



Delaware River Basin WaterSMART Focus Area Study

* Part of the  Initiative

The WaterSMART logo consists of a blue water drop icon with white wavy lines inside, positioned to the left of the text 'water:' in a light blue font and 'SMART' in a bold green font.

Presented by: Eric J. Evenson

NJ Water Monitoring Council Meeting

September 21, 2011

Our objective in WaterSMART:

To place technical information and tools in the hands of stakeholders, allowing them to answer two primary questions about water availability:

Does the Nation have enough freshwater to meet both human and ecological needs?

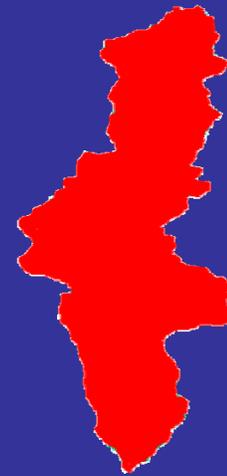
Will this water be present to meet future needs?

Report to Congress – Section 9508 (d) of P.L. 111-11:

1. The current availability of water resources in the United States,
2. Significant trends affecting water availability, including documented or projected impacts as a result of global climate change,
3. The withdrawal and use of surface water and groundwater by various sectors,
4. Significant trends relating to each water use sector, including significant changes in water use due to the development of new energy supplies,
5. **Significant water use conflicts or shortages that have occurred or are occurring,**
6. **Each factor that has caused, or is causing, a conflict or shortage.**

Focused Water Availability Assessments

USGS created the concept of a “Geographic Focus Area Study”; a three year, \$1.5 M assessment of water availability in a specific basin, to answer Congress’ questions



Three basins were selected:

The Apalachicola, Chattahoochee, Flint Rivers

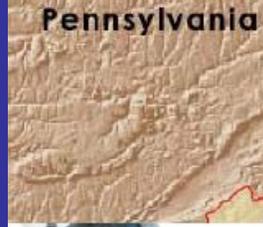
The Colorado River

The Delaware River

Delaware River Basin – The basin is the subject of the largest inter-basin withdrawal of water east of the Mississippi River and provides water to over 15 million people, more than five percent of the Nation's population. Two Supreme Court decrees and coordination by an interstate river basin commission including the States of Delaware, New Jersey, New York, and Pennsylvania, are just part of the history of allocating scarce resources in the basin. In the upper portions of the basin, concerns over the effects of new natural gas development and the freshwater requirements for a recently-discovered endangered mussel species have added new complexities to managing water resources in the basin.

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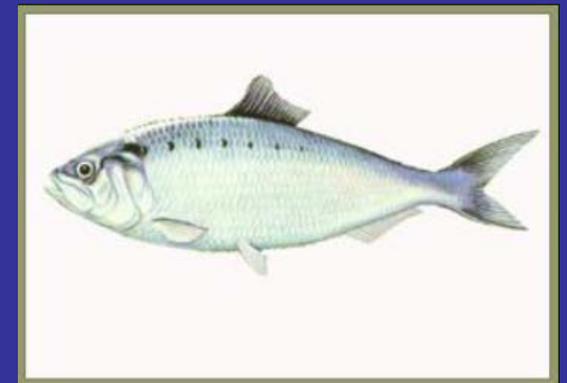
Delaware

Water supply for
about 16 million
people

Four States +
NYC Supreme
Court Decrees
1931 / 1954

DBRC 1961

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Climate Change
Sea Level Rise

**More Frequent and
intense storms**

Population Growth
Increased Demand

Land-use Change

**Increased load on
the watershed**

**Water Quality
Degradation**

Workplan Writing Team

- **Bill Coon – Hydrologic Modeling**
- **Jeff Fisher – Water Availability Stressors**
- **Susan Hutson – Water Use**
- **Marla Stuckey – Ecological / Sustainable Flows**



Stakeholder Meeting



Stakeholders Invited to provide written input

▲ About 60 invitations went out

- ❑ Federal Agencies (USACE, USFWS, NPS, USEPA, NWS, DRM)
- ❑ State Agencies (DNREC, PADEP, NJDEP, NYDEC, PA Fish & Boat, NJGS, NYGS, PAGES, DEGS, etc.)
- ❑ Local Agencies (NYCDEP, Philadelphia Water, Wilmington, Camden, Trenton, Chester Co., etc.)
- ❑ Academia (Penn State, Univ. Del., Columbia, Rutgers, Cornell)
- ❑ Others (DRBC, TNC, TU, Riverkeeper, Del. Estuary, UDC, Water Resources Assoc. of DRB, etc.)

Written Responses Received

▲ 17 responses so far

▲ DRBC, Del Estuary, DNREC, DRM, NPS, NWS, NYCDEP, NYSDEC, NYSWRI, PADEP, Phil. Water, Rutgers, TNC, Univ. Del., Columbia, USACE, & WRADRB

Response Grouping

▲ WATER USE

- ❑ Develop Hydrologic Budget
- ❑ Identify Data Gaps
- ❑ Determine Availability, Uses, Needs, Consumption, Reservoir Operations (ecological needs, thermo-electric cooling, etc.)

▲ HYDROLOGIC MODELING (as tool to address)

- ❑ Impacts of population growth & land-use change
- ❑ Climate change / sea level rise
- ❑ Ecological water needs / flow alteration

Response Grouping

▲ WATER AVAILABILITY STRESSORS

- Climate change, sea level rise, saltwater encroachment
 - ▲ Effect on water supply
 - ▲ Effect on estuary, wetlands, fisheries
 - ▲ Effect on coastal aquifers
- Water quality, including
 - ▲ Nutrient loading and sources
 - ▲ Marcellus Shale issues

Stakeholder Meeting

September 7-8, 2011 Shawnee-On-Delaware, PA



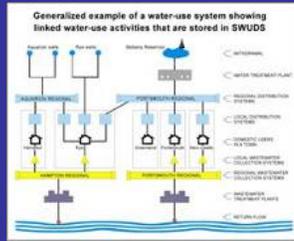
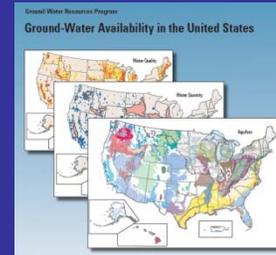
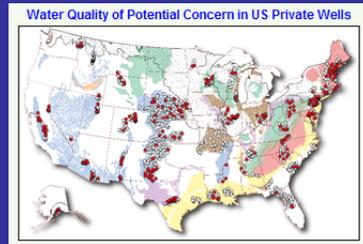
- ▲ Intro
- ▲ Water Use
presentation and stakeholder panel
- ▲ Water Availability Stressors

Lunch Speaker: Bob Tudor – Ad Hoc Committee Perspective

- ▲ Ecological Water Needs
- ▲ Hydrologic Modeling
- ▲ **Day 2** Breakouts on above four topics
- ▲ *Geology and Biology Field Trips*



Focused Water Availability Assessments



Water Quality

Groundwater Resources

Water Use

Surface Water Trends, Precipitation, etc



Global Change

State, Local, Regional Stakeholder Involvement



Defined Technical Questions to be Answered

The objective is to place the information and tools into stakeholders hands to answer the questions they are facing about water availability.



Eric J Evenson
Water Census Coordinator
U.S. Geological Survey
810 Bear Tavern Road, Suite 206
Trenton, New Jersey 08628

609-771-3904
eevenson@usgs.gov