

Susquehanna River Basin Commission Draft Low Flow Monitoring Program



June 30, 2009
Water Quality Advisory Committee

Water Resource Management

- Coordination
- Planning
- Regulatory Function
 - Surface Water
 - Ground Water
 - Consumptive Use
 - Diversions

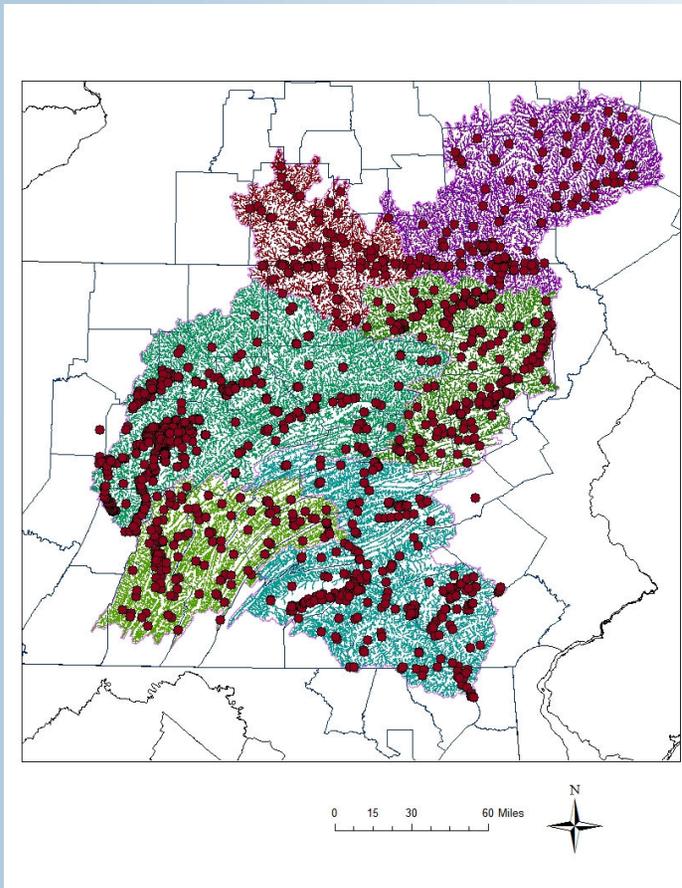


Low Flow Mitigation Planning

- Planning Reports
- Cowanesque & Curwensville Lakes
- Barnes & Tucker Abandoned Mine Pool
- Whitney Point



Instream Flow and Related Studies



- Monitoring data for The Nature Conservancy study
 - Development of instream flow criteria
- Partnering with TNC and USACE for Ecosystem Flows Study
 - Basin-wide goals for river flow management
- Smallmouth bass study

Low Flow Impacts on Biota

- Reduction in habitat availability
 - Velocity, depth, wetted width
 - Sedimentation rates
- Reduction in food production
- Changes in community structure, behavior, and interactions
- Water quality impacts
 - Temperature, dissolved oxygen, pH, nutrients, conductivity
- Anthropogenic vs. natural changes
- Need for information on baseline conditions
- Systematic, targeted monitoring

Goal of the Draft Low Flow Monitoring Program

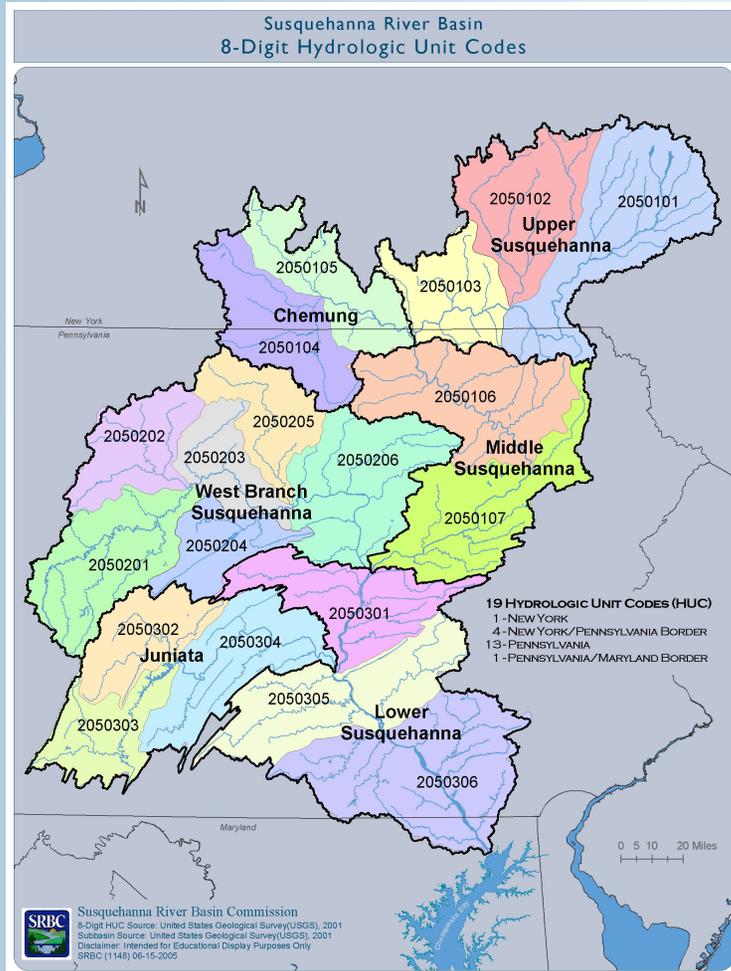
- Complement the Susquehanna Ecosystem Flows Study
- Provide data to further refine management decisions
- Document actual instream effects associated with low flow conditions



Conceptual Design

- Sentinel station system
 - HUC-8
 - 19 stations
 - Consistent with pour-points in the low-flow management study
- Pilot project in the Juniata Subbasin
 - Fewest number of permitted withdrawals
 - Most unregulated system
 - 25 stations
- Yearly baseflow data collection
- Drought conditions, when occur
- Possible addition of subset of smaller streams, based on outcomes of pilot study
- Time frame for implementation

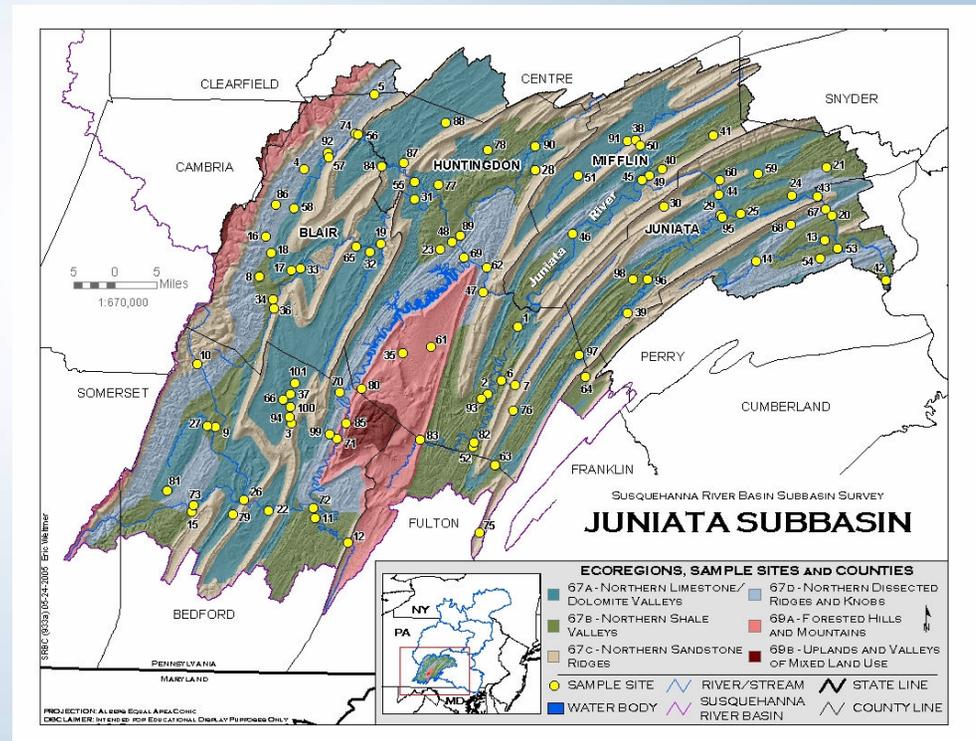
Sentinel Stations



- Increased time and expense associated with monitoring larger streams.
- Located near USGS stream gaging stations
- Targeted riffle sections
- Macroinvertebrate sampling
- Periphyton data
- Water quality data
- Freshwater native mussels
- Photographs

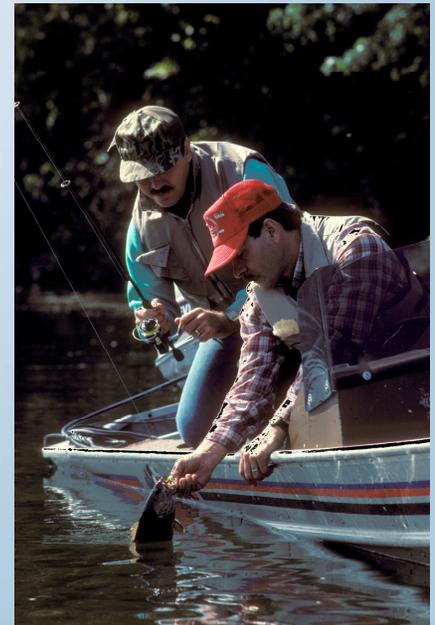
Pilot Study - Juniata Subbasin

- 25 stations
 - 5 mainstem
 - 20 tributaries
- USGS gaging stations or direct discharge measurement
- Macroinvertebrate
- Periphyton
- Water Quality
- Electrofishing



Recreational Impacts

- Impacts on recreational pursuits
 - Kayaking, fishing, canoeing, swimming, wildlife observation
- Develop a questionnaire to post on Commission's website
- Press release following drought declaration
- Possibly partner with other entities



Reporting

- Yearly report on baseflow conditions
- More extensive reporting during low flow years
 - Detailing differences between baseflow and low flow conditions
 - Biotic and abiotic features
- Management decisions to mitigate low flow effects
- Management decisions regarding pass-by flows and surface water withdrawals

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QUESTIONS?

David W. Heicher, Chief

Watershed Assessment and
Protection Division

dheicher@srbc.net

Jennifer Hoffman

Chief, Monitoring &
Assessment Section

jhoffman@srbc.net