Legal Influences and Constraints on Western Water Resilience

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Conclusions First

- Water law is:
  - Largely a series of historical accidents
  - Inefficient
  - Complex
  - Highly fragmented
  - Plagued by gaps
  - Internally conflict-ridden
  - Subject to mythology
  - Often poorly enforced
- Yet water law also has proven historically to be surprisingly:
  - Flexible
  - Adaptive
  - Effective

Principal Internal Conflicts

- Security versus Flexibility
- Crystals versus Mud
- Regulation versus Market Incentives
- Public Good/Right versus Commodity
- Efficiency versus Equity
- Development versus Preservation

The Basics

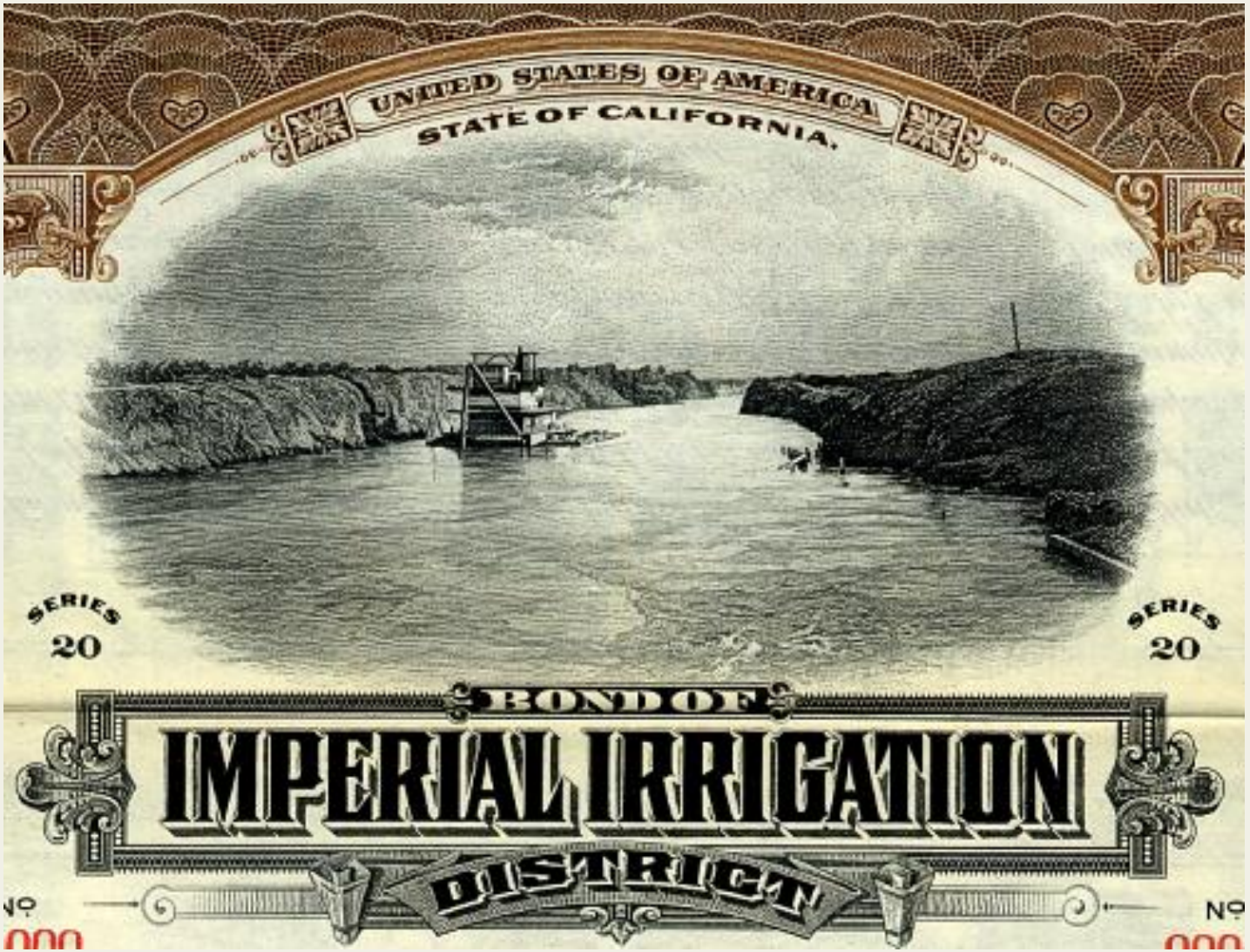
Riparian Rights

Prior Appropriation

Interstate and International Allocations and Management

Conservation

The "Reasonable & Beneficial Use" Doctrine

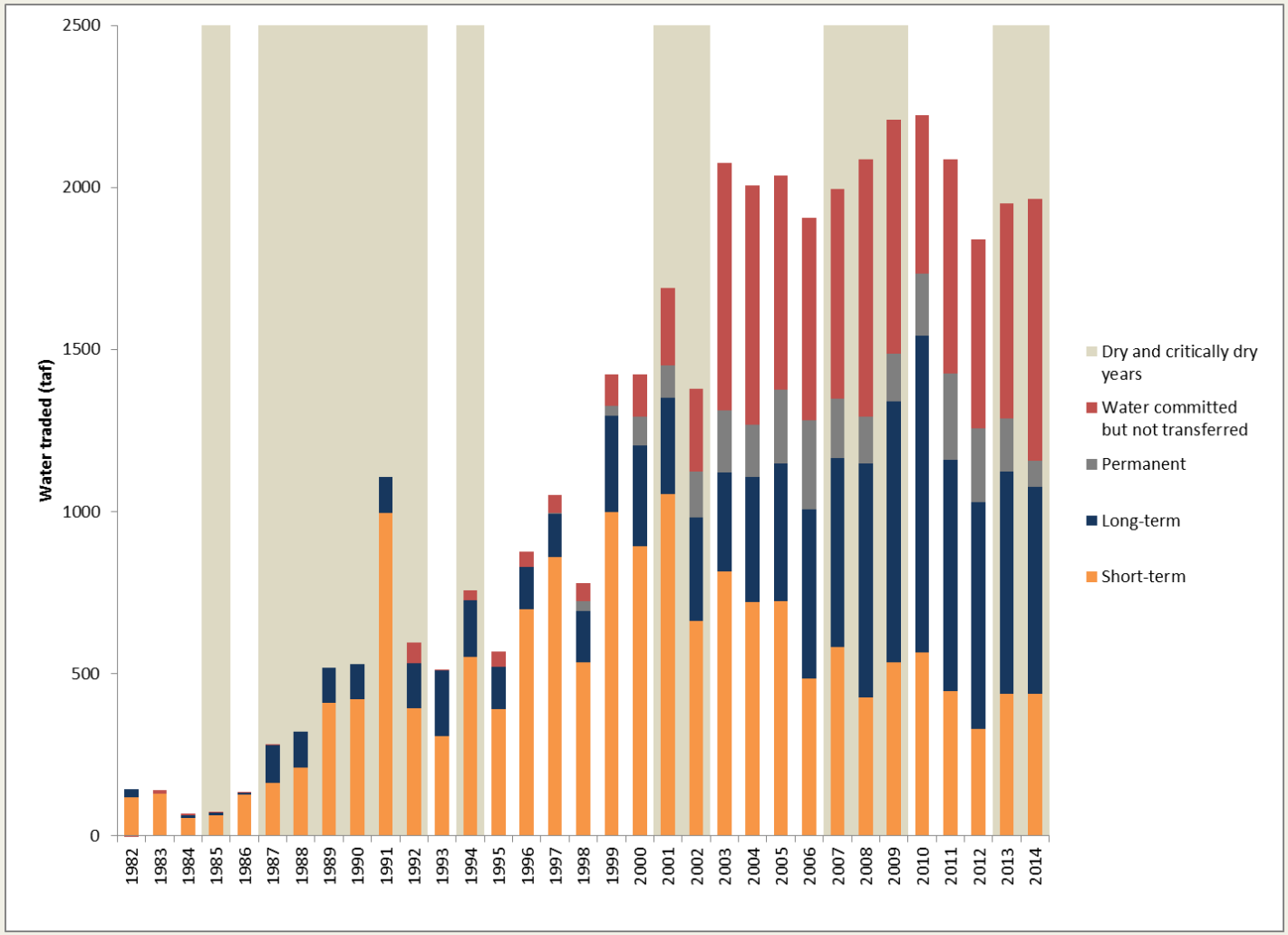


Encouraging Voluntary Conservation

Montana v. Wyoming

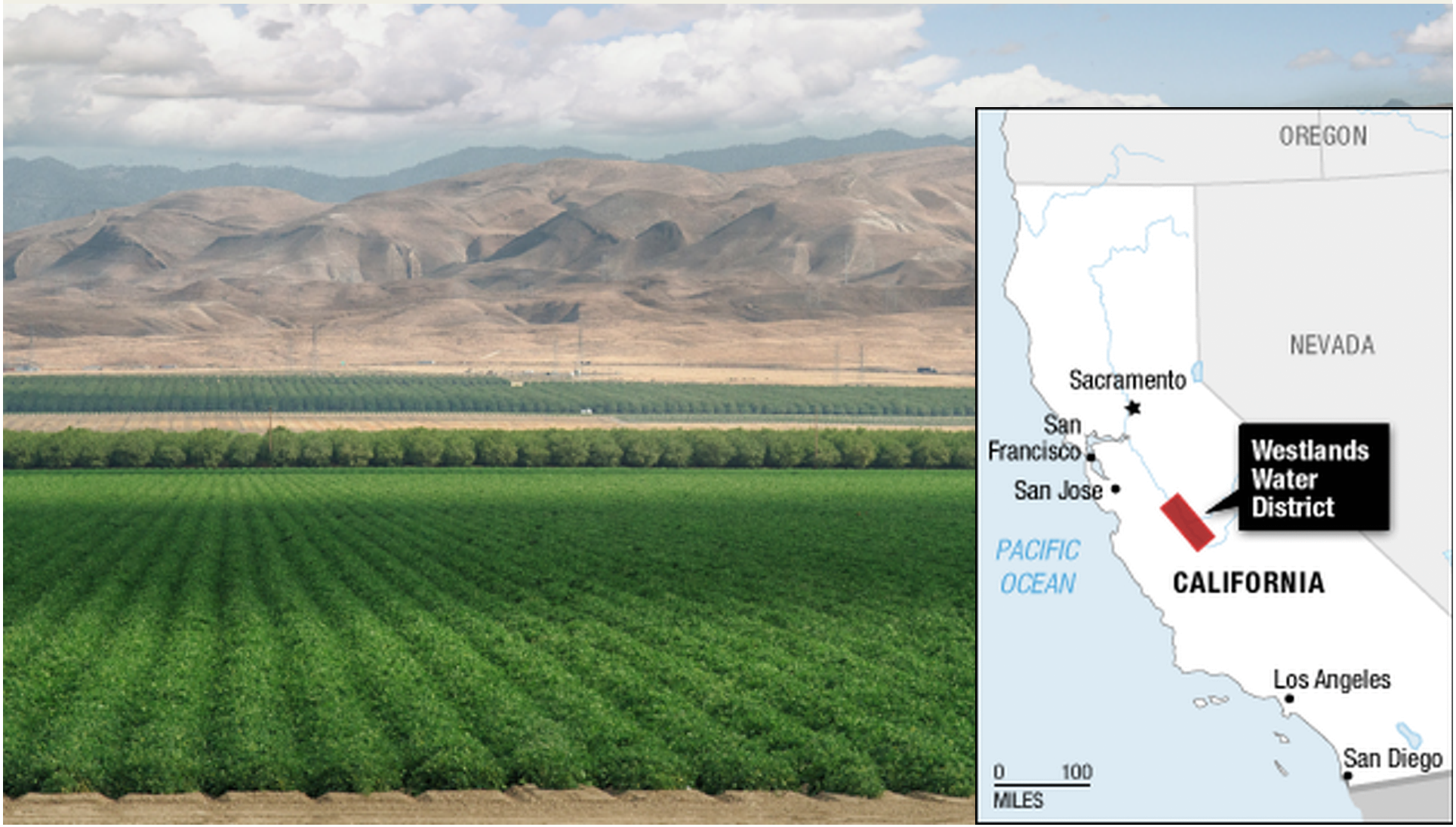
Water Reclamation & Reuse

Water Marketing



PPIC 2015

Intra-District Water Markets



Challenges of Interstate Water Marketing

Water Pricing

Groundwater

Groundwater Overdrafting

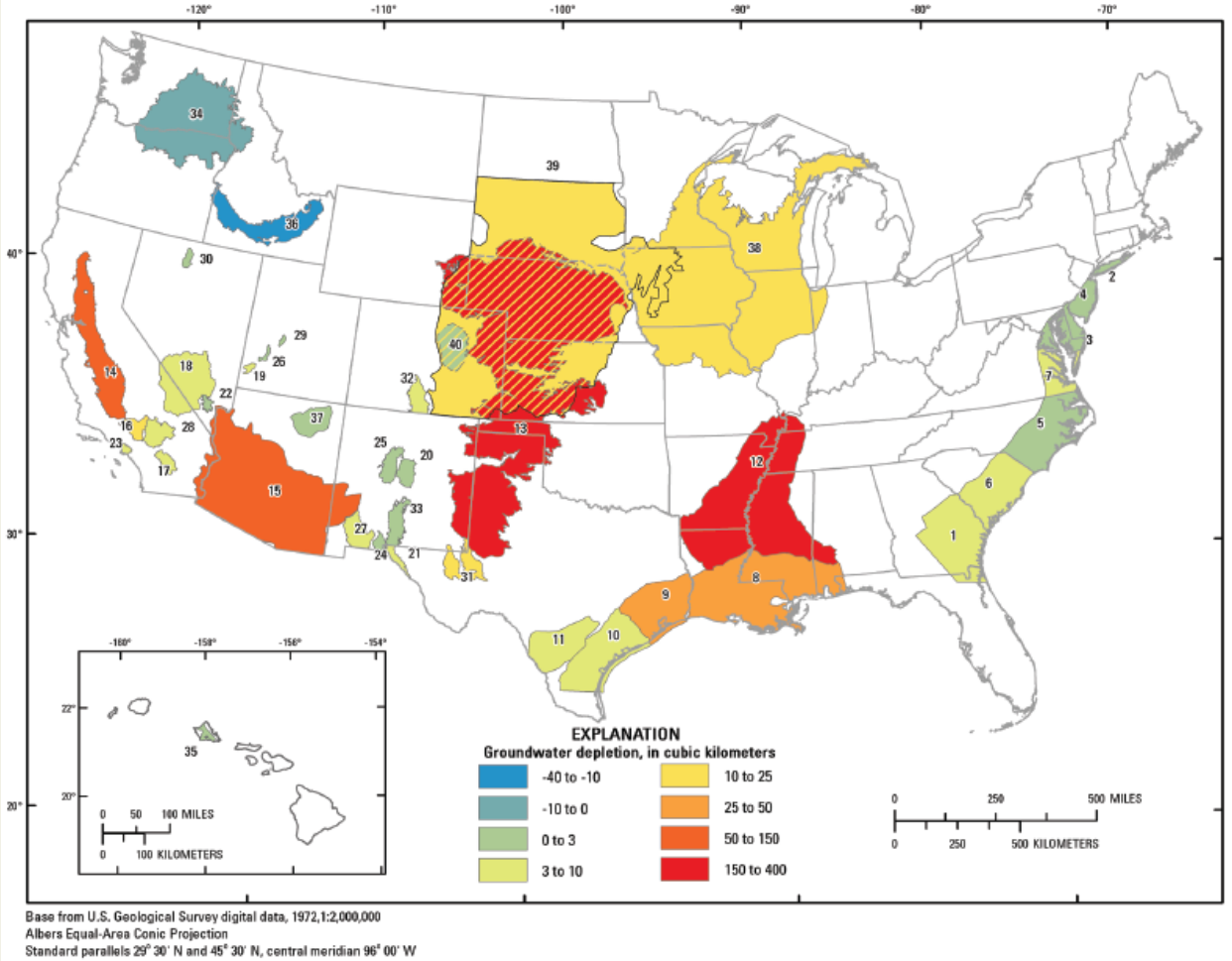
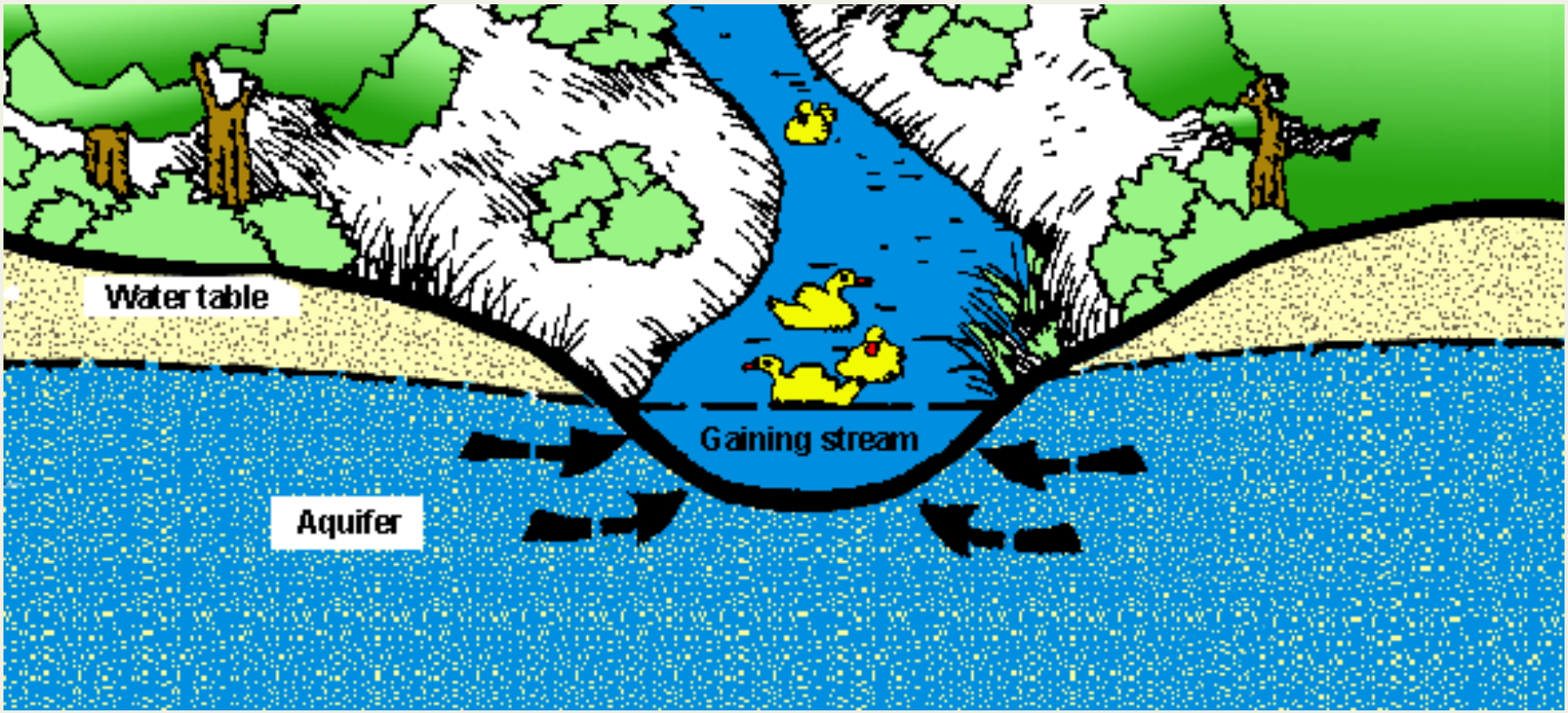


Figure 2. Map of the United States (excluding Alaska) showing cumulative groundwater depletion, 1900 through 2008, in 40 assessed aquifer systems or subareas. Index numbers are defined in table 1. Colors are hatched in the Dakota aquifer (area 39) where the aquifer overlaps with other aquifers having different values of depletion.

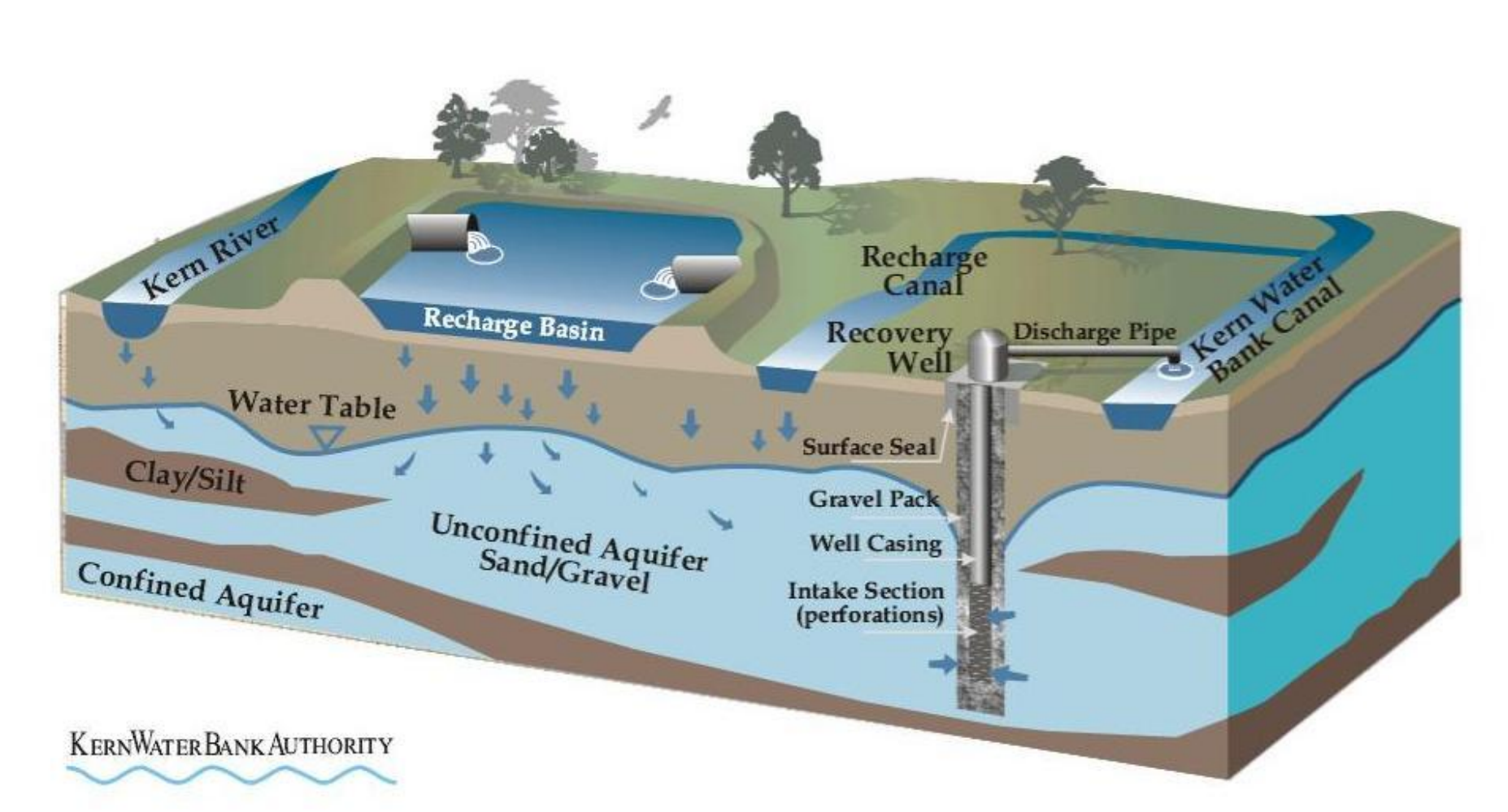
USGS 2013

Groundwater Management Districts

Groundwater-Surface Water Interconnections



Aquifer Storage & Recovery



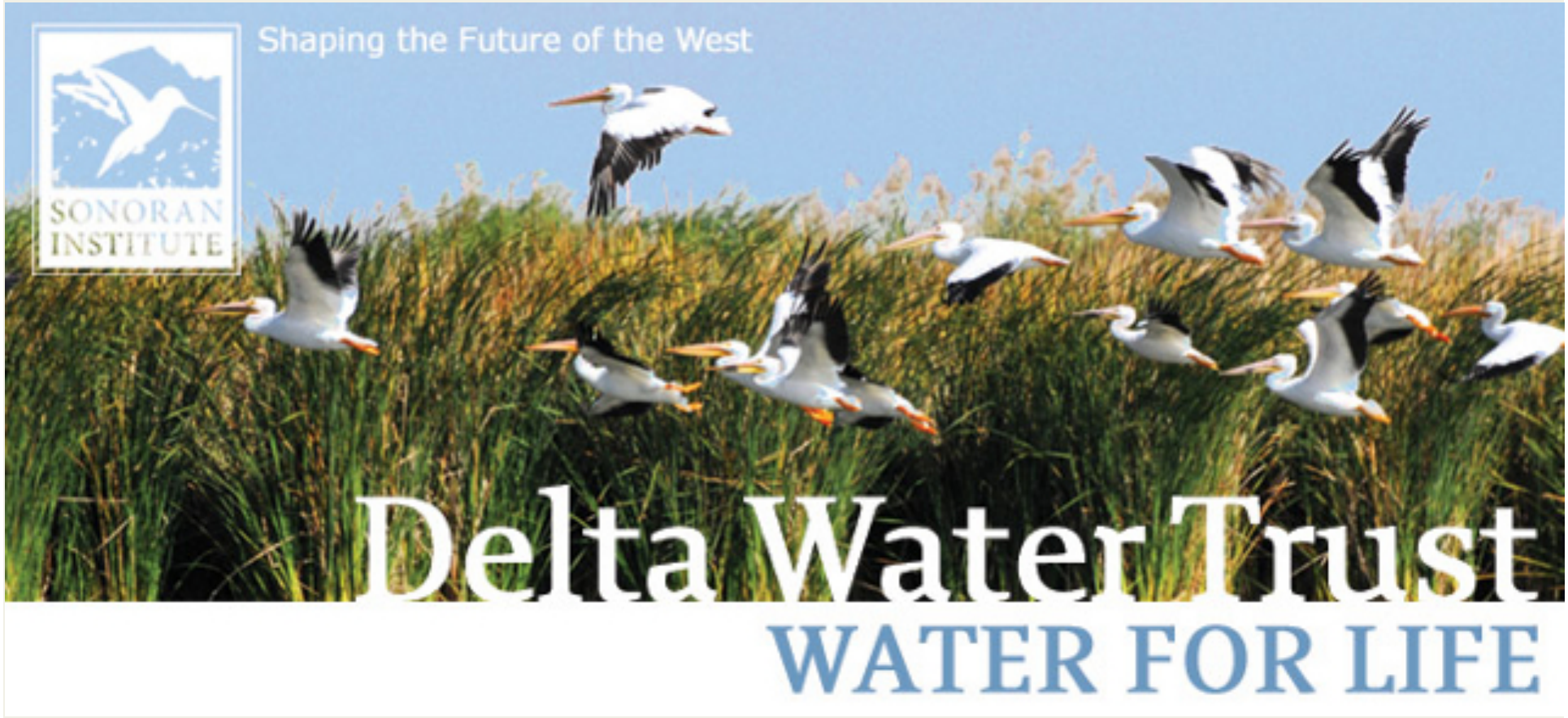
Instream Protection

Public Trust Doctrine

Endangered Species Act

Constitutional Takings Challenges

Environmental Transactions



Other Legal Challenges

Monitoring & Enforcement

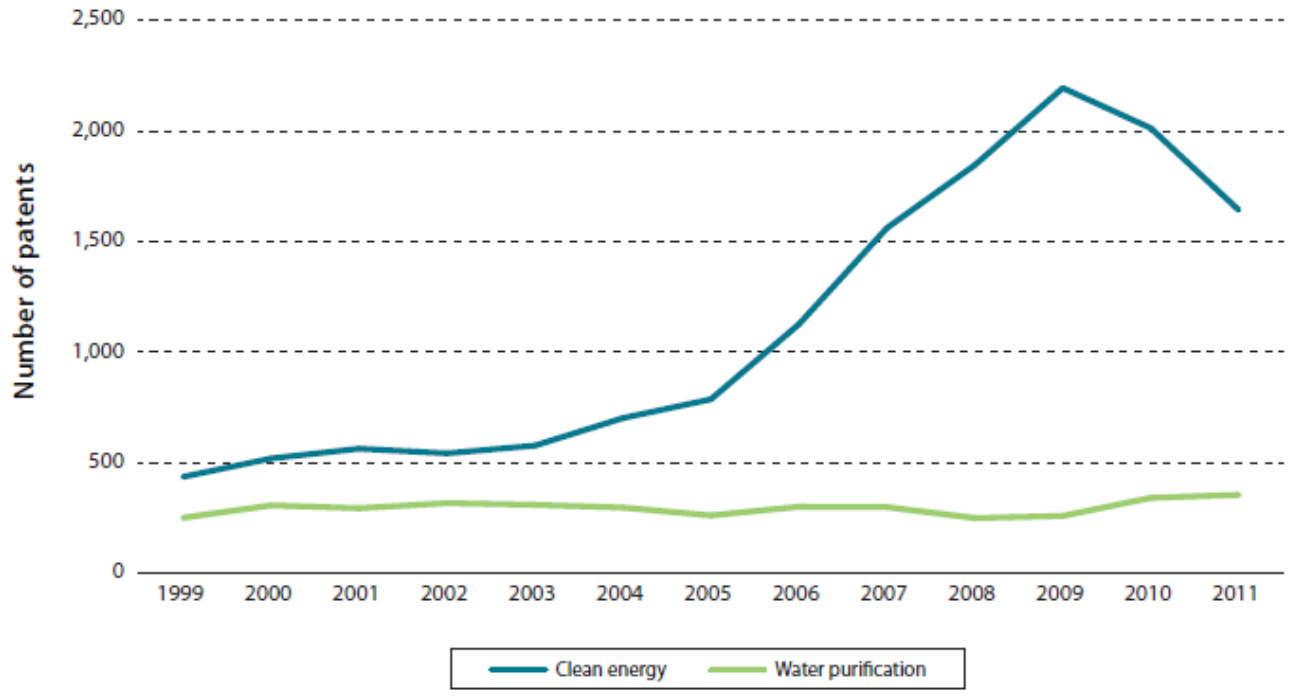
Water Quality

Dams

Innovation

FIGURE 2.

Comparison of U.S. Patents Filed under the Patent Cooperation Treaty for Clean Energy and Water Purification, 1999–2011



Source: Organisation for Economic Co-operation and Development (OECD) 2014.

Note: Clean energy = biomass generation + energy efficiency + energy storage + geothermal + hydro & marine power + solar + wind; and water purification is the primary contributor to patent filings in the water sector.

Conclusions Redux

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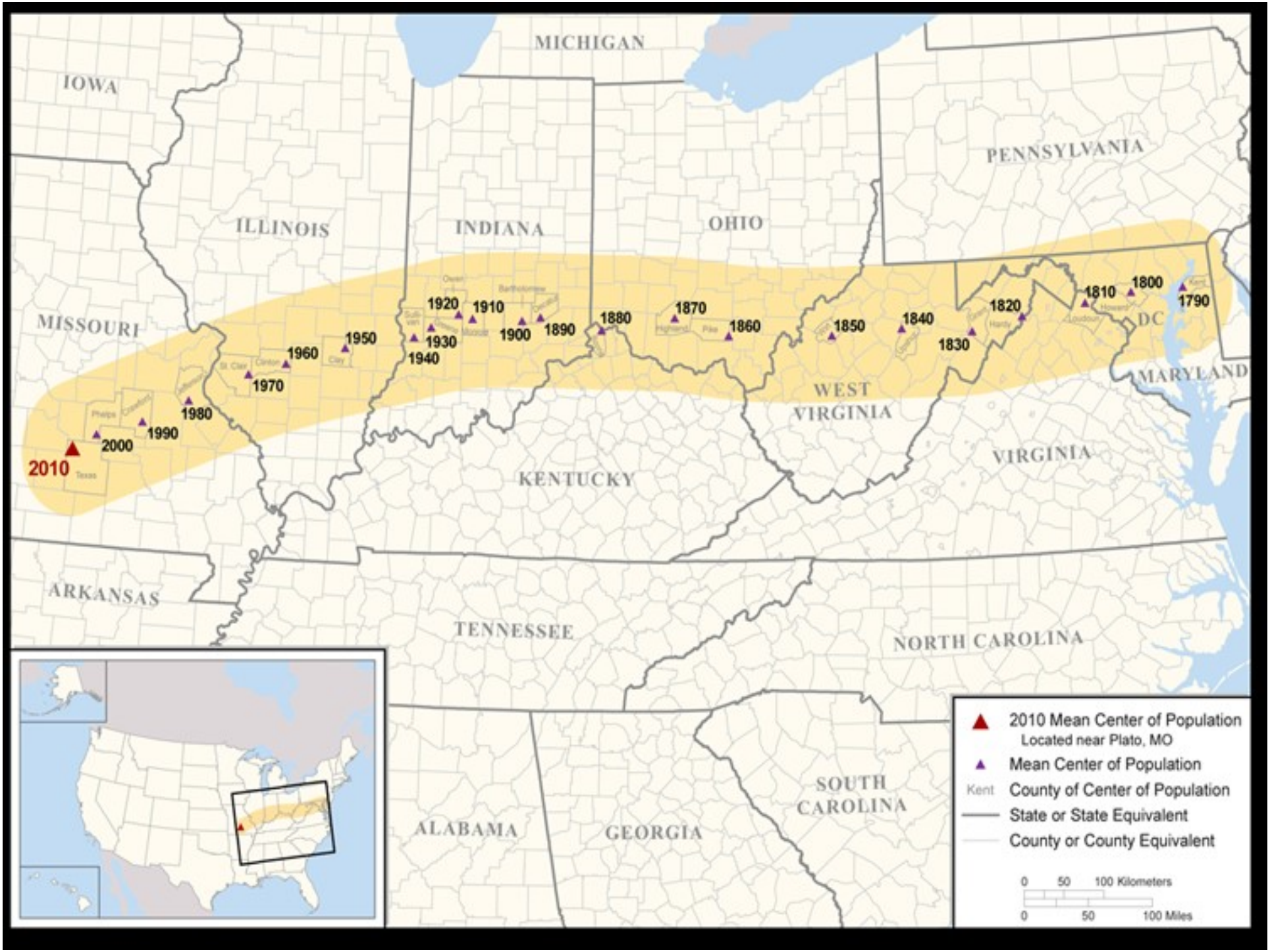
MICHIGAN
IOWA
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
MISSOURI
WEST VIRGINIA
MARYLAND
DC
VIRGINIA
KENTUCKY
ARKANSAS
TENNESSEE
NORTH CAROLINA
SOUTH CAROLINA
ALABAMA
GEORGIA
2010
2000
1990
1980
1970
1960
1950
1940
1930
1920
1910
1900
1890
1880
1870
1860
1850
1840
1830
1820
1810
1800
1790
2010 Mean Center of Population
Located near Plato, MO
Mean Center of Population
Kent County of Center of Population
State or State Equivalent
County or County Equivalent
0 50 100 Kilometers
0 50 100 Miles


Questions &
Discussion