



State of the Watershed “A Watershed United” Coalition Conference

**Delaware River Basin
Commission**

June 10, 2013

Presentation Overview

- Basin Facts and Attributes
- Watershed Conditions
 - 2006 Land Use/Land Cover
 - Water Quantity
 - Water Quality
- Drivers of future change to the DRB system

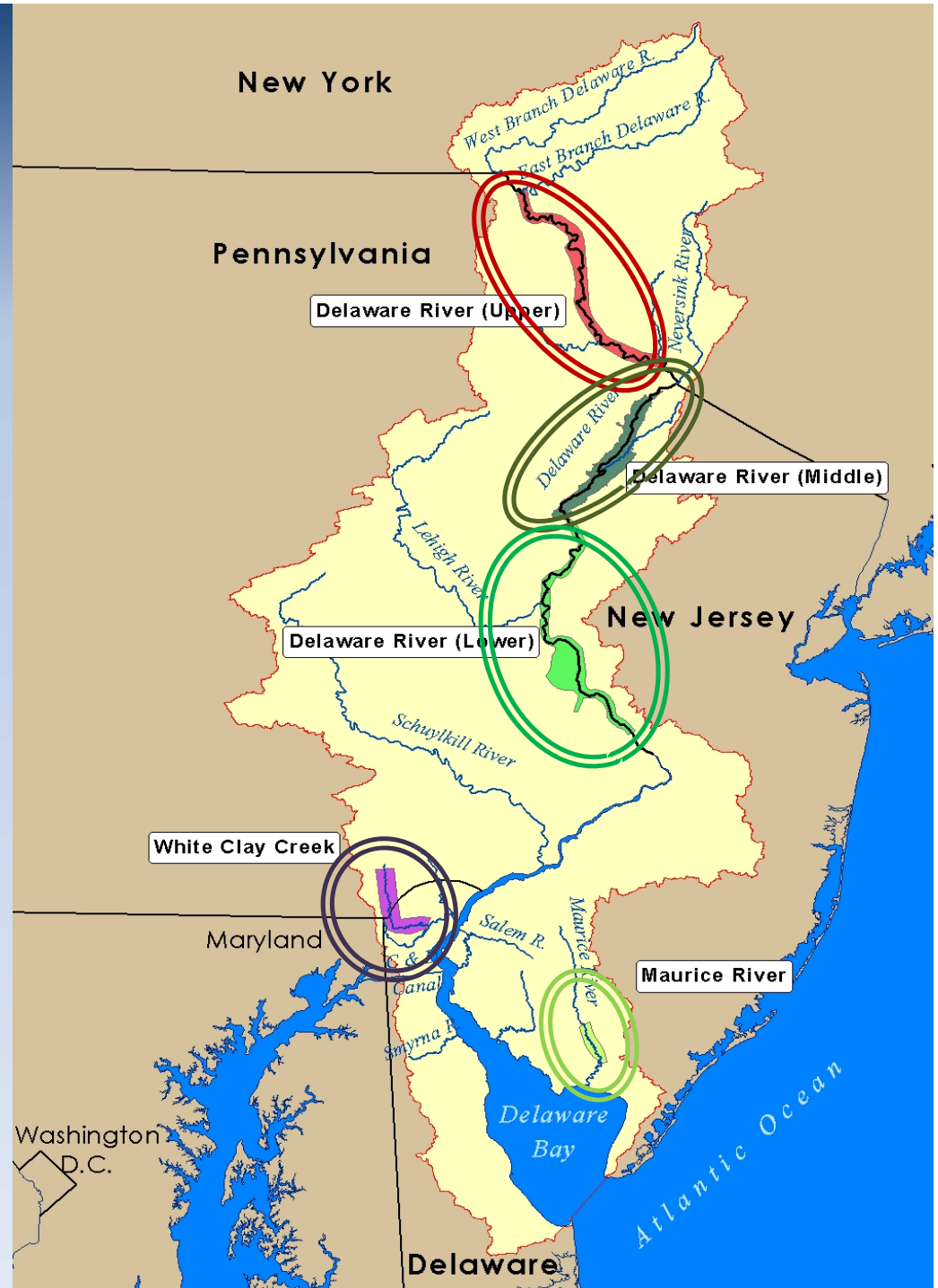
Delaware River Basin Basin Facts

- ❑ Over 15 million people (about 5% of the U.S. population) rely on the waters of the basin for water supply
- ❑ Drains 13,539 mi² of the continental U.S.
- ❑ Longest undammed river east of Mississippi (330 miles)

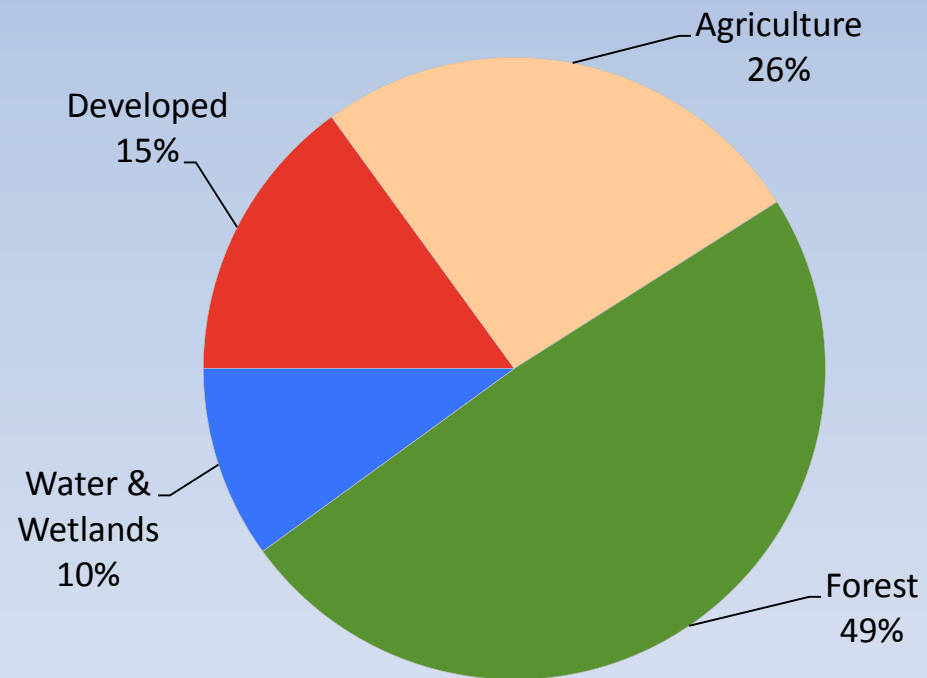
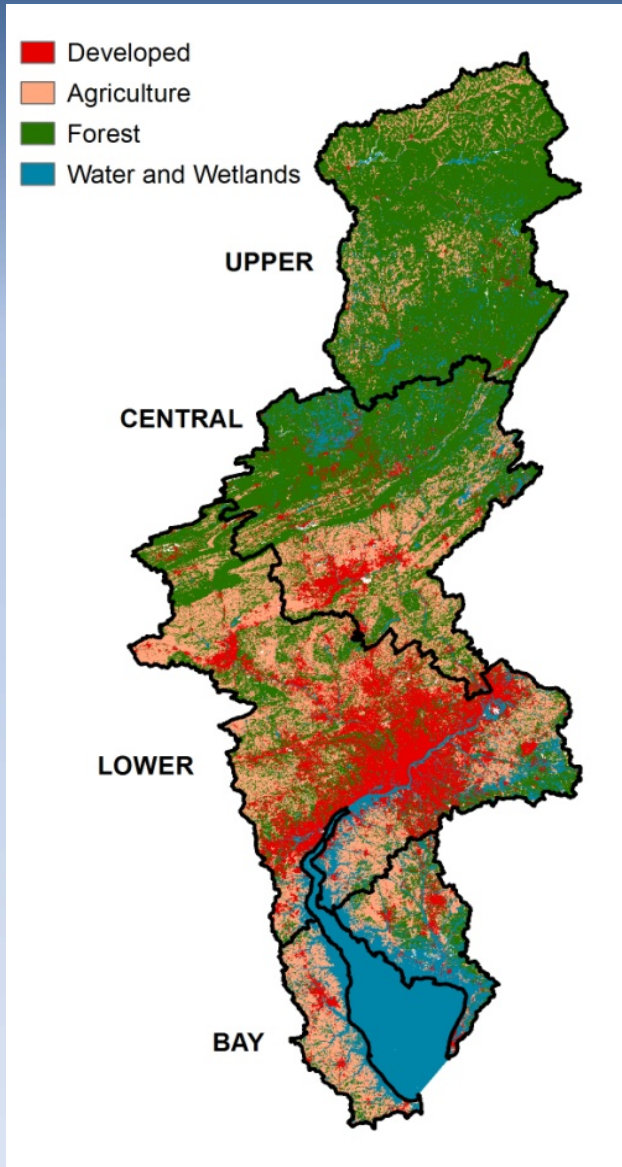


Upper Basin: Outstanding Regional Resource

- Exceptional water quality
- Exceptional source water
- High ecological diversity
- ~75% of the non-tidal river is part of the National Wild and Scenic Rivers System
- 100% of non-tidal river is Special Protection Waters



2006 Land Use/Land Cover in the Delaware River Basin



Legend: ■ Developed ■ Agriculture ■ Forest ■ Water & Wetlands

Note: Upper Basin Forests > 80%

Water Quantity Primary Indicators

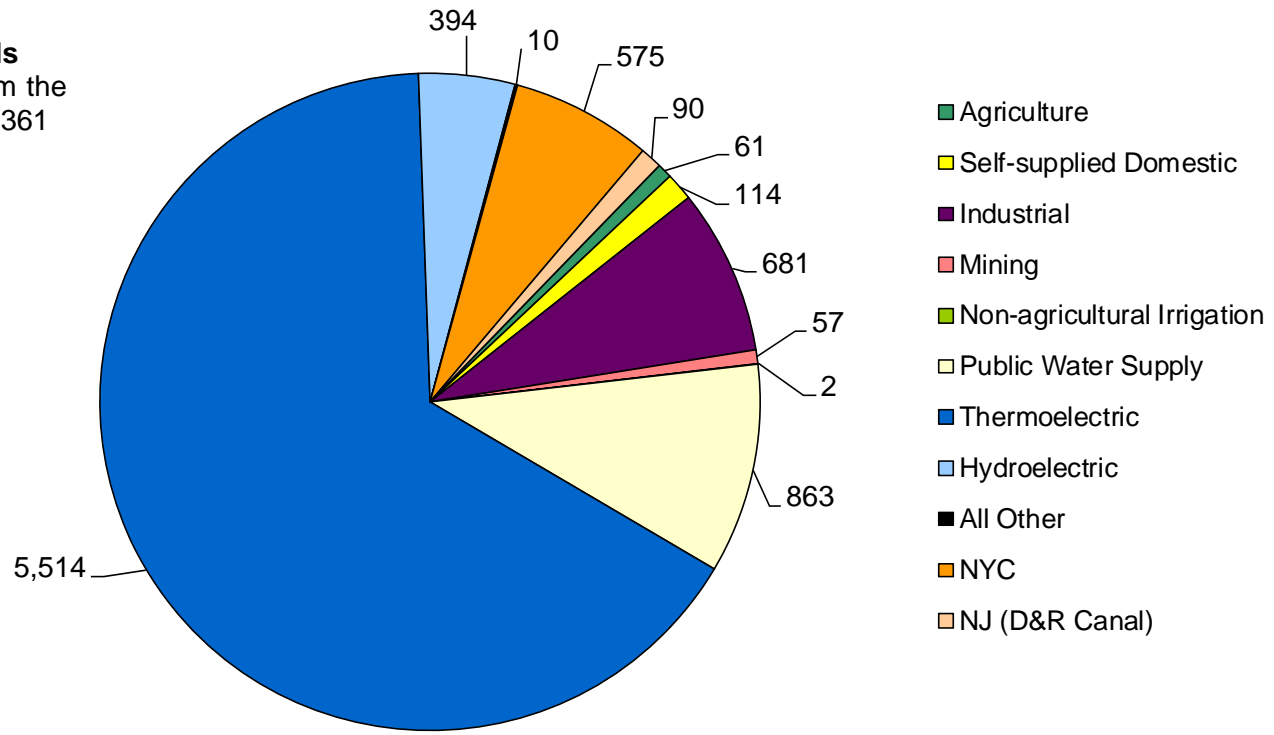
- 1 – Water Withdrawals – Tracking Supply and Demand
- 2 – Consumptive Use
- 3 – Per Capita Water Use
- 4 – Groundwater Availability

Delaware River Basin Water Use

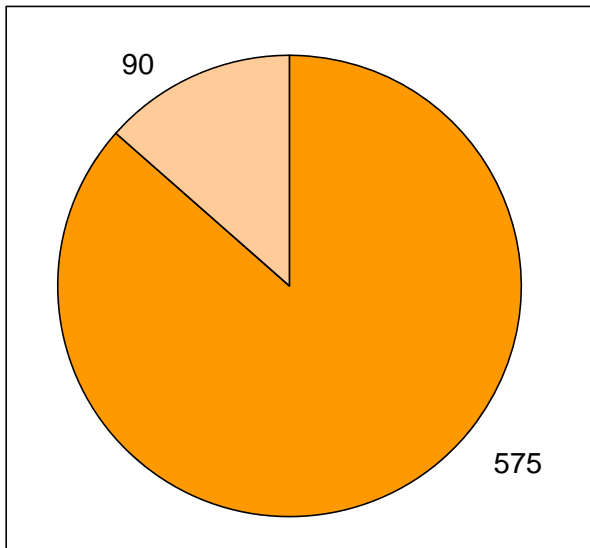
- Approx. 15 million people rely on water from the Basin
- Total Withdrawals: 8.4 Billion Gallons per Day
- Major Exports: 665 MGD
- Consumptive Use (in the basin): 302 MGD
- 90% of water used from surficial sources
- Largest use sectors:
 - Power Generation (68%)
 - Public Water Supply (11%)
 - Industrial (8%)

DAILY WATER WITHDRAWS, MAJOR EXPORTS AND CONSUMPTIVE USE IN THE DRB, 2007

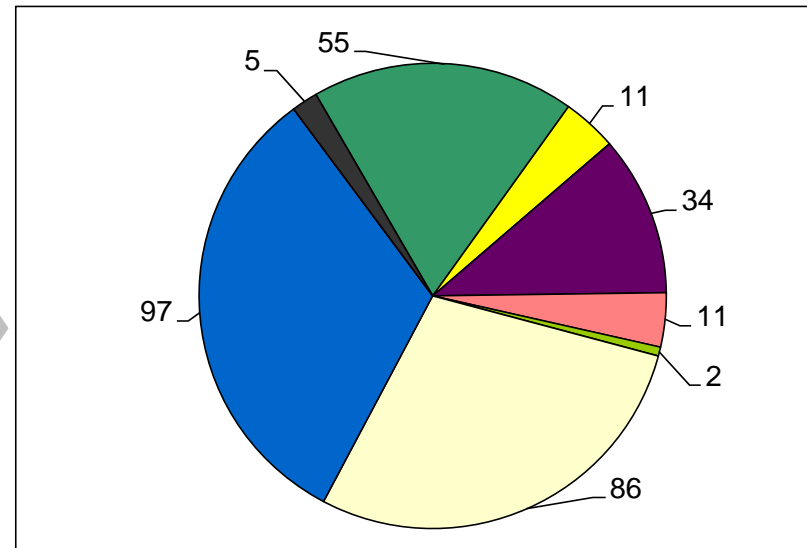
Total Water Withdrawals
(ground and surface) from the Delaware River Basin: 8,361 mgd



Major **Exports** from the Delaware River Basin: 665 mgd

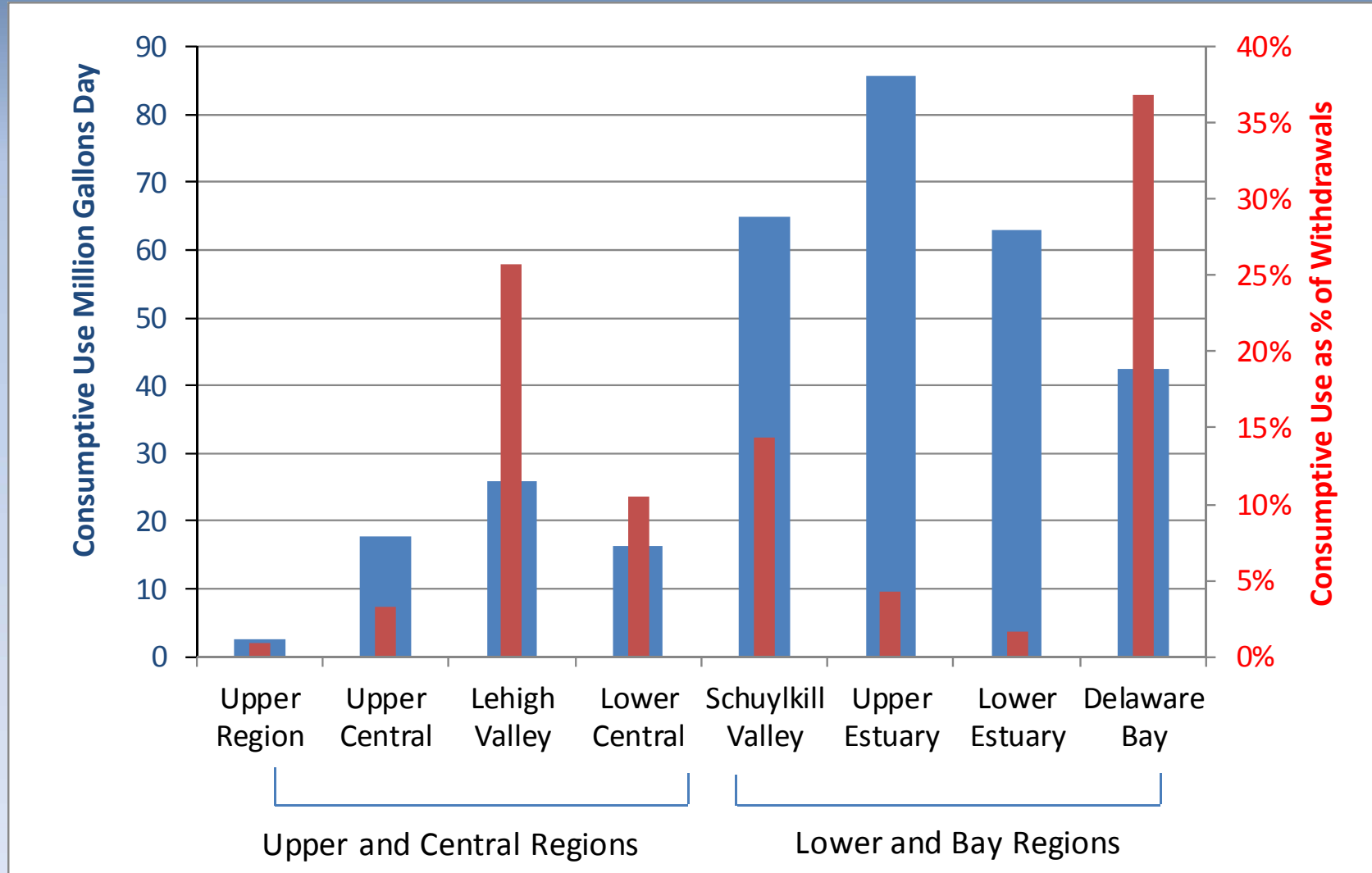


Consumptive Use in the Delaware River Basin: 302 mgd



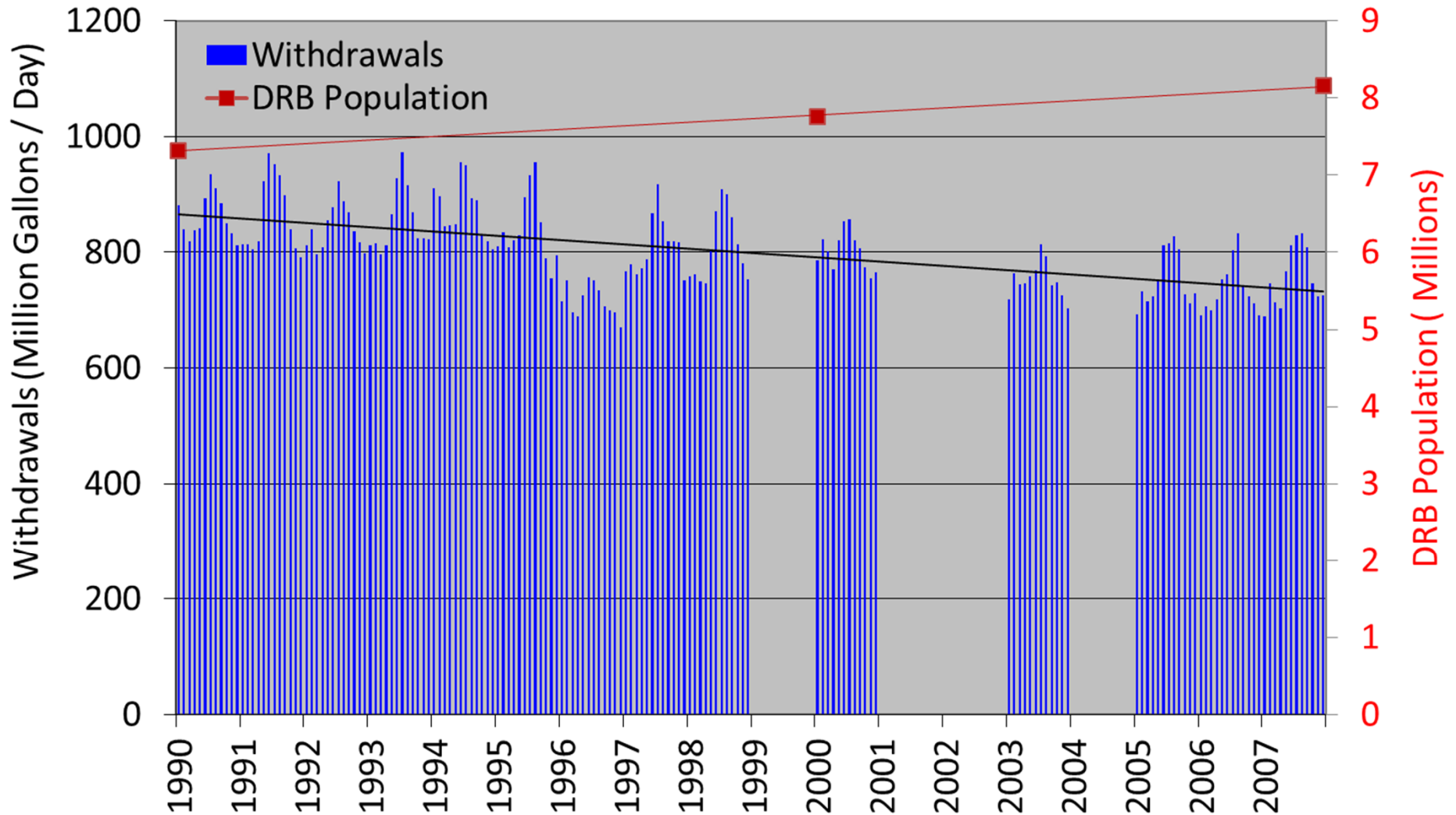
Pie chart values in mgd
(million gallons per day)

Consumptive Use by Basin Region

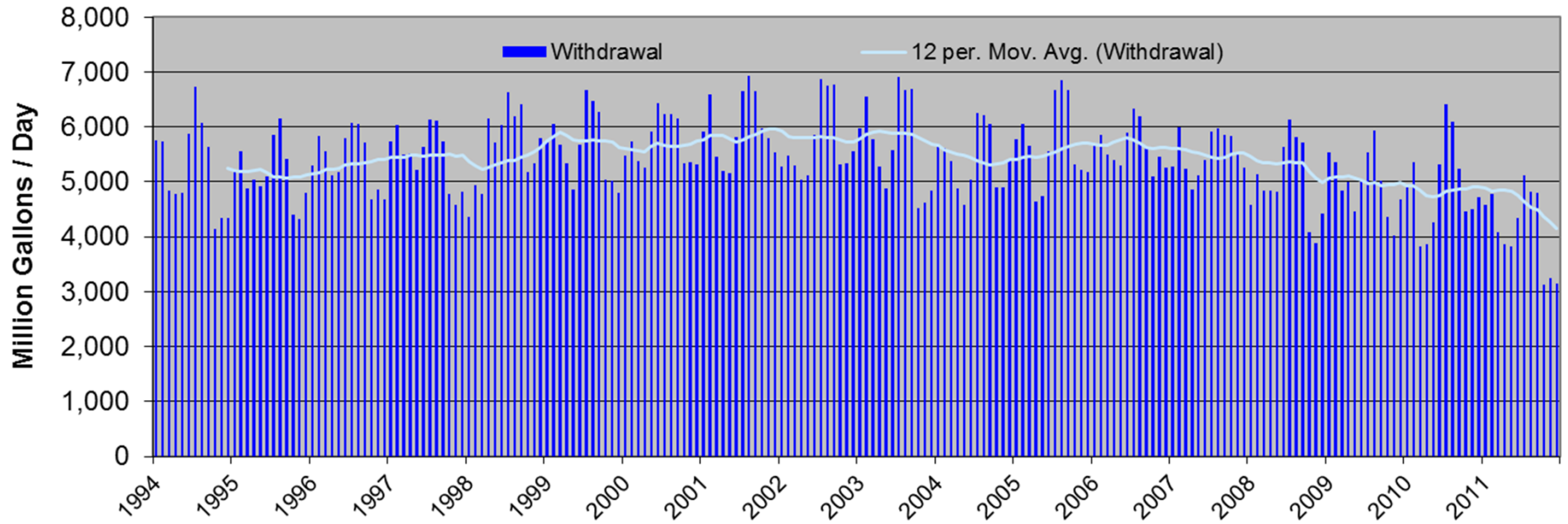


Aggregate Withdrawals of 40 Public Water Supply Systems in the DRB

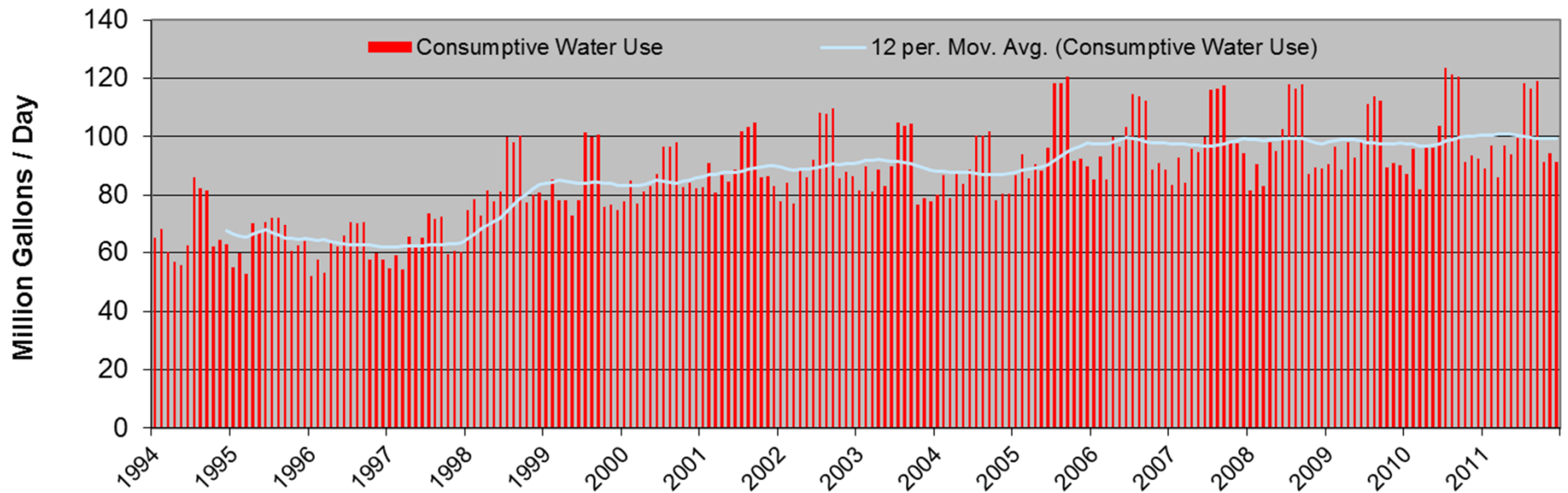
Trendlines 1990 - 2007: Approximately **15% decline** in withdrawals
Approximately **13% increase** in population



Total Withdrawals for Thermoelectric Facilities in the DRB



Total Consumptive Use for Thermoelectric Facilities in the DRB



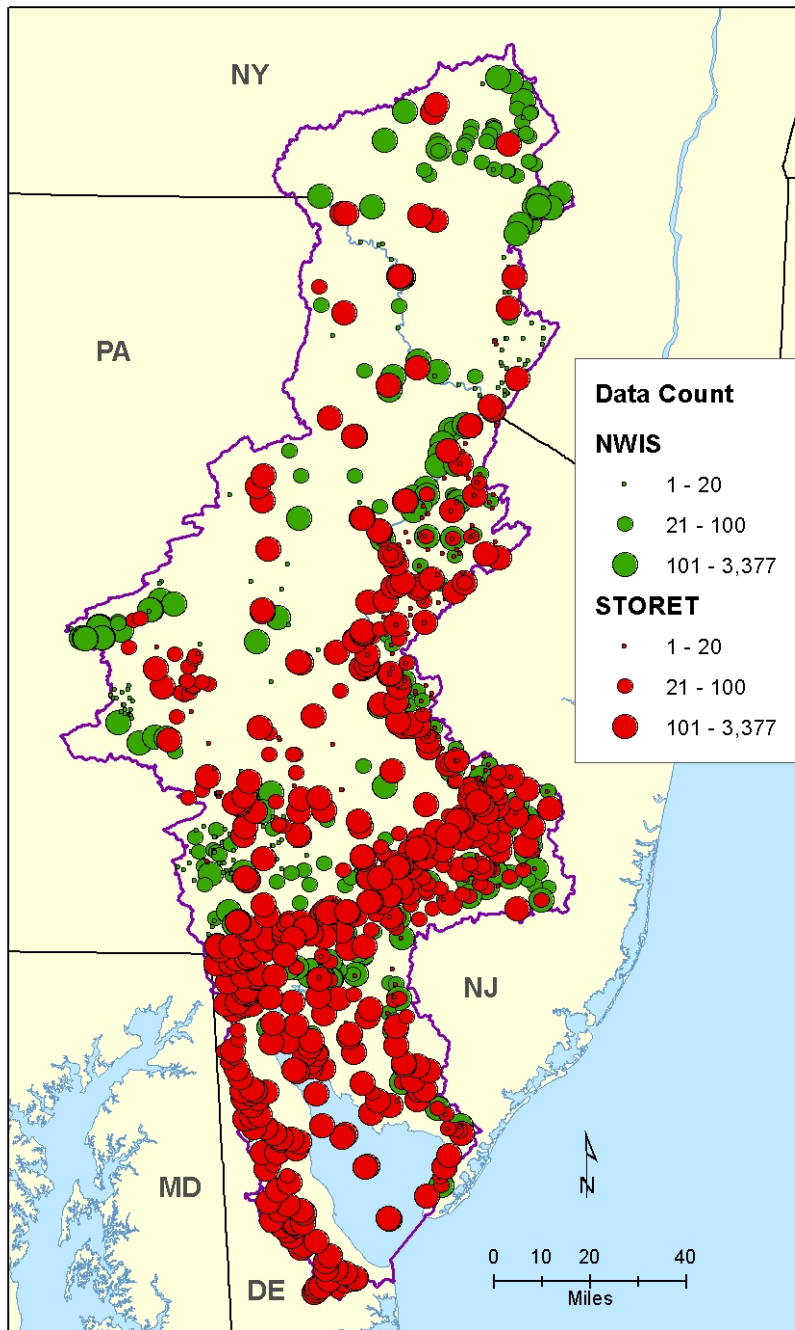
Water Quality Primary Indicators

Tidal and Non-Tidal Indicators

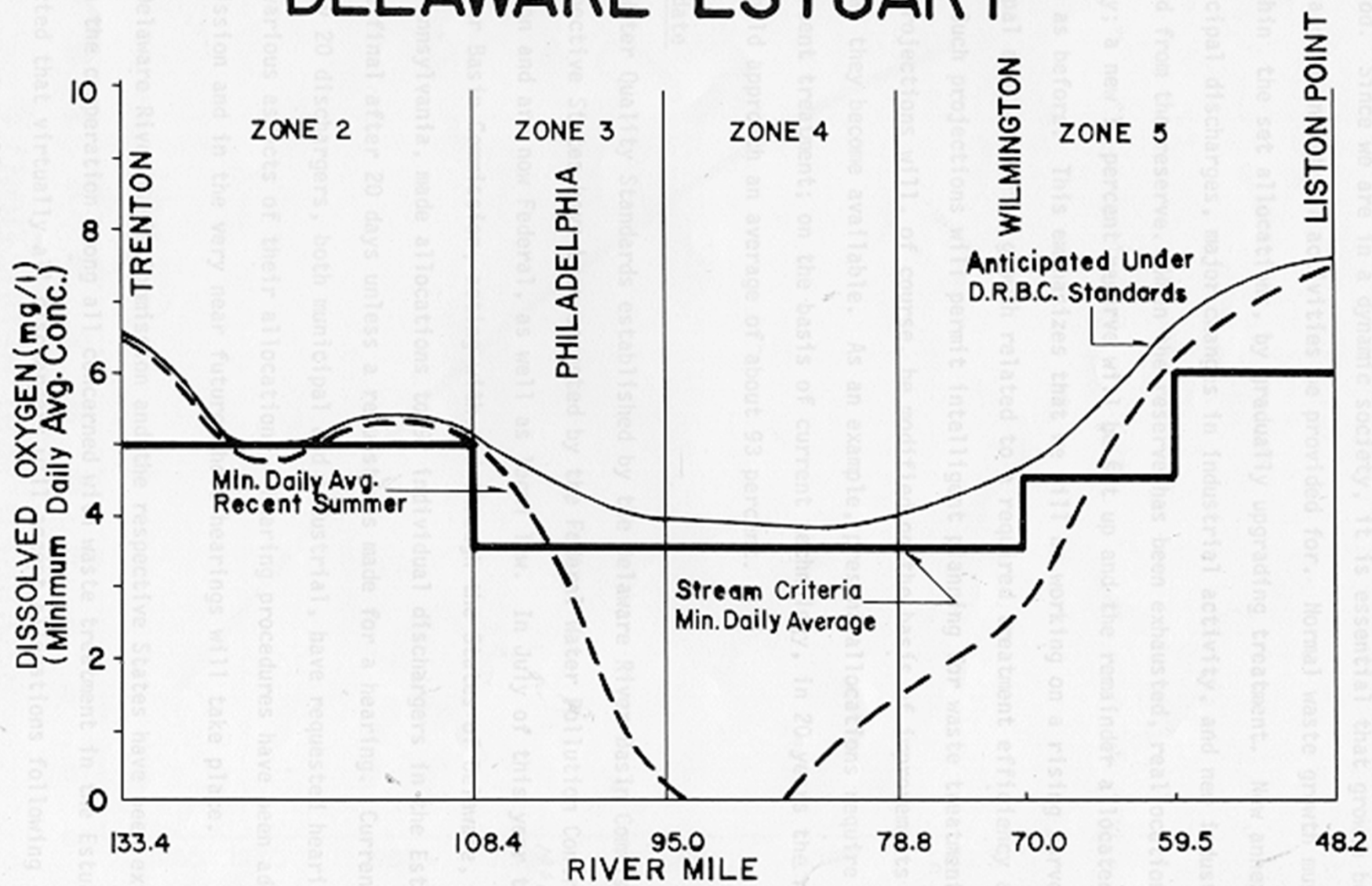
- 1 – Dissolved Oxygen**
- 2 – Nutrients
- 3 – Contaminants
- 4 – Fish Contaminant Levels
- 5 – Salinity
- 6 – pH
- 7 – Temperature**
- 8 – Emerging Contaminants

Data Sources

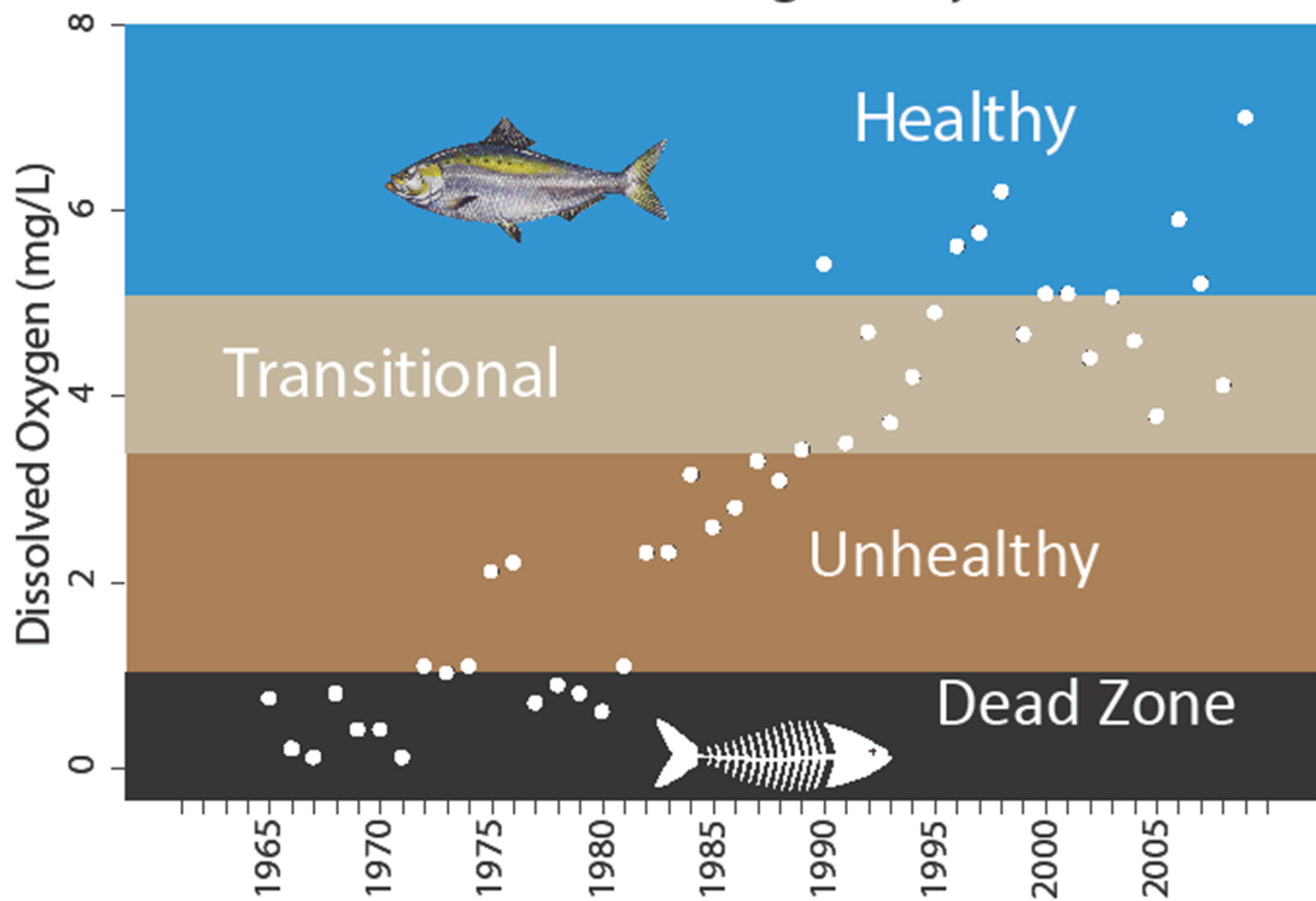
- 2000—2010 Data window for current conditions
- Primarily STORET and NWIS (discrete observations)
- Over 400,000 discrete observations
- *Also pulled full period of record for continuous monitors*



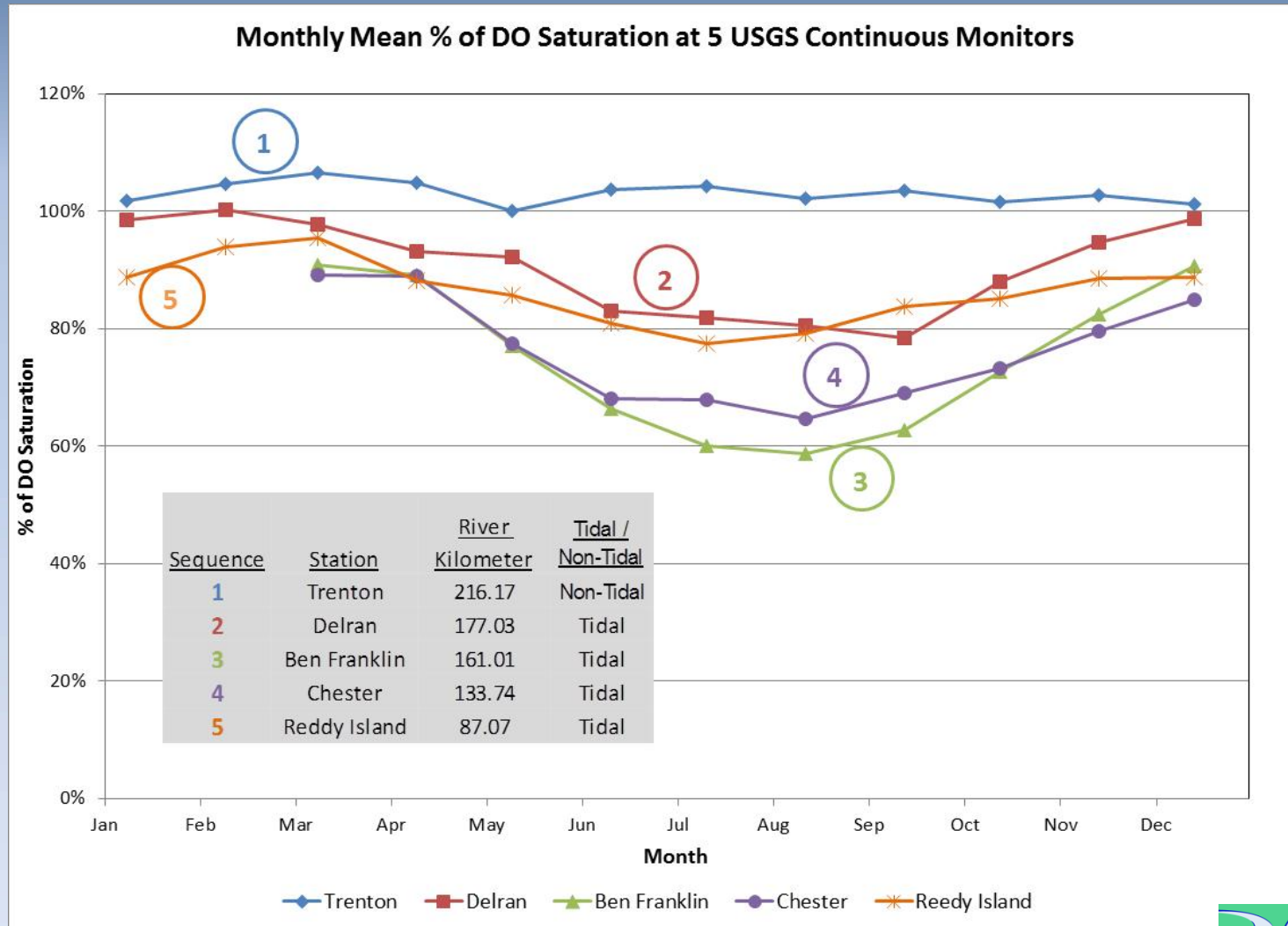
DISSOLVED OXYGEN PROFILES DELAWARE ESTUARY



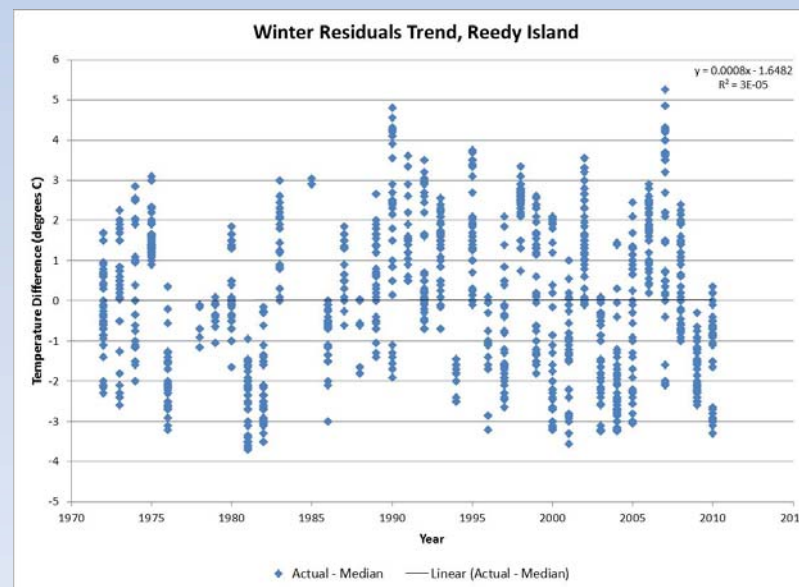
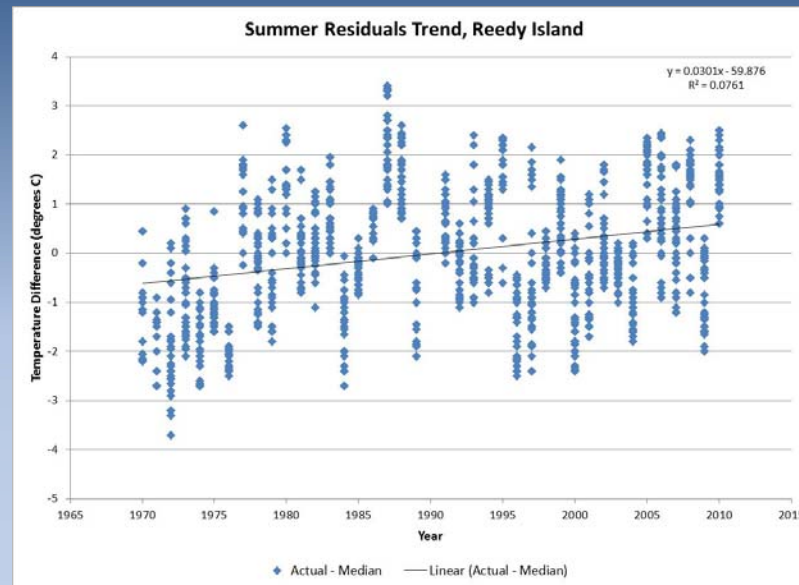
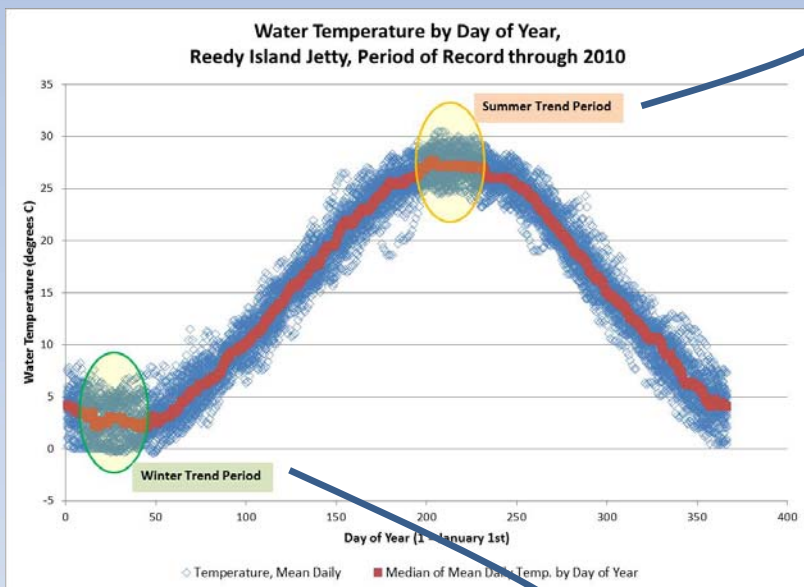
Ben Franklin Bridge - July Data



DO Saturation



Trends in Summer versus Winter Water Temperature?



Drivers of Change

- Population change and distribution
- Energy generation
- Natural gas development in the headwaters
- Ecological flow protection
- Point and non-point pollution
- Flood protection
- Climate change (sea level rise, increasing temperature, and change in precipitation patterns)

QUESTIONS?



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Potential Coalition Common Ground Collaboration Opportunities

- Tidal Recreation Area Designation
- Urban Waters Federal Partnership
- Riparian Corridor Protection Strategy (*Making Space for the River*)
- Cumulative Impact Assessment
- Outstanding Natural Resources Value next steps
- Shared Vision Planning process (DRBC Sustainable Water Resource 2060 strategy)
- Decision Support Tools to facilitate collaboration

Example Decision Support Tools

- SAN Land Prioritization Tool
- USGS Ecoflow DSS
- DRBC HVWRL Tool
- TNC Conservation Tool
- Mid-Atlantic Ocean Data Portal