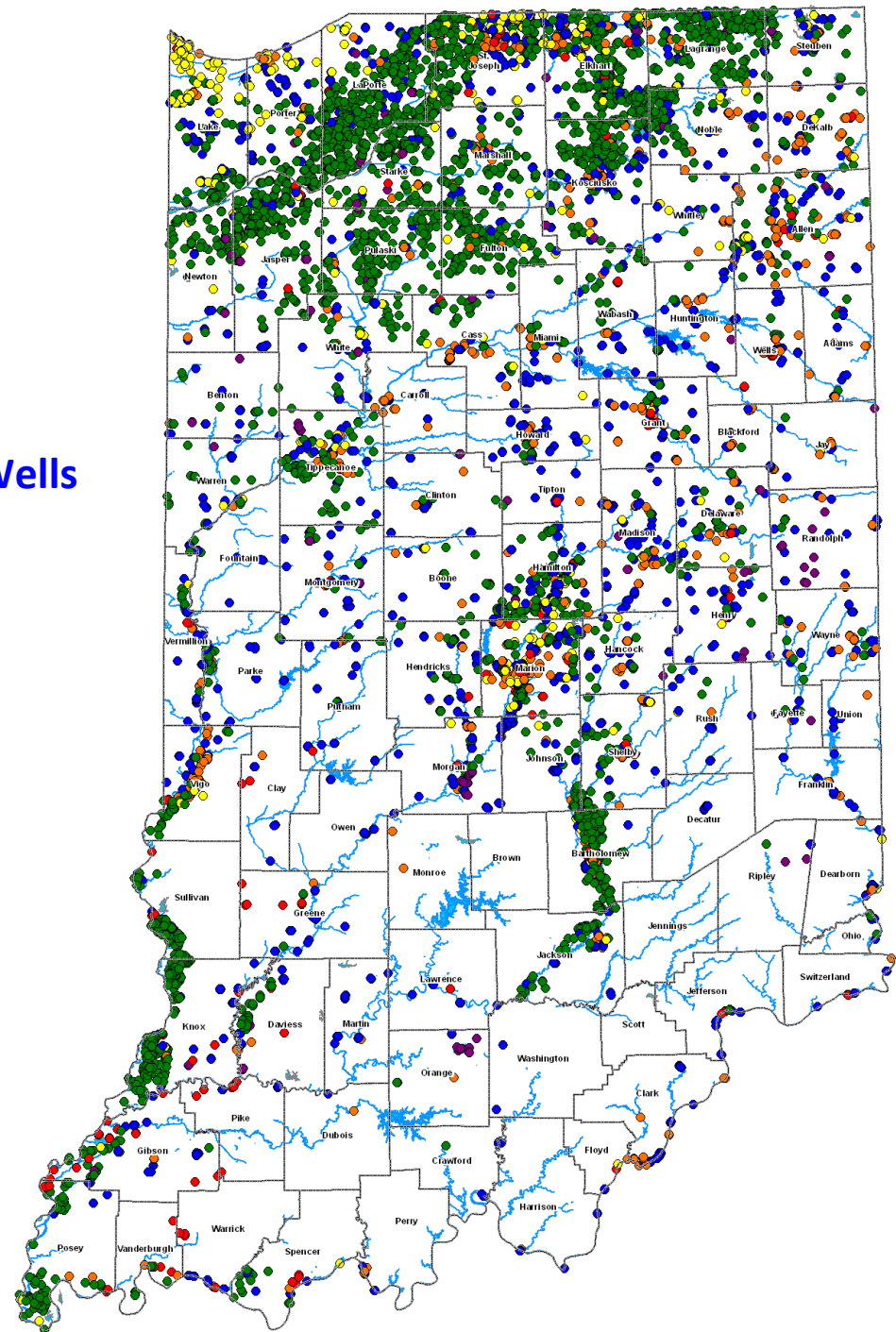
Drainage Basins (DNR)



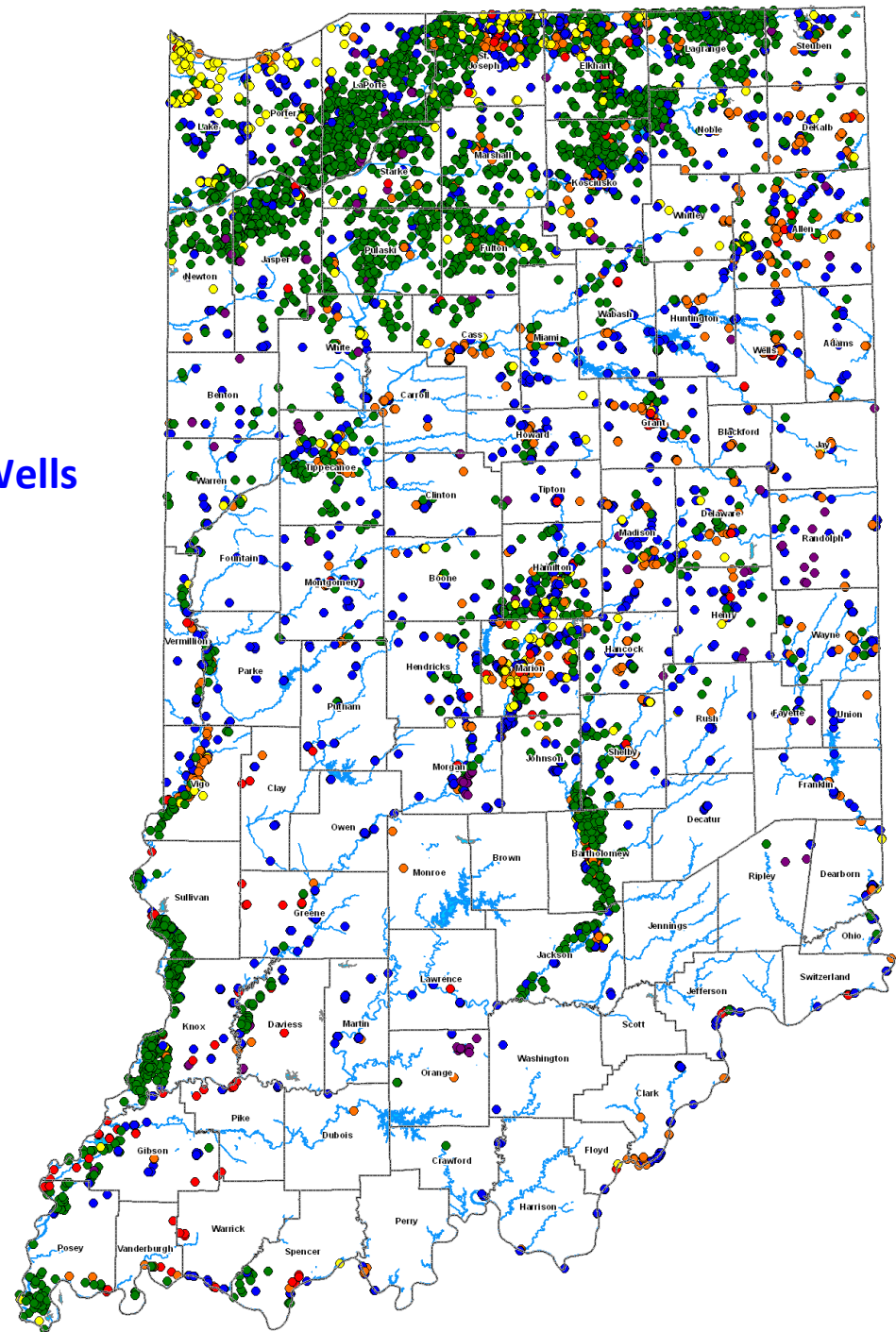
Water users by County



Water Wells by user

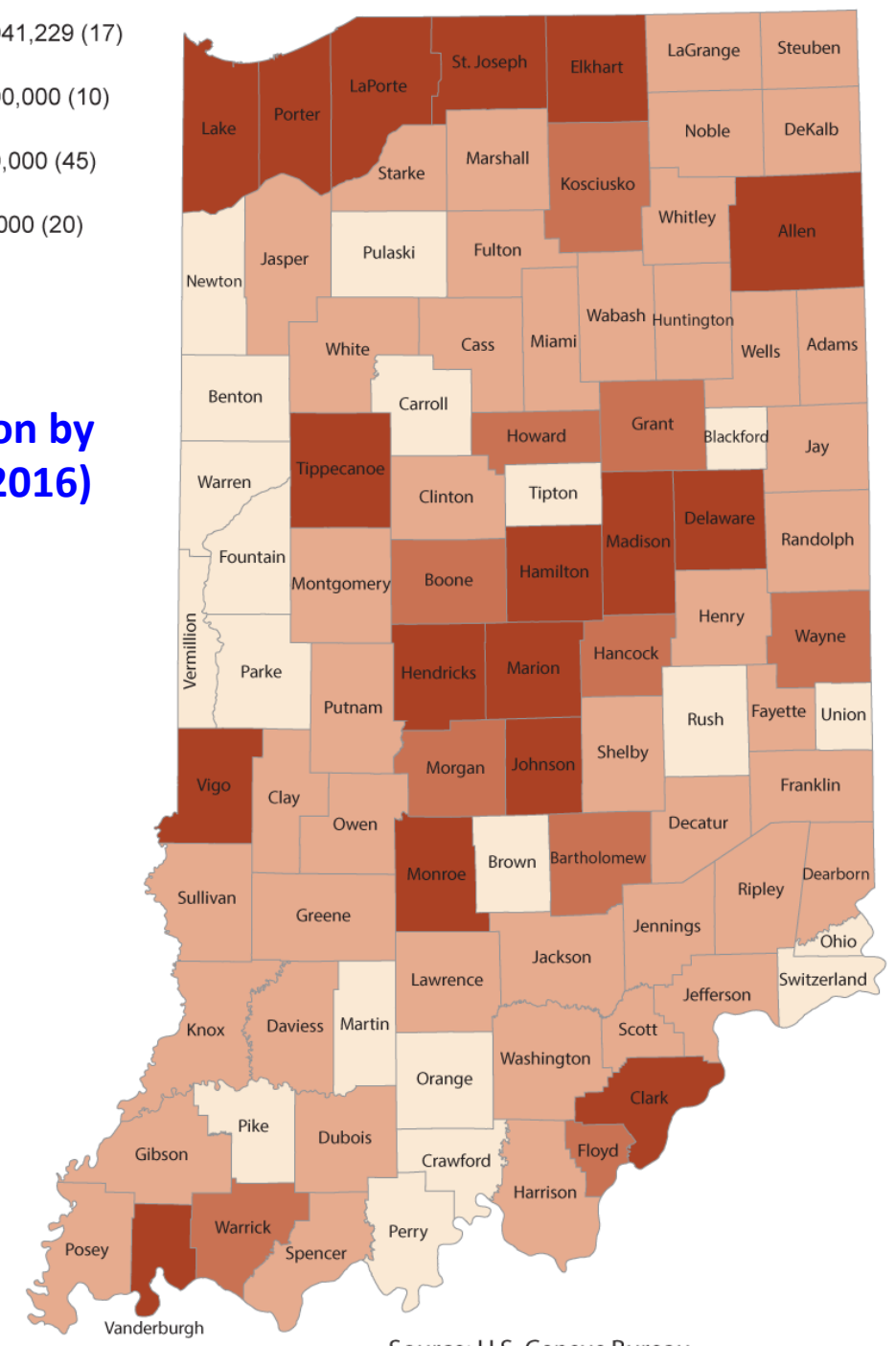


**Water Wells
by user**



- 100,001 to 941,229 (17)
- 50,001 to 100,000 (10)
- 20,001 to 50,000 (45)
- 5,932 to 20,000 (20)

**Population by
county (2016)**



Source: U.S. Census Bureau

Legend

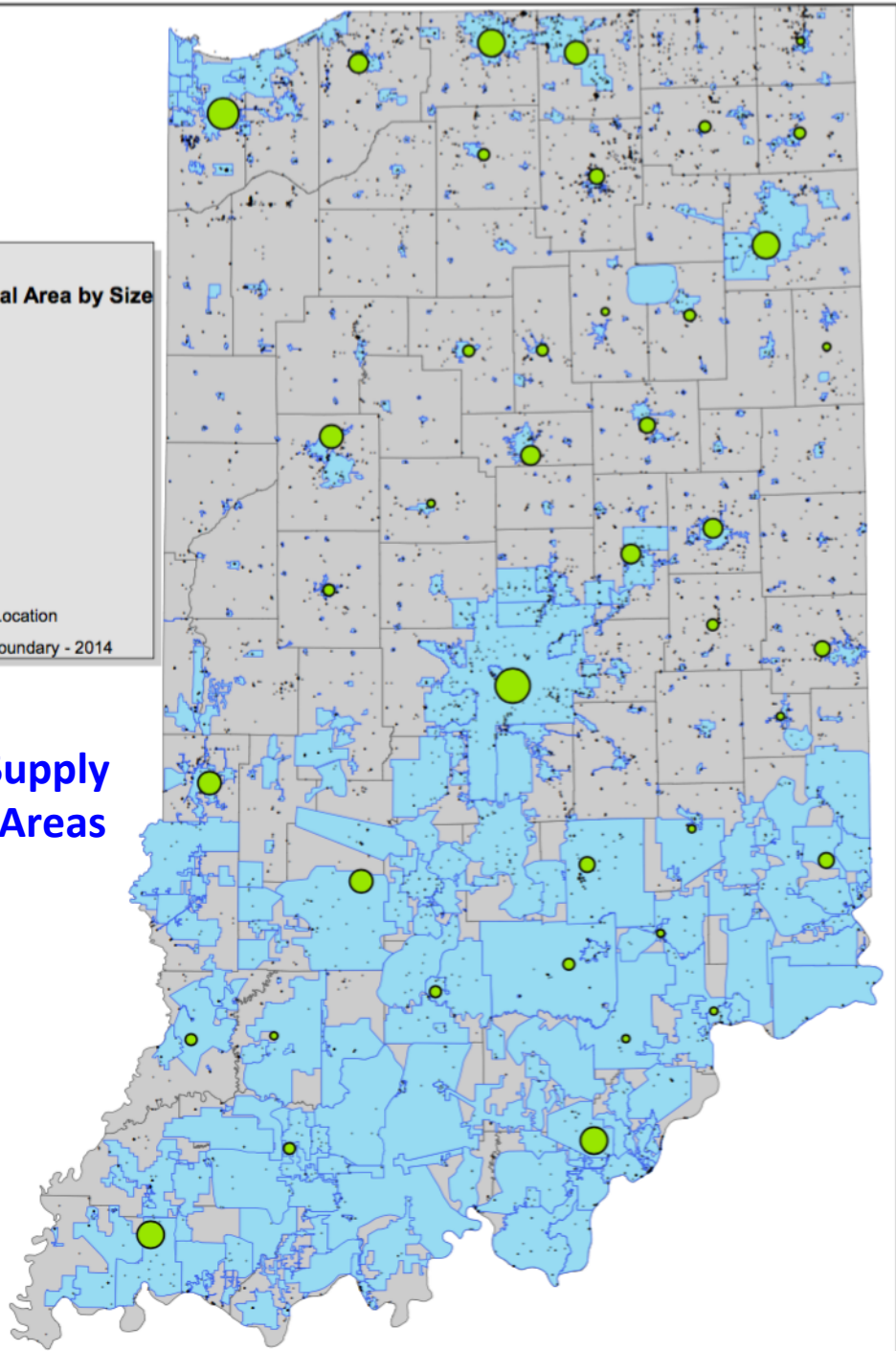
Metropolitan Statistical Area by Size

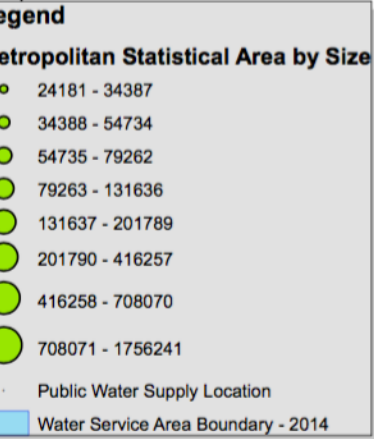
- 24181 - 34387
- 34388 - 54734
- 54735 - 79262
- 79263 - 131636
- 131637 - 201789
- 201790 - 416257
- 416258 - 708070
- 708071 - 1756241

Public Water Supply Location

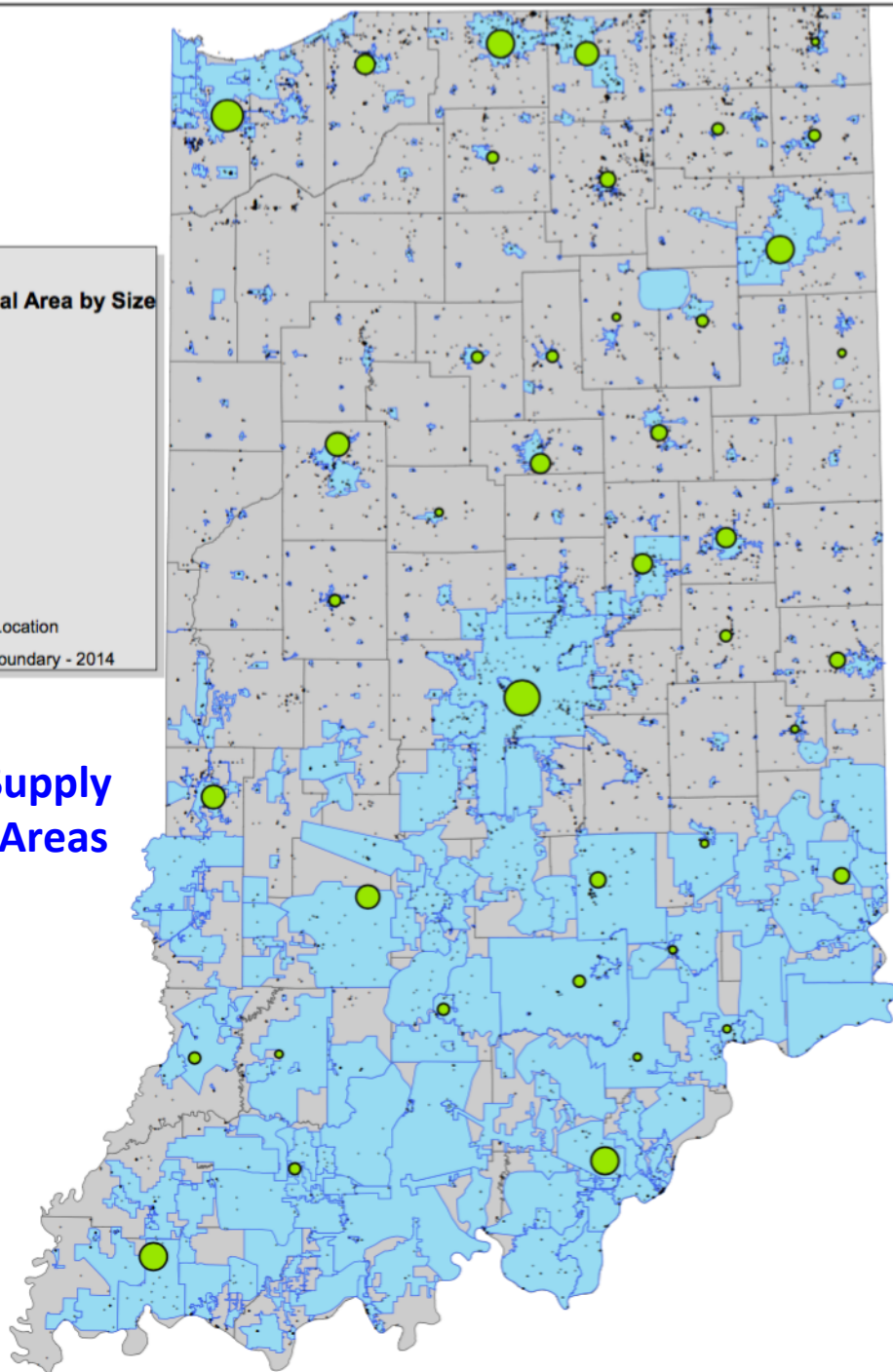
Water Service Area Boundary - 2014

Water Supply Service Areas

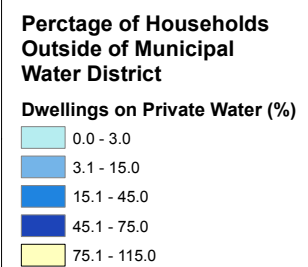
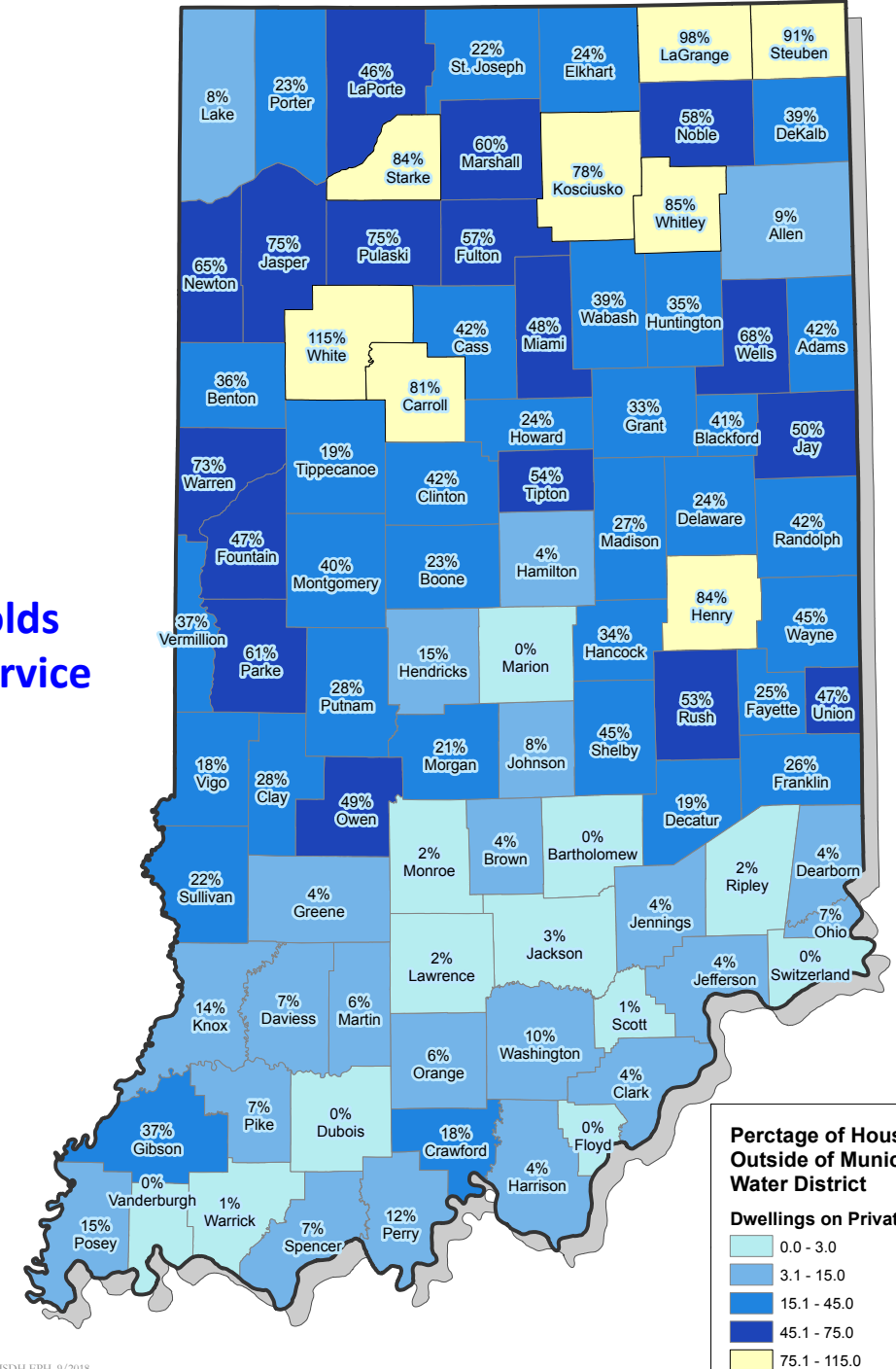




Water Supply Service Areas

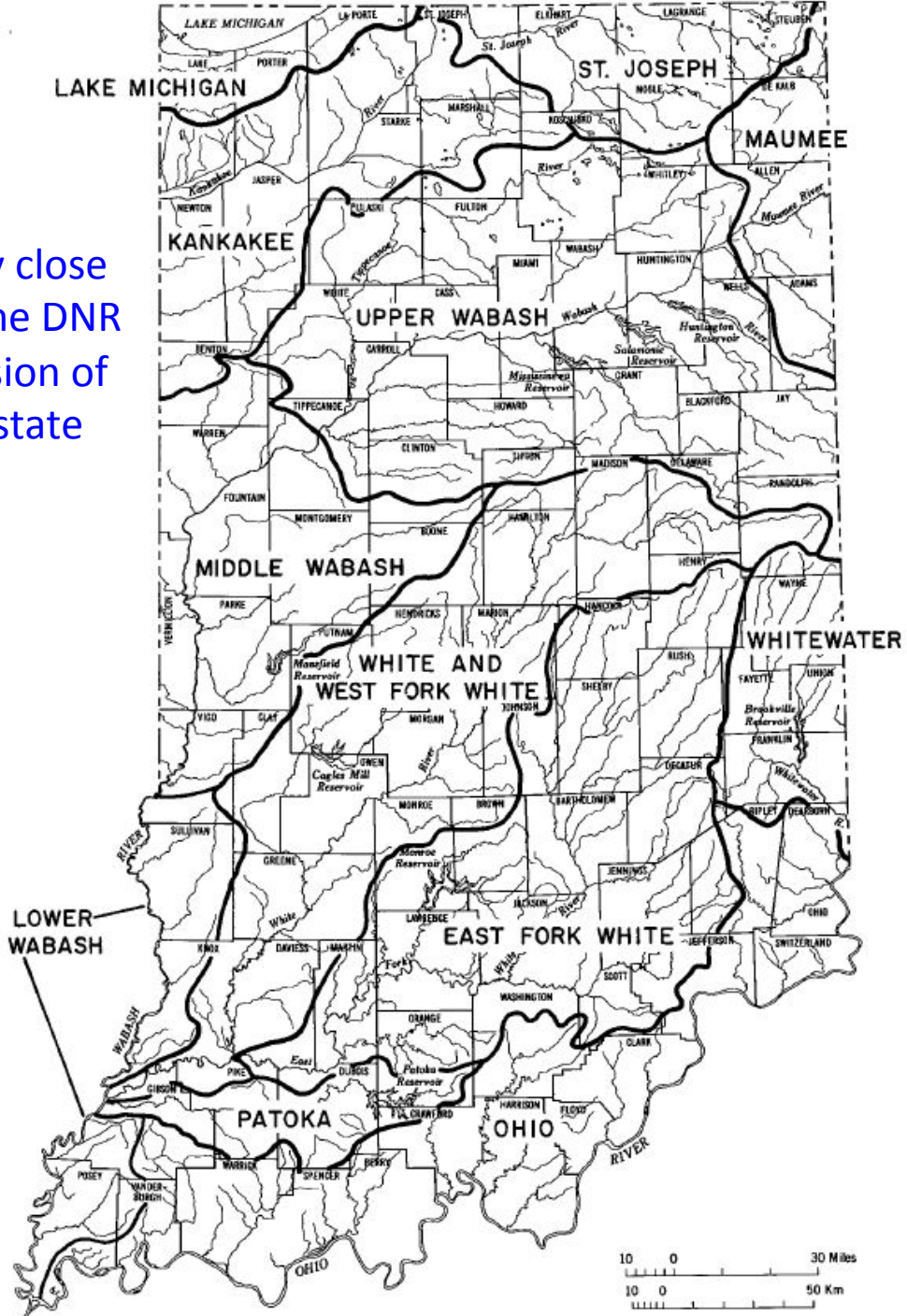


Households not in service areas



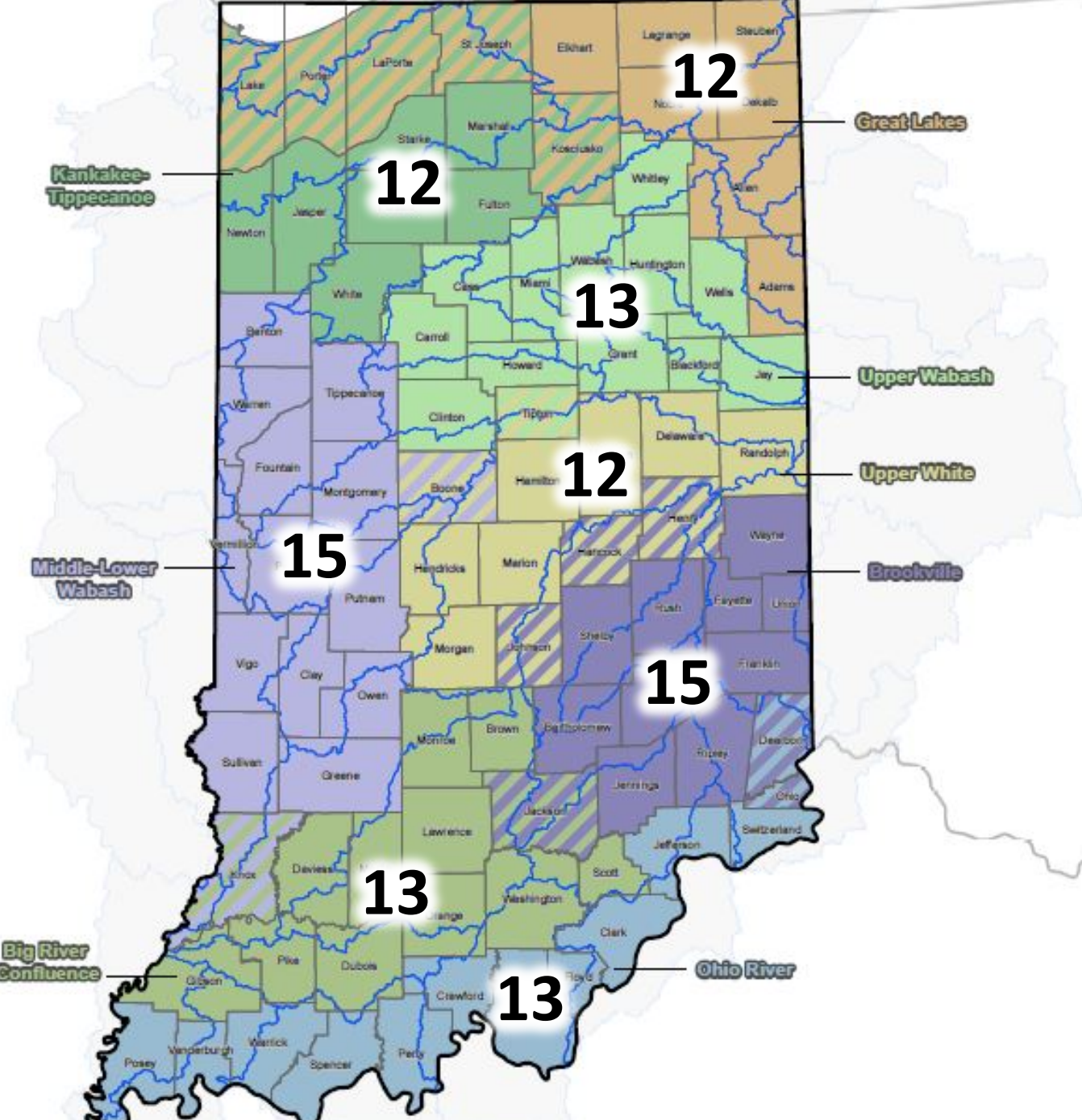
Map Author: ISDH EPH, 9/2018
Data Source: U.S. Census Bureau, 2016; IDNR, 2016

Very close to the DNR division of the state



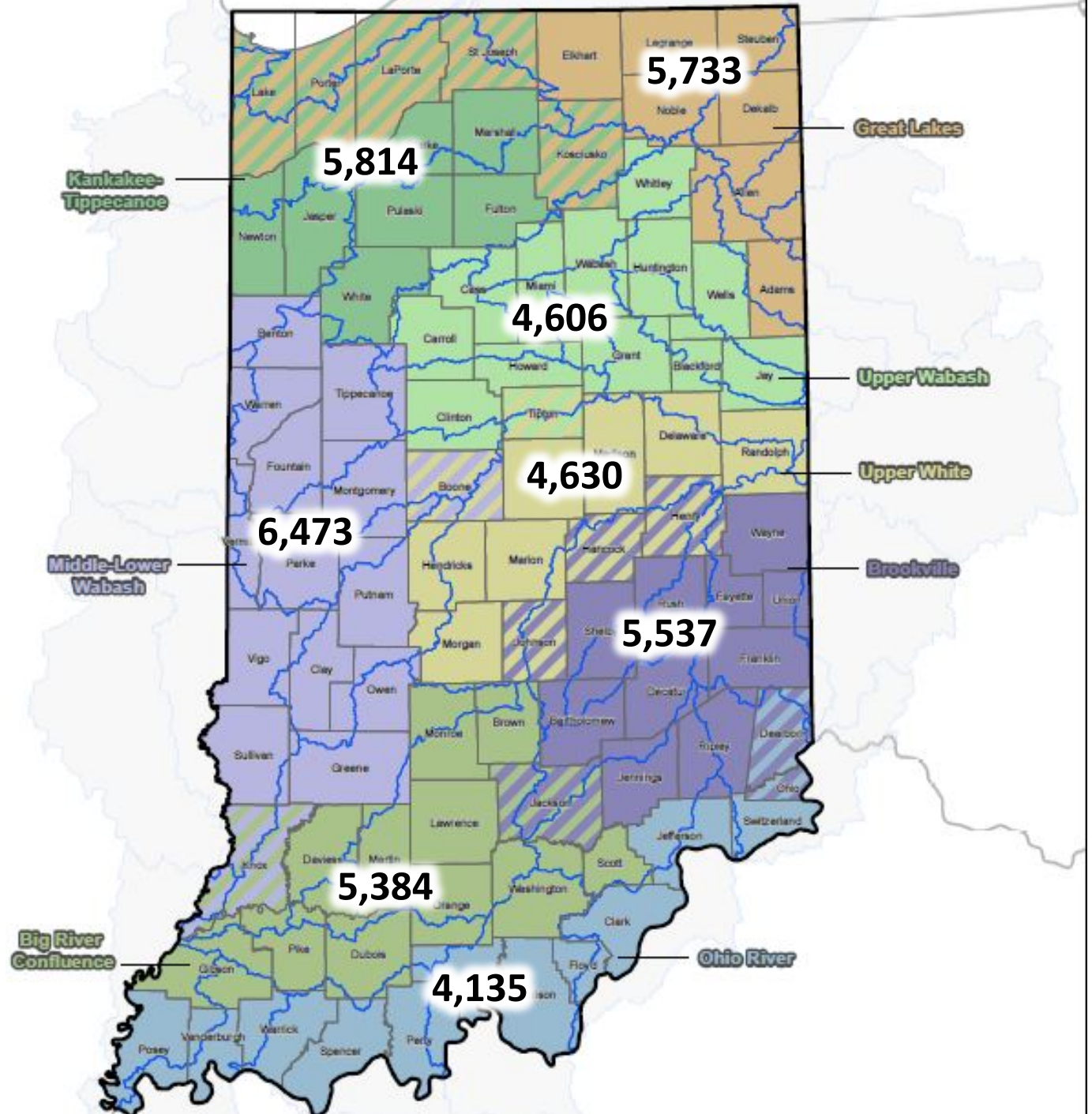
Number of Counties

More or less even representation of counties in the state.



Area (sq mi)

About 5,000 square miles per region.



Region Population

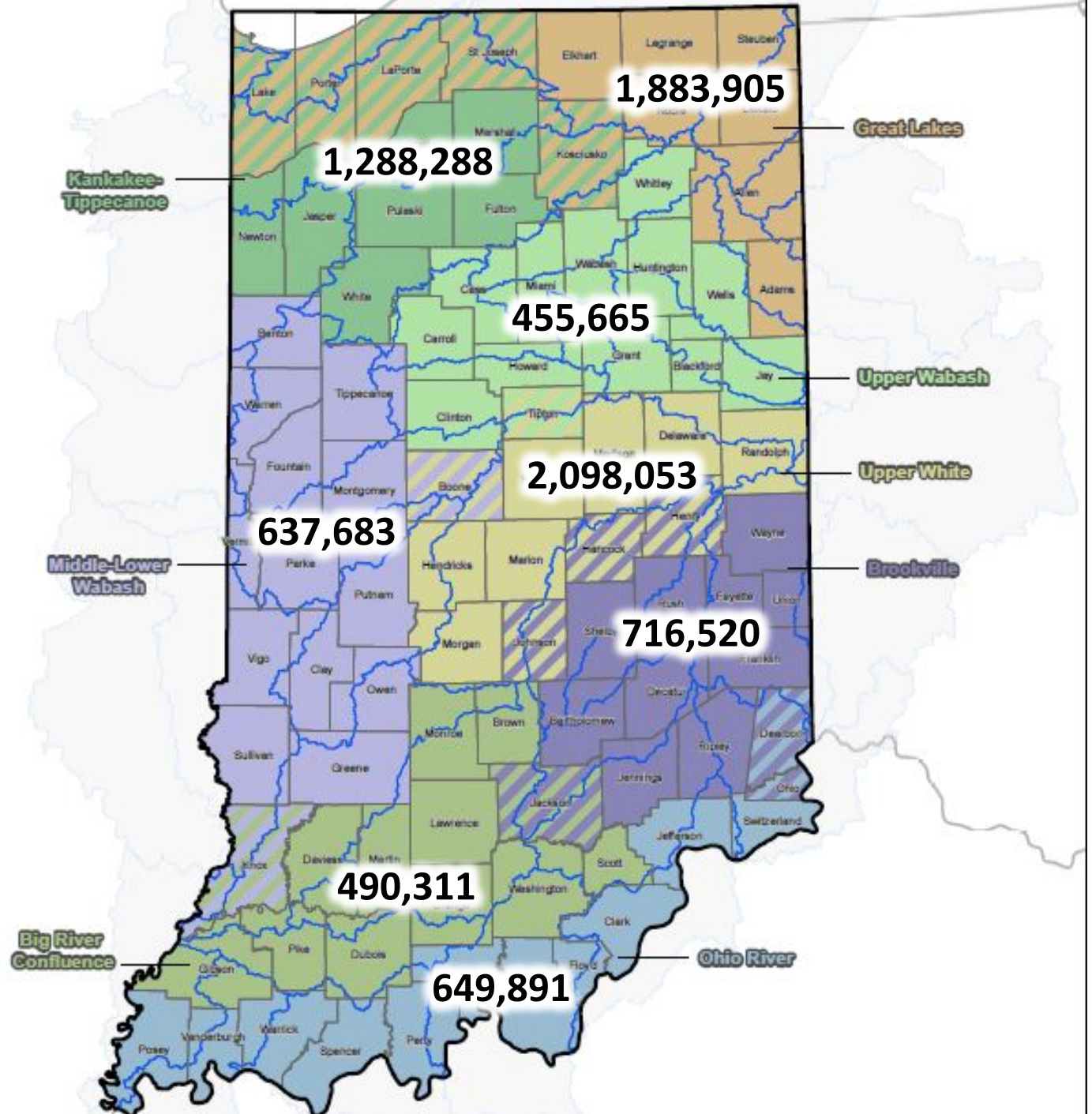
*Populations for overlapping counties were counted in both regions

Three population levels among regions:

~ 2 million

~ 1 million

~ 500,000



Number of Cities
~50,000+ people

