

SUSQUEHANNA
RIVER BASIN
COMMISSION

2008
**Water
Resources
Program**

Protecting
Your Watershed
for Today and
Tomorrow

MARCH 2008

SUSQUEHANNA RIVER BASIN COMMISSION
2008 Water Resources Program

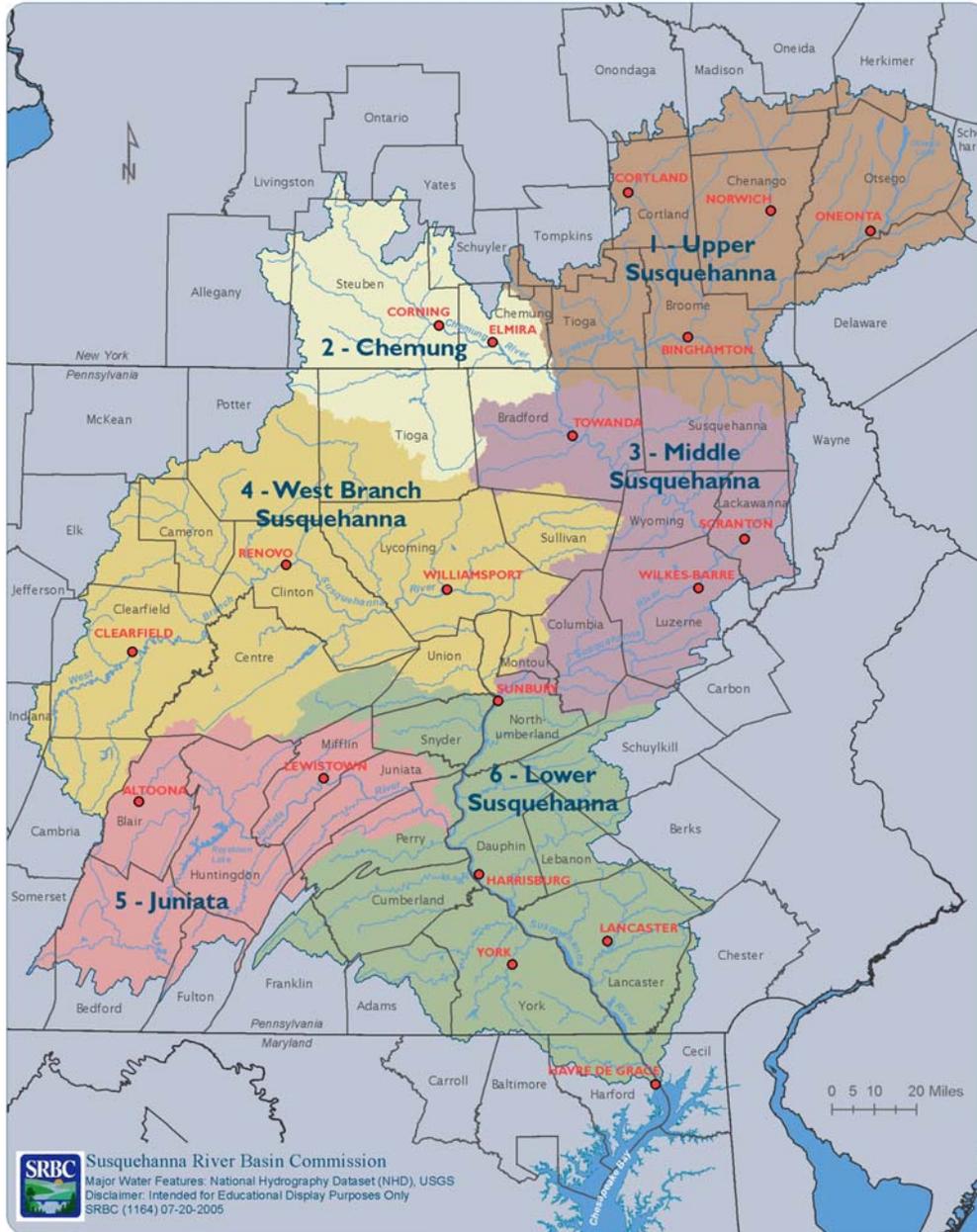
March 13, 2008



Section 14.2 of the Susquehanna River Basin Compact (Compact), P.L. 91-575 states that “the Commission will annually adopt a water resources program, based upon the comprehensive plan, consisting of the projects and facilities which the Commission proposes to be undertaken by the Commission and by other authorized governmental and private agencies, organizations, and persons during the ensuing six years or such other reasonably foreseeable period as the Commission may determine.” Beyond this Compact requirement, there is a need to set forth in one concise document a listing of the programs and projects that will help meet the current problems and challenges of water resources management in the Susquehanna River Basin. The following programs and projects of the Susquehanna River Basin Commission (SRBC) and other water resource management agencies will constitute the Water Resources Program (WRP) of SRBC for 2008 to meet the water resources needs set forth in the Comprehensive Plan. The water resource needs are:

1. Coordination
2. Reduce Flood Damages and Provide Effective Disaster Recovery
3. Improve Water Quality
4. Mitigate Drought Impacts
5. Ensure Adequate Water Supply
6. Promote Economic Development
7. Protect and/or Restore Aquatic Ecosystems
8. Restore Migratory Fish
9. Manage Sediment
10. Preserve Cultural and Historical Heritage
11. Enhance Recreation
12. Facilitate Data Management and Use

Susquehanna River Basin SUBBASINS



Water Resource Need No. 1

COORDINATION

A. Susquehanna River Basin Commission (SRBC)

- 1. General Coordination** – Coordinate the water resource management efforts of state and federal agencies, local governments, and private interests, including through the following actions: (1) coordinating impaired waterbody listings, Total Maximum Daily Loads (TMDLs) and source water protection activities; (2) active participation in Pennsylvania’s Water Resources Planning Act 220 implementation; (3) revising existing coordination memorandum of understanding (MOU) with Pennsylvania and exploring MOU agreements with Maryland and New York to promote efficient use of resources and provide consistency in regulatory procedures and programs; and (4) seeking guidance from SRBC advisory committees on a range of water management issues.
- 2. Legislative Liaison** – Inform federal and state legislators of the activities, plans, and programs of SRBC and continue working with the Susquehanna River Basin Congressional Task Force, the Susquehanna Caucus in the Pennsylvania General Assembly, and legislators in Maryland and New York.
- 3. Promote Interstate Comity and Resolution of Conflicts** – Continue SRBC’s general Compact purpose of promoting interstate comity and resolution of conflicts, with particular focus on large electrical generation projects, including hydroelectric, nuclear and fossil fuel. Continue oversight of out-of-basin diversions from the Conowingo Pond, an interstate waterbody, and on efforts to resolve issues surrounding the diversion of water from Deer Creek by the City of Aberdeen.
- 4. Planning (SRBC Documents)** – Continue work on the following planning efforts: Comprehensive Plan (perform update), Water Resources Program (revise and update), internal strategic plans (implement divisional plans), SRBC Consumptive Use Mitigation Plan (implement as appropriate), SRBC Groundwater Management Plan for the basin (implement as appropriate), and the Conowingo Pond Management Plan (implement as appropriate).
- 5. Public Information and Education** – Continue to disseminate information through the web site, publications such as fact sheets and reports, and press releases.



Needs Statement:

Coordinate the planning and management of the water resources of the basin in accordance with the requirements of the Compact and the Comprehensive Plan, communicate with and listen to the concerns of the water use stakeholders and their elected representatives, educate the public about the water resources of the basin, and garner adequate financial resources to support both SRBC and other agency programs and projects for management of the basin's water resources.

B. Federal Programs and Projects

1. Environmental Protection Agency (EPA):

- a. Continue to update monitoring strategy (work is largely completed by SRBC).
- b. Actively participate in and contribute to a select set of Chesapeake Bay Program (CBP) committees: Water Quality Steering Committee, Monitoring and Analysis Subcommittee (MASC), MASC's Nontidal Water Quality Monitoring Workgroup and Nutrient Subcommittee's Sediment Workgroup; clarify relative SRBC/EPA roles on these committees.
- c. Explore the possibility of developing a multi-jurisdictional partnership for the protection of source water, similar to the Potomac Drinking Water Protection Partnership and the Schuylkill Action Network.

2. Federal Emergency Management Agency (FEMA):

- a. Region II – Participate on focus groups and in meetings sponsored by SRBC and other state, local and regional groups that address flooding, flood damage and mitigation.
- b. Region III – Plan for and manage various water resources activities in the Susquehanna River Basin, in conjunction with numerous partners including SRBC, USACE, USGS, NRCS, USFWS, state and local emergency management agencies, etc.

3. National Park Service (NPS):

- a. Continue to coordinate – through Chesapeake NEMO – education, technical assistance and link financial assistance to: (1) help communities foster well-planned growth, preserve water quality and protect natural areas; and (2) build commitment and capacity for applying natural resource-based planning as a core underpinning of local land use decision-making.
- b. Participate on the Implementation Committee of the Deer Creek Watershed Restoration Action Strategy to facilitate the implementation of recommended actions. Aid Harford County planners in leveraging assistance from other organizations.
- c. Support the completion of a community-based watershed management plan for Carr's Creek and Willow Brook coordinated by the Sidney Center Improvement Group, a newly established non-profit organization.

4. National Weather Service (NWS):

Provide program management for the Susquehanna Flood Forecast and Warning System (SFFWS). Coordinate with SRBC, USGS, and other federal and state partners. Work with federal and state partners to provide recommendations and guidance to communities devastated by the catastrophic June 2006 floods. Do field office coordination with local emergency management agencies and media outlets. Provide education and outreach to promote flood loss reduction. Conduct partnered Flood Inundation Mapping coordination meetings.

5. Natural Resources Conservation Service (NRCS):

Continue to support the objectives of SRBC and the Chesapeake Bay Program by participating in meetings with and providing technical and program support in partnership with federal/state/local government, county conservation districts, watershed groups and private landowners through NRCS Farm Bill Programs, Watershed Program, Emergency Watershed Program, Resource Conservation and Development Program, Soil Survey, National Resource Inventory and Conservation Technical Assistance.

6. Office of Surface Mining (OSM):

Continue to support the objectives of SRBC by participating in meetings and providing technical and program support in partnership with federal/state of Pennsylvania/local government and watershed groups in which mine drainage and abandoned mine land reclamation issues are of concern. Participate with SRBC on the West Branch of the Susquehanna River Task Force in support of Pennsylvania's goal to restore streams impacted by coal mine drainage, and build the recreational and economic opportunities in the region.

7. U.S. Army Corps of Engineers (USACE):

Continue to partner with local governments, agencies, and stakeholders to initiate and execute investigations and projects within USACE authorities and jurisdiction. Continue membership and responsibilities on SRBC, CBP, and other such groups. Coordinate regularly with federal agencies to provide input and feedback as the federal representative to SRBC.

8. U.S. Fish and Wildlife Service (USFWS):

Promote northeast regional water supply and demand analysis and alternatives to address needs and manage growth. Coordinate with state governments to work toward adoption of "smart-growth" land use planning techniques. Coordinate with state and federal Susquehanna River Basin partners and SRBC to gather, develop, analyze and disseminate information on the impacts of global climate change on the Susquehanna River Basin water resources and uses, with particular attention to fish and wildlife impacts.

9. U.S. Geological Survey (USGS):

- a. Participate in technical advisory groups of other federal and state agencies involved in planning and managing water resources.
- b. Actively work on parts of the Pennsylvania State Water Plan update and provide technical assistance as needed.
- c. Manage and operate, throughout the basin, networks of stream gages and groundwater level recorders, serving data real time on the web and maintain historical records.

10. U.S. Nuclear Regulatory Commission (NRC):

Continue to coordinate with SRBC regarding licensing actions at nuclear plants located on the Susquehanna River that may impact water use. [Plants that currently withdraw water from the Susquehanna River include: Susquehanna Steam Electric Station, Units 1 and 2; Three Mile Island Unit 1; and Peach Bottom Atomic Power Station, Units 2 and 3. Three

Mile Island will undergo license renewal review beginning in January 2008, however water use is not expected to change as a result of this licensing action. Susquehanna Steam Electric Station will implement an extended power uprate, if the NRC grants the license amendment; SRBC has already revised the plant's water use permit to accommodate the proposed uprate. PPL has also submitted to the NRC letters of intent to file a combined license application for a third reactor at the Susquehanna Steam Electric Station site. The NRC Office of New Reactors would coordinate with SRBC to evaluate the water use impacts of an additional reactor.]

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation (NYSDEC)** – Coordinate with local water resource professionals through participation in county water quality coordinating committees, the Upper Susquehanna Coalition, and the New York State Association of Regional Councils.
- b. **Upper Susquehanna Coalition (USC)** – Provide a mechanism for Soil and Water Conservation Districts and other partners in the Upper Susquehanna Region to cooperatively promote, and implement on a watershed basis, the conservation and improvement of natural resources. Complete and support an application for designation of the Upper Susquehanna and Chemung Rivers as American Heritage Rivers. Conduct public outreach and education about the basin's water resources.
- c. **Regional Planning Boards** – Assist NYSDEC with local delivery of statewide water resource programs (stormwater management, floodplain management, water quality monitoring program, watershed management planning, etc.). Foster a regional approach to water resource management and coordination among neighboring communities. Work closely with private and public local, regional, and state parties involved in water resource protection. Conduct training and outreach on stormwater management and other water resource issues.
- d. **County Water Quality Coordinating Committees** – Provide a forum for local coordination of water resource programs among local agencies, watershed associations, and other interested parties.

2. Pennsylvania:

- a. **Department of Conservation and Natural Resources (DCNR):**

Bureau of State Parks – Continue to coordinate the *Watershed Education* program, which is an educational, watershed-based, interdisciplinary program for students in grades 6-12, promoting classroom and field research, hands-on ecological investigations, networking, partnerships, stewardship and community service in an effort to enhance environmental education among the citizenry. Coordinate with local stakeholders and outfitters to offer recreational opportunities to visitors as part of the *Get Outdoors Pennsylvania* initiative.

b. **Department of Environmental Protection (PADEP):**

Bureau of Watershed Management – Continue the implementation of the Water Resources Planning Act (Act 220 of 2002), with emphasis on drafting the Pennsylvania State Water Plan and coordination of that effort with SRBC’s activities such as water budget analysis of watersheds, water conservation, and technical assistance to communities.

Bureau of Waterways Engineering – Continue to partner with local governments and agencies to execute investigations and projects, including flood protection, map modernization, and levee certification efforts.

c. **Fish and Boat Commission (PFBC)** – Actively work on State Water Plan updates and implementation. Participate in technical advisory groups.

3. **Maryland:**

a. **Department of the Environment (MDE):**

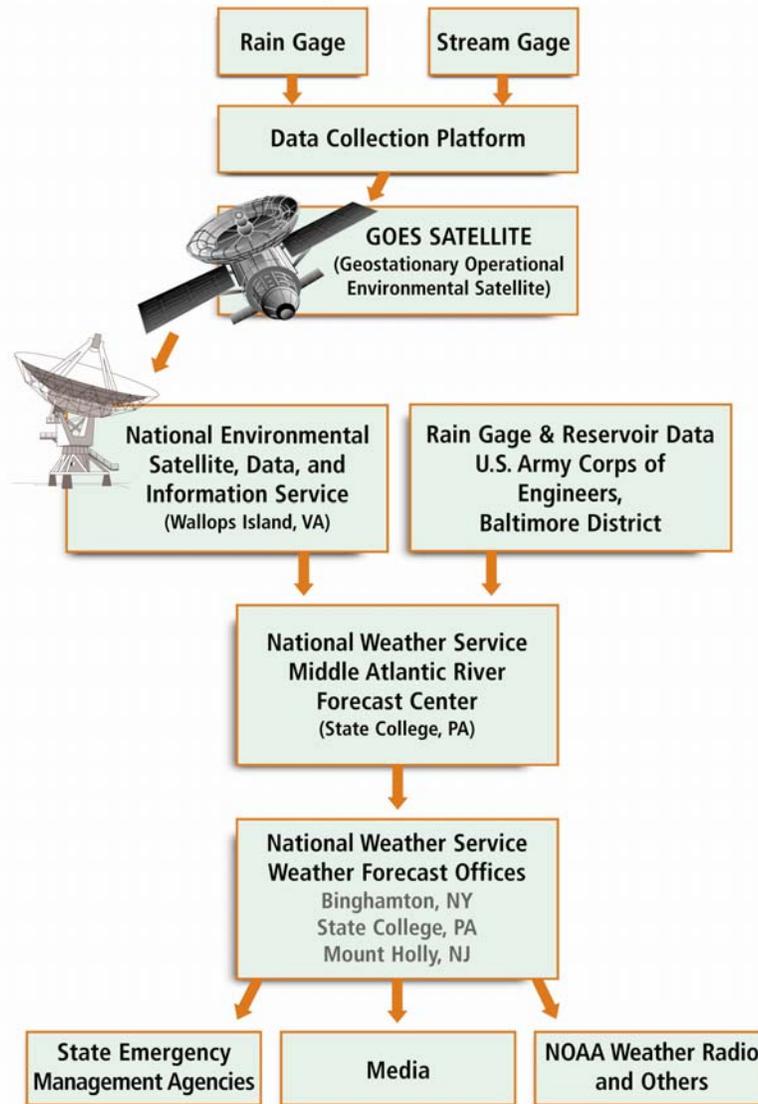
Water Supply Program – Continue working with the Governor’s Advisory Committee on the Management and Protection of the State’s Water Resources to evaluate existing programs and recommend new or modified programs to better protect and manage water resources. Provide guidance and technical assistance to local governments to assist them in implementing requirements of 2006 legislation that requires local governments to include a water resources element in their comprehensive plans by October 2009.

b. **Department of Natural Resources (MDNR)** – Continue to work through the Upper Western Tributary Team, partially located within the Susquehanna River Basin, to develop a basin-level implementation plan that will identify local actions to improve water quality. [This plan will address the issues in the Maryland 2007 Tributary Strategy Statewide Implementation Plan that identifies actions to be taken by the state in the next 2- and 5-year timeframes that will help achieve the nutrient reduction goals established in the *Chesapeake 2000 Agreement* and restore living resources in the Bay and its tributaries.]

Coordinate state agency review of SRBC’s 2008 update of its *Comprehensive Plan for Management and Development of Water Resources of the Susquehanna River Basin* with MDE through SRBC’s commissioners and committees (e.g., Water Quality Advisory Committee).

Susquehanna Flood Forecast and Warning System

U.S. Geological Survey – NY, PA, and MD Water Science Centers



Water Resource Need No. 2

REDUCE FLOOD DAMAGES AND PROVIDE EFFECTIVE DISASTER RECOVERY



Needs Statement:

Prevent the loss of life and significantly reduce future damages from floods within the basin through an integrated system of structural and nonstructural flood damage reduction measures. Provide a comprehensive and effective program for disaster recovery efforts following major floods.

A. Susquehanna River Basin Commission

- 1. Susquehanna Flood Forecast and Warning System (SFFWS)** – Enhance the effectiveness of the SFFWS by coordinating the Interagency Committee’s efforts, seeking adequate federal appropriations, continuing outreach and education activities, and assisting local governments. Participate in local flood mitigation projects. Maintain and update the system web site. Serve as a liaison between NWS and local flood managers to gather ideas and incorporate local input into the improvement of flood forecasts and warnings through partnerships related to Advanced Hydrologic Prediction Services (AHPS).
- 2. Flood Mitigation** – Help reduce flood damages by coordinating information with local interests on successful flood-related programs and by providing technical assistance and outreach to include: (1) training on the use of flood inundation maps; (2) assistance in developing local flood alert systems; and (3) information on floodplain planning and management techniques. Support radar velocity technology as an additional cost-effective method of stream gaging.

B. Federal Programs and Projects

1. Environmental Protection Agency:

- a. Continue involvement in drinking water programs through funding of state operator certification and emergency planning programs.
- b. Actively participate in emergency planning programs and support activities to strengthen disaster recovery of waste water and/or drinking water facilities.
- c. Continue reducing runoff through the implementation of Stormwater Phase I and II programs, which control discharge of stormwater from urbanized areas (MS4s) and all new development that impacts more than one acre. Continue addressing the outstanding need in stormwater management for modeling that would be used to assess the criteria used by states and local governments in the issuance of stormwater permits (there is a concern that the criteria in current use allow excessive runoff).

2. Federal Emergency Management Agency:

- a. Monitor communities, under the National Flood Insurance Program, for sound floodplain management and produce Flood Insurance Rate Maps to identify high-hazard flood areas.
- b. Coordinate efforts to reduce future damages from floods via a number of pre- and post-disaster mitigation grants. [Administration of these grants is conducted in coordination with various state emergency management agencies and local government sponsors.]
- c. Coordinate efforts to reduce future damages from floods via the Map Modernization Program that will begin efforts to digitize all of the flood insurance rate maps by 2008.
- d. Administer the President's Disaster Relief Act after Presidentially declared disasters; provide grant funds to the public and private sectors to repair eligible damages and mitigate future damage.
- e. Serve as the lead federal agency for disaster recovery efforts. Coordinate these efforts with other stakeholders via the National Response Plan (NRP).
- f. Complete a restudy of selected reaches of the Susquehanna, Unadilla, and Chenango Rivers for incorporation into county-wide Digital Flood Insurance Rate Maps (DFIRMs) for Broome, Tioga, Chenango and Otsego Counties in New York.

3. Federal Energy Regulatory Commission (FERC):

Continue to require FERC-licensed project dam owners to update and maintain Emergency Action Plans (under Part 12 of the FERC regulations) to warn upstream and downstream interests of potential uncontrolled releases due to a dam safety issue and also to warn of flood releases during spillway gate operations.

4. National Park Service:

- a. Support actions recommended in the Deer Creek Watershed Restoration Action Strategy that will strengthen implementation of measures for floodplain protection and riparian buffer development in Deer Creek Watershed Restoration Action Strategy.

- b. Assist with the preparation of a community-based watershed management plan for Carr's Creek and Willow Brook that will guide the restoration of extensive flood damage caused by two major flood events in 2006. The watershed plan will include a flood management component to reduce the likelihood of future floods.

5. National Weather Service:

- a. Provide flood forecast and warning services (Middle Atlantic River Forecast Center, State College, Binghamton, and Mount Holly).
- b. Collect and disseminate hydromet information (precipitation, river, temperature, snow).
- c. Provide enhanced flood forecast services (flood forecast mapping, short-term probability forecasts, snow information) in cooperation with SFFWS partners.
- d. Provide recommendations and guidance, in cooperation with other federal and state partners, to communities devastated by the catastrophic June 2006 floods.

Future Actions: Develop, in cooperation with SFFWS partners, sustainable, high-resolution observational network (including stream and rain gages, soil moisture, and evaporation sensors). Develop gridded data network over Susquehanna watershed. Improve the precision and accuracy of Flash Flood Guidance (FFG) generated by development of a prototype gridded FFG system. Provide high-resolution flash flood forecasts. Develop, in cooperation with partners, new forecast points and flood forecast maps for priority damage locations in the basin. Develop a strategy to deploy inundation maps in the basin, leveraging the partnerships established through the Water Resources Program.

6. Natural Resources Conservation Service:

- a. Continue to ensure proper local operation and maintenance of NRCS-assisted flood control dams and other structures in the following watershed projects:

Maryland: Little Deer Creek

New York: Brandywine Creek, Brixus Creek, Bulkley Creek, Clark's Creek, Dean Creek, Finch Hollow Creek, Genegantslet Creek, Hoffman Creek, Jackson Creek, Little Choconut Creek, Millbrook Creek, Nanticoke Creek, Newtown Creek, Patterson Creek, and Trout Brook.

Pennsylvania: Briar Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), and North Fork Cowanesque River.

- b. Continue assistance for rehabilitation of flood control dams for the following watershed projects:

New York: Hoffman Creek, Jackson Creek, and Little Choconut Creek.

Pennsylvania: North Fork Cowanesque River (secure permits and local matching funds, begin construction in 2008).

- c. Complete evaluation of alternatives for reducing flood damages along Bentley Creek, complete the Watershed Plan and Environmental Assessment in cooperation with local project sponsors and submit project for funding authorization under the NRCS Watershed Protection and Flood Prevention Program.

- d. Provide Watershed Program planning assistance to address other flood damage concerns at the request of local project sponsors.
- e. Complete implementation of stream restoration under the Emergency Watershed Program in Pennsylvania priority areas (areas where buildings, utilities and other critical infrastructure are imperiled by debris and unstable streams and stream banks as a result of the June 2006 floods).

7. Office of Surface Mining:

Coordinate with SRBC to promote and implement the goals of the Appalachian Regional Reforestation Initiative. [This initiative seeks to restore viable forest lands on active and abandoned coal mined lands, through the incorporation of land reclamation techniques shown effective in successful reforestation. This will help improve water quality and reduce flooding through better retention and infiltration of water and controlled surface runoff after heavy storm events.]

8. U.S. Army Corps of Engineers:

- a. Continue to work with non-federal sponsors on flood damage reduction projects.
- b. Promote the need for basinwide evaluations of existing flood damage reduction projects and evaluations of new structural and/or nonstructural projects.
- c. Continue management and maintenance of dams and reservoirs to serve flood control purpose. Regulate dams and reservoirs during high water events to reduce downstream flood damages. Continue support of FEMA in disaster recovery efforts.
- d. Continue investigations of local flood protection projects under the Levee Safety Program, and certify levees that meet safety criteria.

9. U.S. Fish and Wildlife Service:

Coordinate with state and federal Susquehanna River Basin partners and SRBC to review the impacts of proposed structural and nonstructural flood damage reduction measures on the Susquehanna River Basin water resources and uses, with particular attention to fish and wildlife resources.

10. U.S. Geological Survey:

- a. Work with NWS to collect data needed to predict floods and to improve flood prediction capabilities, including development of instrumentation technology.
- b. Record flood high water marks and relate to velocities, and determine recurrence intervals.
- c. Work with FEMA and State Emergency Management Agencies on flood inundation activities, including modeling and mapping (priority but not an active project).
- d. As needed, update regional regression equations to compute flood-flow statistics used in analysis of flood inundation and floodplains for construction of structures. Make this information publicly available through the USGS StreamStats web page.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Operate and maintain local flood control projects. Provide floodplain management training and assistance to local governments. Complete and release digital floodplain map for Cortland County. Initiate development of updated floodplain maps for Chemung County. Protect against dam failure through increased emphasis on the Dam Safety Program. Protect against increased stormwater discharges through outreach, training, stormwater construction permits, and MS4 stormwater permits for Binghamton and Elmira area municipalities.
- b. **State Emergency Management Office (SEMO)** – Provide coordination and support for flood preparedness response, recovery, mitigation, and planning activities. Administer federal mitigation grant programs.
- c. **Environmental Emergency Services (EES)** – Support emergency management offices in Chemung, Schuyler, and Steuben Counties by operating and enhancing a flood warning system, with a locally operated network of real-time gages (stream/river gages, precipitation gages, and climate stations). Conduct public information and education.
- d. **Southern Tier Central Regional Planning and Development Board (STCRPDB)** – Provide technical assistance and training for floodplain management, stormwater management, flood mitigation, and hazard mitigation planning.
- e. **Upper Susquehanna Coalition** – Build flood attenuation wetlands. Reduce erosion damage from flooding through implementation of stream rehabilitation projects. Engage local governments throughout the Upper Susquehanna and Chemung Basins to identify, assess, and promote measures that will mitigate the impact of floods.
- f. **New York State Floodplain and Stormwater Managers Association (NYSFSMA)** – Promote effective floodplain and stormwater management by providing training, public outreach, communication, and coordination.

2. Pennsylvania:

Department of Environmental Protection:

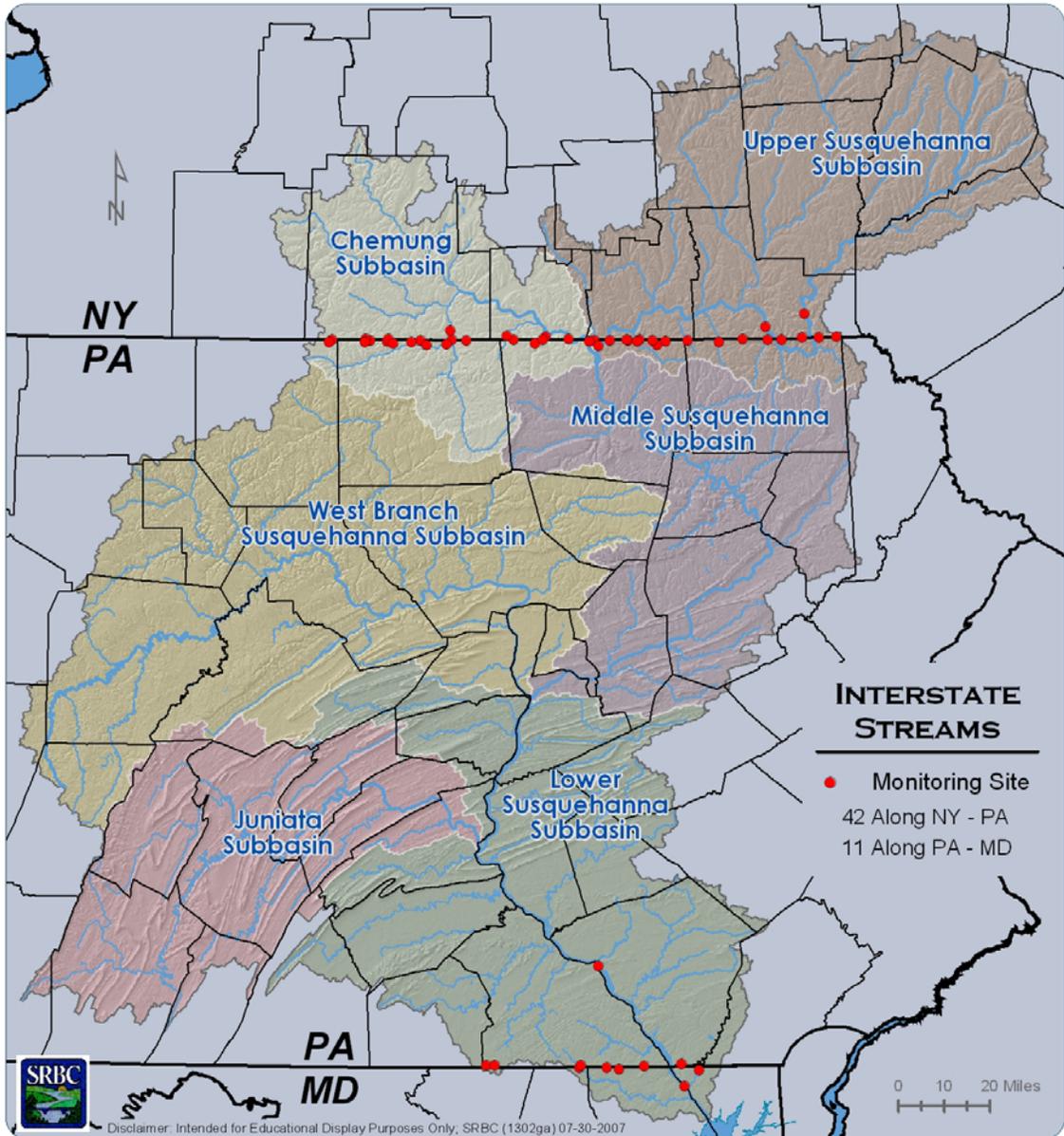
Bureau of Waterways Engineering - Implement state funded nonstructural flood protection projects. Continue construction and inspection of state funded structural flood protection projects. Continue financial and technical assistance to sponsors of federal flood protection projects.

3. Maryland:

a. **Department of the Environment:**

Water Supply Program – Continue to maintain a 24/7 emergency response system capable of assisting water systems in dealing with water quality and infrastructure emergencies. Ensure that water systems have adequate emergency response plans in place. Ensure that new drinking water projects meet industry standards in flood protection.

Department of Natural Resources – Coordinate the activities of a comprehensive group of planners, emergency responders and environmental organizations, as well as business and insurance representatives, to develop a strategy for reducing Maryland’s vulnerability to climate change, with an initial focus on sea level rise and coastal hazards.



Water Resource Need No. 3

IMPROVE WATER QUALITY



Needs Statement:

Control water pollution and excess nutrient runoff sufficiently to maintain and establish water quality capable of supporting multiple purpose uses for public water supply, recreation, fish and wildlife, agriculture, industry, energy production and other uses. Protection also will be given to the receiving waters of the Chesapeake Bay.

A. Susquehanna River Basin Commission

- 1. Water Quality Assessments** – (1) Conduct assessments of interstate stream water quality and issue internet-based annual reports; (2) conduct annual biological assessments for large rivers; (3) complete the first phase water quality and biological assessment of Upper Susquehanna Subbasin and continue the second phase in the Whitney Point Lake area; and (4) begin the first phase water quality and biological assessment for Middle Susquehanna Subbasin and begin the second phase in a selected small watershed. Enter water quality assessments into the EPA Assessment Database and assist member jurisdictions with developing water quality management strategies. Assist Pennsylvania with its Instream Comprehensive Evaluation Program. Assist Pennsylvania and Maryland with collection of water quality data for TMDL development. Perform water quality monitoring associated with the EPA Chesapeake Bay Targeted Watershed Grant for Paxton Creek.
- 2. Chesapeake Bay Program** – Collect data and maintain a database for calculating annual loads, analyzing trends, and assisting bay partners to develop strategies for water quality management in the Susquehanna basin. Implement expanded sediment and nutrient monitoring in support of tributary strategies and provide annual reports on trends. Assist in expanding the monitoring network, and participate in the CBP's subcommittees and work groups. Perform tributary strategy coordination activities.

B. Federal Programs and Projects

1. Environmental Protection Agency:

Coordinate work by EPA and its partners – SRBC, PADEP, MDE – to achieve greater and faster advances in preventing waters from being polluted and to improve those waters that are polluted through the national point and non-point sources program:

- a. Continue to reduce point source pollution through Bay permitting strategy, which will provide water clarity benefits in the Susquehanna as well as protect the Bay.
- b. Increase bacteria monitoring (PADEP continues to work on a statewide plan for addressing bacterial pollution).
- c. Continue ensuring the timely sharing of assessment information on interstate waters for use in integrated reporting assessments 305(b) and 303(d).
- d. Continue to coordinate impaired waterbody listings, develop TMDLs, and continue source water protection activities.
- e. Continue ensuring the timely sharing of assessment information on interstate waters for use in integrated reporting assessments 305(b) and 303(d).
- f. Coordinate non-point source pollution program activities to reduce, eliminate, and/or prevent impairments to the basin mainstem and tributaries.
- g. Coordinate work by Pennsylvania, New York, USGS, and EPA to maintain existing monitoring stations and expand implementation of the Chesapeake Bay Nontidal Water Quality Monitoring Network within the Susquehanna River Basin.
- h. Support the development and management of an effective sustainable infrastructure program for wastewater facilities.

2. National Park Service:

- a. Support actions recommended in the Deer Creek Watershed Restoration Action Strategy that will address impairments to water quality in conjunction with the Deer Creek Watershed Restoration Action Strategy. Continue supporting the Delaware–Lehigh National Heritage Corridor & Lackawanna Valley National Heritage Area, in partnership with the Susquehanna Greenway Partnership, to identify and improve riparian buffers along the Susquehanna River in Luzerne and Lackawanna Counties.
- b. Assist with the preparation of a community-based watershed management plan for Carr’s Creek and Willow Brook that will guide the restoration of extensive flood damage caused by two major flood events in 2006. Restoration of streamside vegetation will be particularly beneficial in addressing water pollution and sedimentation.

3. National Weather Service:

Issue daily flows forecasts (currently Susquehanna River at Harrisburg), and provide water information as necessary in conjunction with hazardous spills.

4. Natural Resources Conservation Service:

- a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and Conservation Technical Assistance to address critical water resource concerns.
- b. Provide Watershed Program planning assistance to address nonpoint source and mine drainage pollution at the request of local project sponsors.
- c. Continue to ensure proper local operation and maintenance of NRCS Watershed Program assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County, Pennsylvania.
- d. Encourage local project sponsors to work with landowners to properly operate and maintain Watershed-Program-assisted measures installed to address agricultural nonpoint source pollution in the following watersheds:

New York: Brandywine Creek, Brixus Creek, Bulkley Creek, Clark's Creek, Dean Creek, Finch Hollow Creek, Genegantslet Creek, Hoffman Creek, Jackson Creek, Little Choconut Creek, Millbrook Creek, Nanticoke Creek, Newtown Creek, Patterson Creek, and Trout Brook.

Pennsylvania: Buffalo Creek, Cedar Run, Clover Creek, Rock Creek, and Yellow Creek.

5. Office of Surface Mining:

- a. Provide technical and financial assistance to PADEP and individual watershed groups for the remediation of the impacts of mine drainage and abandoned mine lands in the basin. Conduct periodic monitoring of the performance of mine drainage treatment systems constructed in West Branch tributaries under the Watershed Cooperative Agreement Program and provide this information to project sponsors.
- b. Coordinate with SRBC to promote and implement the goals of the Appalachian Regional Reforestation Initiative. [This initiative seeks to restore viable forest lands on active and abandoned coal mined lands, through the incorporation of land reclamation techniques shown effective in successful reforestation. This will help improve water quality through reduced surface runoff.]
- c. Maintain a GIS database of all mine drainage treatment projects in Pennsylvania (this database is available to all individuals, groups and agencies for planning and assessment purposes, and project monitoring).
- d. Continue to partner with SRBC and PADEP in efforts to clean up the West Branch of the Susquehanna River.

6. U.S. Army Corps of Engineers:

- a. Support development of abandoned mine drainage solutions, including continuing construction of the Dents Run (Section 206) project and investigations at Upper Tioga (Section 206) and the Southern Anthracite Region (General Investigations), Pennsylvania. [These projects will also help restore aquatic ecosystems – see Water Resource Need No. 7.]

- b. Continue water quality data collection and evaluation program at reservoirs. Where possible, regulate dams and reservoirs to improve both in-lake and downstream water quality. Carefully monitor development and spread of zebra mussel infestations.
- c. Review, through the Corps' Regulatory Program, permit applications for Section 10 and 404 Permits to ensure no more than minimal impacts to waters of the United States, including jurisdictional wetlands. Require avoidance, minimization and compensatory mitigation for all unavoidable impacts in an effort to improve overall water quality.

7. U.S. Fish and Wildlife Service:

- a. Continue USFWS habitat enhancement efforts, e.g. riparian buffer restoration, using water quality assessment data developed by SRBC.
- b. Support fishery restoration programs using SRBC's subbasin water quality assessments.
- c. Restore and protect stream channels, riparian areas, and adjacent wetlands to reduce sediment and nutrient inputs.

8. U.S. Geological Survey:

- a. Collect and provide water quality data to local, state, and federal agencies that manage water resources.
- b. Conduct studies to improve the understanding of fate and transport of contaminants under various hydrogeologic settings.
- c. Develop methodology and analyze trends in water quality data throughout the Chesapeake Bay Basin.
- d. Conduct studies through monitoring and research to evaluate the effectiveness of land management treatments to mitigate agricultural and abandoned mine drainage impacts.
- e. Coordinate these efforts with local, state, and federal partners.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Protect water quality through permit programs and compliance monitoring for point discharges, stormwater management, stream and wetland disturbance, and agricultural discharges. Proceed with implementation of water quality restoration and protection measures recommended in the Priority Waterbodies Lists for the Chemung and Susquehanna Basins and the “New York Tributary Strategy for Chesapeake Bay Restoration” (an interim plan based on the Chesapeake Bay Program Watershed Model Version 4.3, released September 2007. The strategy describes approaches and practices to reduce nutrients from a wide variety of sources, which will be refined as new information is obtained). Fund Water Quality Improvement Projects. Monitor water quality in streams, rivers, lakes, and groundwater on a 5-year cycle. Assist SRBC with stream sampling associated with the Chesapeake Bay Program non-tidal monitoring network. Evaluate the scope of aging wastewater infrastructure problems and develop cost-effective and sustainable solutions. Educate local officials and the public about the importance of investing in water and wastewater infrastructure. Administer

chemical and pollution control programs, including spill response, waste site remediation, chemical and petroleum storage, pesticide program, and waste management.

- b. **Environmental Facilities Corporation (EFC)** – Conduct Clean Watersheds Needs Survey to assess the need for point source and non-point source water pollution abatement and protection projects.
- c. **Environmental Facilities Corporation / NYS Department of Environmental Conservation** – Provide low interest financing for municipal water quality improvement projects through the Clean Water State Revolving Fund.
- d. **Soil and Water Conservation Committee (SWCC)** – Promote water quality protection and improvements through the Agricultural Environmental Management Program and the Agricultural Non-Point Source Grant Program.
- e. **Upper Susquehanna Coalition and individual USC members (County Soil and Water Conservation Districts)** – Facilitate the implementation of water quality protection measures recommended in the “New York Tributary Strategy for Chesapeake Bay Restoration.”
- f. **Southern Tier Central Regional Planning and Development Board** – Provide technical assistance, training and public outreach on watershed planning, stormwater management, and other topics.
- g. **New York State Floodplain and Stormwater Managers Association** – Promote effective stormwater management by providing training, public outreach, communication, and coordination.
- h. **County Water Quality Coordinating Committees** – Periodically update county water quality strategies and support implementation of strategy recommendations.

2. Pennsylvania:

Fish and Boat Commission – Continue to participate in technical advisory groups for various organizations and watershed groups to enhance aquatic resources. Provide recommendations in regulatory permitting processes and initiatives to maintain or improve water quality through avoidance alternatives, removal of dams, encouraging of re-mining abandoned mine lands to current reclamation standards and installing treatment at select hatcheries. Evaluate aquatic biological conditions on select stream systems through a variety of programs.

3. Maryland:

a. Department of the Environment:

Wastewater Permit Program – Continue to implement the Tributary Strategy for the Upper Western Shore, which includes the Susquehanna River Watershed in Maryland. [This requires that Enhanced Nutrient Removal be installed for all WWTPs in Maryland with a design flow of 0.50 MGD or greater and also requires substantial non-point source nutrient reductions. ~27 free-flowing stream locations continue to be monitored for water quality, fish and benthic organisms. Water Quality Analysis for nutrient impairment in the Lower Susquehanna watershed completed with EPA approval in 2006.]

Water Supply Program – Provide guidance and technical assistance to local governments to assist them in implementing requirements of HB1141, which requires local governments to include a water resources element (WRE) in their comprehensive plan by October 2009. The WRE will help local governments to evaluate nutrient loadings from all sources.

b. **Department of Natural Resources:**

Forest Service – Continue coordination of Maryland Stream ReLeaf (statewide effort to reforest streamsides and shorelines, with a long-term goal of 70 percent forest buffers). [Progress in 2007 in Maryland’s portion of the Susquehanna Basin was 4.5 miles, with buffers created on 104 acres.]

Begin implementing the 2007 Forest Conservation Goals, which commit Maryland to increasing conservation of forests in critical areas for water quality, including buffers, steep slopes, and wetlands through Program Open Space, Rural Legacy, and Maryland Agricultural Land Preservation Foundation.

Chesapeake and Coastal Watershed Services – Continue to work with local governments and stakeholders in the Deer Creek Watershed to implement the recommendations of the Watershed Restoration Action Strategy.

Water Resource Need No. 4

MITIGATE DROUGHT IMPACTS



Needs Statement:

Mitigate the adverse impacts of drought conditions on water users and the environment.

A. Susquehanna River Basin Commission

Drought Coordination – Monitor emerging drought conditions and, as needed, activate the Interagency Drought Coordinating Committee, implement the basinwide Drought Coordination Plan, and, as needed, update the plan. Initiate several strategies to educate and inform the public on water conservation and promote awareness of water system losses.

B. Federal Programs and Projects

1. Environmental Protection Agency:

Provide support through funding of drinking water emergency plans at state and local levels. Reduce the effect of droughts through EPA stormwater programs, which result in more water being introduced to groundwater.

2. Federal Emergency Management Agency:

Continue administering the mitigation grant programs for states that could be used to fund drought mitigation projects (the current top priority for use of these funds, however, is to remove substantially and repetitively damaged structures from the floodplain).

3. National Weather Service:

Issue precipitation departures from normal for county-wide areas (monthly, seasonal, annual – MARFC) and drought statements as necessary (Weather Forecast Offices). Support the National Integrated Drought Information System Implementation Plan, which calls for an “early warning system” for drought. Continue supporting NOAA’s Drought Information Center, the portal for NOAA drought and climate conditions. Issue drought/low flow forecasts based on enhanced gridded data (future).

4. Natural Resources Conservation Service:

Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and Conservation Technical Assistance to address critical water resource concerns, including improved irrigation water management, improved soil health and the use of moisture conserving crop production practices.

5. Office of Surface Mining:

Continue to support PADEP’s efforts to promote the use of underground mine pools as alternative industrial water supplies, thereby reducing demand on ground and surface water. Continue to support PADEP and SRBC efforts to provide additional clean water in the West Branch through mine drainage treatment projects such as the Barnes and Tucker facility.

6. U.S. Army Corps of Engineers:

Monitor low flow conditions throughout the Susquehanna Basin when they develop, and implement drought contingency plans at reservoirs as necessary. Participate on SRBC’s Drought Coordination Committee. Consider use of drought assistance emergency authorities, if requested and if applicable.

7. U.S. Fish and Wildlife Service:

Continue involvement in Conowingo Pond Management Plan and advance migratory fish flow needs.

8. U.S. Geological Survey:

Maintain drought monitoring website developed and maintain supporting data-collection activities. Develop methodology to evaluate ecological flows and impacts on aquatic communities. As needed, update regional regression equations to compute low flow statistics. Keep this data available to the public through the USGS StreamStats web page.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Serve as the lead agency for management of water supply droughts.
- b. **Department of Agriculture and Markets** – Monitor and manage agricultural droughts.
- c. **Upper Susquehanna Coalition** – Mitigate drought impacts through wetland creation.

2. Pennsylvania:

a. **Department of Environmental Protection:**

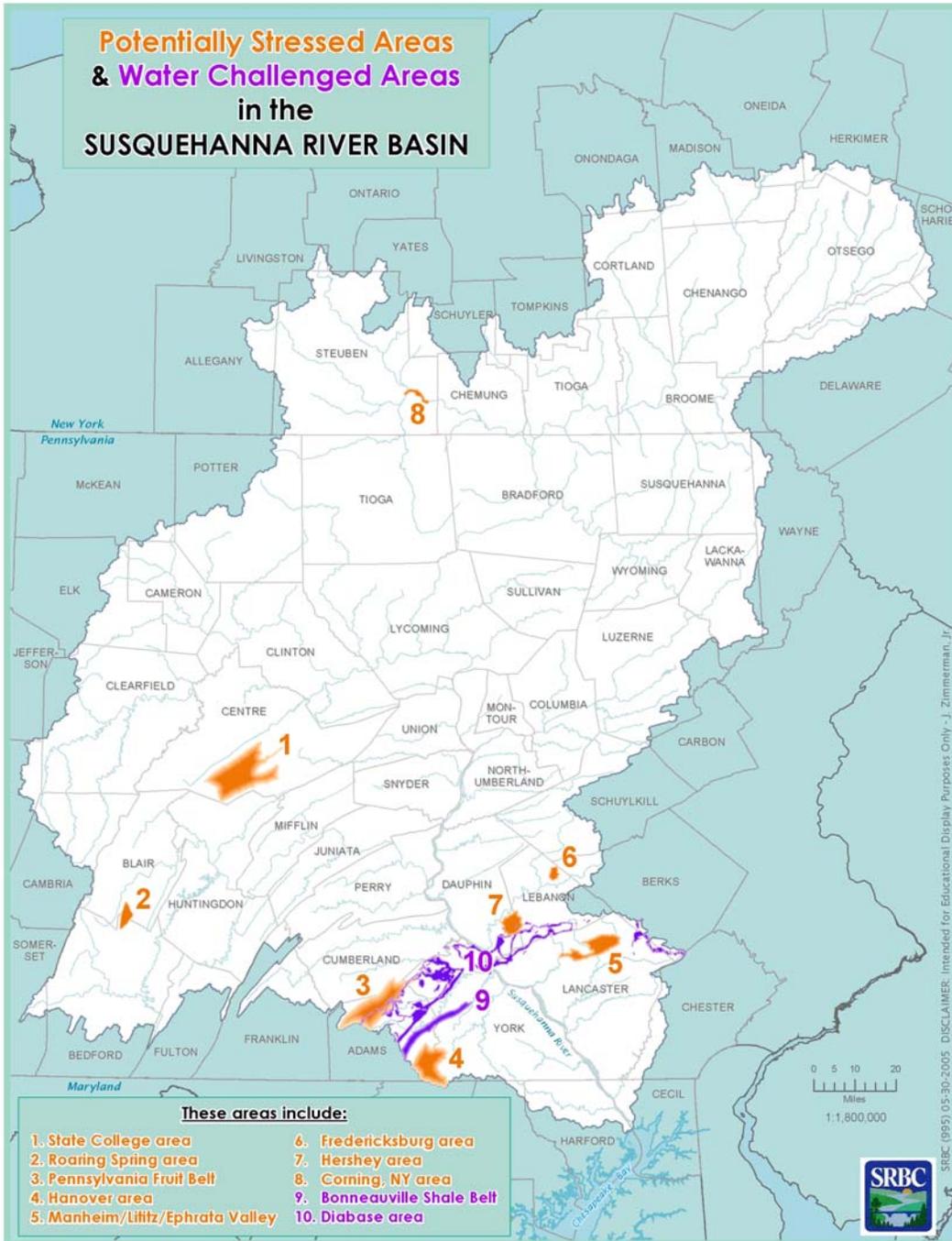
Bureau of Watershed Management – Work with water suppliers to develop Drought Contingency Plans.

- b. **Fish and Boat Commission** – Continue to support usage of alternate sources of water supplies such as underground mine pools, existing reservoirs, etc.

3. Maryland:

Department of the Environment:

Water Supply Program – Continue to implement the state’s drought management plan, including assessment of hydrologic conditions, coordination with local governments, and implementation of drought response measures as needed. Work with local governments as they develop their comprehensive plans to ensure that water supply planning is adequate to address drought conditions.



Water Resource Need No. 5

ENSURE ADEQUATE WATER SUPPLY



A drought-impacted water supply reservoir in the Susquehanna basin.

Needs Statement:

Ensure an adequate supply of water for all users, including instream users and the Chesapeake Bay.

A. Susquehanna River Basin Commission

- 1. Surface and Groundwater Management** – Continue to monitor and report on hydrologic conditions. Continue implementing the recommendations in the 2005 Groundwater Management Plan for the Susquehanna River Basin. Continue leadership role in developing, operating, and managing recommendations for the Conowingo Pond water resources. Pursue funding opportunities to conduct a three-phase Critical Aquifer Recharge Areas project and to study groundwater and surface water interaction in Morrison Cove and other potentially stressed areas. Promote water conservation through the development of the Water Conservation Technical Assistance Center for the PADEP and through select agricultural water conservation demonstration projects.
- 2. Regulatory Program** – Continue reviewing hydropower re-licensing applications, proposed surface and groundwater withdrawals, consumptive water uses, and applications for emergency withdrawals/uses. Carry out compliance and enforcement activities. Complete an overhaul of application forms and guidance documents, in consultation with SRBC's Water Resources Management Advisory Committee. Continue developing online reporting and application tools to streamline the review and reporting process.
- 3. Source Water Protection/Early Warning System (EWS)** – Provide assistance to municipalities to protect source waters for potable water supply. Continue to fully implement the EWS for selected water supply systems in Pennsylvania and New York, and seek funds and partners to expand the EWS project to other areas of the basin.

4. **Low Flow Management** – Pursue prime recommendation of recently completed Agricultural Consumptive Use Study to provide the 15.7 million gallons per day (mgd) of water necessary to offset agricultural consumptive water use in the Pennsylvania portion of the basin. Focus search for sources on storage opportunities at abandoned or unused mines, and publicly or privately owned reservoirs and lakes. Initiate a study to evaluate the potential for more frequent water releases from USACE’s Cowanesque and Curwensville projects where SRBC owns storage. Pursue funding to study biological and physical impacts of low flows. Monitor low flow conditions to ensure compliance with consumptive use regulations and, as appropriate, direct releases of water from storage. Work with others to identify freshwater inflows needed from the Susquehanna River to restore and maintain the ecological health of the Chesapeake Bay.

B. Federal Programs and Projects

1. Environmental Protection Agency:

- a. Develop a strategy to implement source water protection activities throughout the basin that would include: (1) using the source water assessments to identify protection priorities; (2) educating stakeholders about priorities and protection methods; and (3) consider forming regional source water protection workgroups that would coordinate activities with other agencies and programs, and provide technical assistance (related to item B1(c) in Water Resource Need No. 1).
- b. Consider (for the above work described) including a compilation of the source water assessments in a GIS overlay such as has been done in the Potomac basin.
- c. Support the development and management of an effective sustainable infrastructure program for drinking water facilities.

2. National Park Service:

Support actions recommended in the Deer Creek Watershed Restoration Action Strategy that will maintain and protect natural flows in Deer Creek to support aquatic life and mimic natural stream flows.

3. National Weather Service:

Issue AHPS long-term (30-day) probability forecasts for river locations within the basin.
Issue long-term inflow forecasts for area reservoirs (future).

4. Natural Resources Conservation Service:

- a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and Conservation Technical Assistance to improve efficient use of existing water supplies and to protect source water from agricultural pollutants.
- b. Continue to ensure proper local operation and maintenance of NRCS-assisted multiple purpose dams that include water supply located in the following watershed projects:

Pennsylvania: Marsh Creek, Middle Creek, and Mill Creek (Tioga County).

5. Office of Surface Mining:

Continue to support PADEP's efforts to promote the use of underground mine pools as alternative public, commercial, and industrial water supplies, thereby reducing demand on ground and surface water. Continue to support PADEP and SRBC efforts to provide additional clean water in the West Branch through mine drainage treatment projects such as the Barnes and Tucker facility.

6. U.S. Army Corps of Engineers:

Investigate low flow operational plan modifications at Curwensville and Cowanesque Lakes, if feasible. Use Section 22 program to investigate regional and local water supply needs, funds permitting. Evaluate water supply actions identified in Water Resources Development Act of 2007.

7. U.S. Fish and Wildlife Service:

Promote northeast regional water supply and demand analysis and alternatives to meet needs and manage growth. Continue involvement in Conowingo Pond Management Plan and advance migratory fish flow needs. Assist state and federal Susquehanna River Basin partners and SRBC in developing science-based minimum instream flow criteria for the Susquehanna River Basin water resources and uses, with particular attention to fish and wildlife resources in the Susquehanna River and Chesapeake Bay.

8. U.S. Geological Survey:

Provide tools to water managers to determine water availability based on USGS/cooperator stream gages and groundwater network data. Continue to conduct and refine recharge and water budget analysis methodology. Evaluate water availability within state holdings.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Allocate public water supplies through the Public Water Supply Permit Program. Evaluate the scope of aging water supply infrastructure problems and develop cost-effective and sustainable solutions. Educate local officials and the public about the importance of investing in water and wastewater infrastructure.
- b. **Department of Health** – Monitor public water supplies for compliance with safe drinking water standards.
- c. **Environmental Facilities Corporation / Department of Health** – Provide low interest financing for community water supply systems through the Drinking Water State Revolving Fund.
- d. **Corning Area Municipalities** – Review the “Chemung River Valley Water Study” (April 2003) and consider implementing recommendations.

2. Pennsylvania:

Fish and Boat Commission – Continue involvement in management of water resources and instream flow requirements for water users in the basin. Work with SRBC and PADEP staff to advance tools and policies for use in evaluation of consumptive water uses and maintenance of instream flows.

3. Maryland:

Department of the Environment:

Water Supply Program – Continue to enforce the state’s appropriation permit requirements, which prohibit unreasonable impacts on the resource. Continue work on the Coastal Plain aquifer study, which will conduct detailed studies of regional groundwater flow systems and water budgets for the Coastal Plain aquifers. The study will also include enhanced monitoring of groundwater level, streamflow, and water quality in the Maryland Coastal Plain. Continue to seek funding to fully support the Coastal Plain aquifer study and to initiate a second study with similar goals for the Piedmont region of the state.

Water Resource Need No. 6

PROMOTE ECONOMIC DEVELOPMENT



Needs Statement:

Promote the economic development of the basin under sustainable water resource principles.

A. Susquehanna River Basin Commission

Pursue economic development within the context of the programs and projects listed under other needs (i.e., SRBC will continue its commitment to the adequate funding and maintenance of the SFFWS as one very important means of reducing flood damage and minimizing economic displacement). Support programs of the member jurisdictions leading to restoration of runs of migratory fish to the basin that will improve the sport fishery. Operate a regulatory program for consumptive use of water and withdrawals of water that will seek to minimize conflicts among users who need dependable sources of water for their business and economic activities. Develop a consumptive water use mitigation plan that will look for ways to maintain adequate flows for all water users. Continue to seek water quality improvements to benefit businesses and industries, as well as recreation and tourism in the basin, through activities such as the West Branch remediation strategy.

B. Federal Programs and Projects

1. National Park Service:

Support actions recommended in the Deer Creek Watershed Restoration Action Strategy that will maintain and protect natural flows in Deer Creek to support aquatic life and mimic natural stream flows.

2. Natural Resources Conservation Service:

- a. Continue assistance to basin Resource Conservation and Development (RC&D) areas in Maryland (Eastern Shore, Western Maryland); New York (Finger Lakes, Central New York) and Pennsylvania (Headwaters, Endless Mountains, Pocono Northeast, Southern Alleghenies, Community Partnerships, Capital) to: (1) improve the capability of state and local government and local nonprofit organizations to plan, develop and carry out programs for resource conservation and development; and (2) improve the quality of life achieved through natural resource conservation and community development, which leads to sustainable communities and prudent use of natural resources.
- b. Improve agricultural sustainability and viability through proper natural resource conservation using agency financial and technical assistance programs.
- c. Continue to use enhanced and targeted program opportunities to promote natural resource improvement for beginning farmers, limited resource farmers and disadvantaged communities.

3. Office of Surface Mining:

Continue to support PADEP's efforts to develop uses of underground mine pools and discharges for resource recovery, and to meet municipal, commercial and industrial water needs to promote economic development (the removal of abandoned mine drainage from streams also promotes economic development through improvement of the quality of life in adjacent communities).

4. U.S. Army Corps of Engineers:

Continue policy of using benefit-to-cost ratios and other national economic development considerations in project recommendations.

5. U.S. Fish and Wildlife Service:

Promote sustainable, "smart-growth" development techniques in order to protect fish and wildlife habitat and water quality. Work with SRBC on outreach and education for shad restoration and fish passage. Work to restore and manage healthy sustainable fisheries.

C. State Programs and Projects

1. New York:

- a. **New York Ocean and Great Lakes Ecosystem Conservation Council** – Develop a strategy for implementing ecosystem-based management across the state. By considering the entire ecological community, including humans, this management approach is intended to restore both the ecological and economic values of ecosystems.
- b. **Regional Planning Boards** – Prepare regional Comprehensive Economic Development Strategies, which incorporate water resource issues, such as flooding, wastewater and water infrastructure, and water quality.

- c. **Chemung River Council** – Facilitate implementation of “The Chemung River Comprehensive Master Plan” to promote river-based economic development in Chemung County and work toward development of a regional greenway network.
- d. **Southeast Steuben River Council** – Develop a vision for river-related economic development along the Chemung River in Steuben County and join with efforts of the Chemung River Council.
- e. **Broome County River Communities** – Develop a river corridor plan that expands the Greater Binghamton Greenway, promotes river-related economic development, improves recreational access, and highlights cultural heritage sites.

2. Pennsylvania:

Fish and Boat Commission – Continue involvement in a variety of advisory groups, watershed groups for protection and enhancement of water quality and aquatic systems for fishing, boating and other recreational activities. Continue to acquire and provide access for fishing and boating activities.

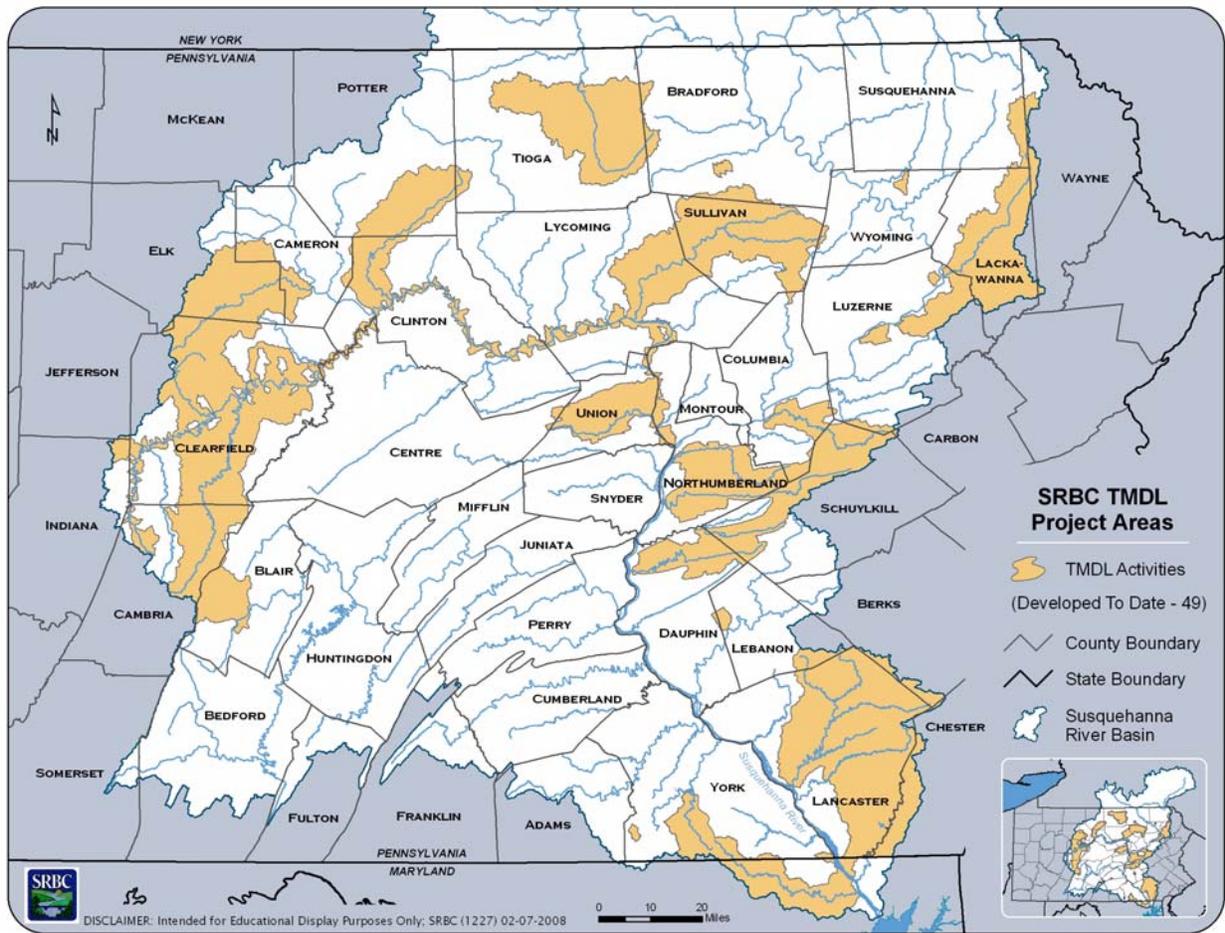
3. Maryland:

a. **Department of the Environment:**

Water Supply Program – Provide guidance and technical assistance to local governments to assist them in implementing requirements of HB1141, which requires local governments to include a water resources element (WRE) in their comprehensive plan by October 2009. [The WRE will help local governments to ensure that adequate water resources are available for planned growth and development.]

b. **Department of Natural Resources:**

Cooperative Extension – Begin coordinating the Master Logger Program to improve safety and environmental protection during forest harvesting. Support responsible forest management to provide a sustainable resource-based economy that, with good implementation of best management practices, protects water quality and supply.



Water Resource Need No. 7

PROTECT AND/OR RESTORE AQUATIC ECOSYSTEMS



Needs Statement:

Take actions to protect and/or restore fish and wildlife habitat including streams and wetlands

A. Susquehanna River Basin Commission

Watershed Management and Restoration – Provide technical and organizational support to the member jurisdictions and local watershed groups to promote watershed planning, protection, and restoration. Continue development of TMDL studies within areas affected by both abandoned mine drainage and nonpoint source agricultural/urban runoff. Develop and perform field studies, analyze data, prepare reports, and coordinate activities in support of the Adaptive Management Plan for the Whitney Point Lake Section 1135 Project Modification. Continue to pursue the abandoned mine drainage project in cooperation with PADEP, Bureau of Abandoned Mine Reclamation, at the Barnes and Tucker abandoned mine site on the West Branch Susquehanna River that could ultimately provide 7 to 10 million gallons of water per day of treated, enhanced flows to the Susquehanna River Basin. Explore other opportunities with the Bureau of Abandoned Mine Reclamation to obtain enhanced flows from other abandoned mine drainage treatment sites.

B. Federal Programs and Projects

1. Federal Emergency Management Agency:

Contribute to the protection and restoration of aquatic ecosystems by administering the National Flood Insurance Program (NFIP) and E.O. 11988 that minimizes development in the floodplain and mitigation grants that remove structures from floodplains.

2. National Park Service:

- a. Support actions recommended in the Deer Creek Watershed Restoration Action Strategy that will protect ecological health and sustainability of Deer Creek and the watershed.
- b. Assist with the preparation of a community-based watershed management plan for Carr's Creek and Willow Brook that will guide the restoration of extensive flood damage caused by two major flood events in 2006. [The watershed plan would be completed with a holistic view of stream dynamics. The project will accomplish tangible results in terms of stream bank restoration, areas restored to attenuate flooding, improvement to and protection of aquatic ecosystems, placement of Best Management Practices to reduce adverse affects of agriculture, and areas permanently conserved.]

3. National Weather Service:

Partner with NOAA NOS and Chesapeake Bay Office and other non-NOAA partners supporting the NOAA North Atlantic Regional Team Activity: Coastal Flooding and Inundation Forecasts and Visualization in the Chesapeake Bay and Estuaries by providing inflow data for Chesapeake Bay estuary model, running a high resolution atmospheric model, and providing surface wind and pressure fields to drive the hydrodynamic model.

4. Natural Resources Conservation Service:

- a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and Conservation Technical Assistance to protect, improve or restore fish and wildlife habitat, including wetlands and streams.
- b. Provide Watershed Program planning assistance to address nonpoint source and mine drainage pollution at the request of local project sponsors.
- c. Continue to ensure proper local operation and maintenance of NRCS-assisted multiple purpose dams that include fish and wildlife measures in the following watershed projects:

New York: Jackson Creek, and Millbrook Creek.

Pennsylvania: Briar Creek, Marsh Creek, Middle Creek, and Mill Creek (Tioga County).

- d. Continue to ensure proper local operation and maintenance of NRCS-assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County, Pennsylvania.
- e. Encourage local project sponsors to work with landowners to properly operate and maintain NRCS Watershed Program assisted measures installed to address agricultural nonpoint source pollution and to improve aquatic habitat in the following watersheds:

New York: Brandywine Creek, Brixus Creek, Bulkley Creek, Clark's Creek, Dean Creek, Finch Hollow Creek, Genegantslet Creek, Hoffman Creek, Jackson Creek, Little Choconut Creek, Millbrook Creek, Nanticoke Creek, Newtown Creek, Patterson Creek, and Trout Brook.

Pennsylvania: Buffalo Creek, Cedar Run, Clover Creek, Rock Creek, and Yellow Creek.

5. Office of Surface Mining:

Continue to provide financial and technical assistance to PADEP and local watershed groups in the remediation of mine drainage impacts on local streams, thereby improving and restoring aquatic habitat.

6. U.S. Army Corps of Engineers:

- a. Execute Whitney Point Lake Section 1135 Project Modification construction when funding becomes available. Continue to pursue other improvements to aquatic ecosystems through a myriad of authorities available for this primary mission area. Continue the Cooperstown Area Ecosystem Restoration, New York, feasibility study to restore wetland habitats and improve soil and water conservation practices within the ecologically valuable headwaters of the Susquehanna River Basin and the Chesapeake Bay Watershed.
- b. Proceed to design and implement the Section 206 Codorus Creek and Nanticoke Creek watershed projects, pending availability of funds.
- c. Continue, through the Corps Regulatory Branch, to review and authorize (when determined appropriate) wetland restoration projects supported by state and federal grant money in an effort to encourage the restoration of aquatic ecosystems within the Susquehanna River Watershed.

7. U.S. Fish and Wildlife Service:

- a. Provide technical support for stream restoration projects: identification, assessment, prioritization, and implementation.
- b. Pursue regional adoption of smart-growth measures.
- c. Provide technical assistance in development of watershed and stream management plans that restore native fish populations (e.g., fishways and dam removals) and support migratory birds and habitats.
- d. Be proactive in protecting high priority habitats by developing partnerships with landowners for conservation easements, deed restrictions, and other protective instruments.
- e. Collaborate with partners to restore early succession wetland habitats for the federally listed bog turtle.
- f. Continue to serve on the Mid-Atlantic Regional Panel on ANS, and work to control the spread of aquatic nuisance species in the basin and the Chesapeake Bay.
- g. Serve on the Atlantic States Marine Fisheries Commission boards and committees and promote healthy and sustainable diadromous fisheries.

8. U.S. Geological Survey:

Conduct studies that quantitatively evaluate linkages between physical and chemical characteristics and biological communities to better understand interrelationships. Conduct fish community, fish tissue, and bed-sediment analyses. Collect, analyze, and interpret benthic macroinvertebrate data from streams. Evaluate fish health in relation to water quality, particularly hormones, antibiotics, pharmaceuticals, and personal care products.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Support the implementation of the *New York State Comprehensive Wildlife Conservation Strategy*. Provide NYS State Wildlife Grant funding for a rare mussel survey in Susquehanna basin rivers (by State University of NY College at Oneonta) and a hellbender survey in the Susquehanna basin (by State University of NY College of Environmental Science and Forestry). Monitor aquatic habitat in lakes and streams on a 5-year monitoring and assessment cycle. Support the NY Citizens Statewide Lake Assessment Program (CSLAP), in which trained citizens conduct water quality monitoring. Support implementation of the NYS Invasive Species Task Force recommendations (2005 report) and regional activities of the Finger Lakes Partnership for Regional Invasive Species Management and the Catskill Regional Invasive Species Partnership.
- b. **Upper Susquehanna Coalition** – Restore habitats through wetland construction, wetland restoration, stream rehabilitation, and prescribed grazing projects. Partner with the Baltimore Aquarium to implement a program in which high school students grow wetland vegetation and plant it in newly constructed wetlands. Design and install “hellbender signs” to promote knowledge about the presence of this rare salamander in the Susquehanna basin.

2. Pennsylvania:

a. Department of Conservation and Natural Resources:

Bureau of State Parks – Provide resource information and assistance to student stewardship projects related to the *Watershed Education* program, such as habitat creation/restoration of fish, turtles and birds by using environmentally responsible cleaning products in schools and trash cleanup within riparian zones.

b. Department of Environmental Protection:

Bureau of Watershed Management – Continue involvement and support of PADEP’s surface water allocation program.

Fish and Boat Commission – Continue to provide technical assistance for stream and wetland restoration projects, including but not limited to threatened and endangered species. Provide technical review for projects and permits in the watershed. Evaluate and manage fisheries in the watershed. Continue enforcement of existing laws and regulations. Evaluate smallmouth bass mortality by chairing a multi-agency work group and seeking study funding. Direct Norfolk Southern pollution settlement funds toward aquatic restoration in the upper Sinnemahoning Creek Watershed.

3. Maryland:

a. Department of the Environment:

Water Supply Program – Continue to enforce the state’s appropriation permit requirements, which prohibit unreasonable impacts on the resource. Continue to seek funding for the proposed Maryland Coastal Plain and Piedmont Aquifer studies. [The Piedmont study in particular will seek to correlate the impacts of water withdrawals on aquatic ecosystems.]

- b. **Department of Natural Resources** – Plan for benthic and fish community monitoring in wadeable, non-tidal streams for several watershed segments in the lower Susquehanna River watershed in 2008 as part of the Statewide Maryland Biological Stream Survey.

State and local agencies – Implement incentive, conservation, and regulatory programs to reforest stream and shoreline buffers and conserve headwater forests (CREP, MACS, FCA, CBCA Law, POS, Rural Legacy, MALPF, and others).

MID-ATLANTIC SHAD and HERRING MIGRATION ROUTES



Water Resource Need No. 8

RESTORE MIGRATORY FISH



A. Susquehanna River Basin Commission

Fisheries Program – Continue to participate as a member of the Susquehanna River Anadromous Fish Restoration Cooperative (SRAFRC) and help restore populations of American shad, hickory shad, blueback herring, American eel and other migratory fish throughout their historic range in the basin. Also, continue participation in Mid-Atlantic Panel on Aquatic Invasive Species and work to control and limit the spread of aquatic invasive species in the Susquehanna River Basin. Coordinate with Pennsylvania and others on construction of the Sunbury fabridam fish passage. Promote and seek opportunities to conduct additional instream flow studies.

B. Federal Programs and Projects

1. Environmental Protection Agency:

Continue coordinated efforts with state and federal agencies to evaluate potential alternative construction methods to remove blockages to fish passage.

2. National Park Service:

Support actions recommended in the Deer Creek Watershed Restoration Action Strategy that will eliminate existing fish blockages in Deer Creek and its principle tributaries.

3. Natural Resources Conservation Service:

Continue to partner with the Pennsylvania Fish and Boat Commission on opportunities to support targeted dam removal utilizing NRCS programs such as the Wildlife Habitat Incentive Program (WHIP).

Needs Statement:

Restore native migratory fishes to the Susquehanna River system. Remove obstacles to the movement of migratory and indigenous fishes.



4. U.S. Army Corps of Engineers:

- a. Continue to seek opportunities to remove fish blockages, both physical and chemical, and provide migratory fish passage throughout various watersheds.
- b. Continue, through the Corps Regulatory Branch, to review and authorize (when determined appropriate) dam removal/stream restoration projects to support the migratory fish restoration efforts within the Susquehanna River Watershed.

5. U.S. Fish and Wildlife Service:

- a. Continue, as the lead federal agency for migratory fish restoration, efforts with partners to provide technical support for fish passage restoration to the tributaries of the Susquehanna River (i.e., identification, assessment, prioritization, and implementation).
- b. Continue to chair various SRAFRC committees. Continue working with PADCNr and legislators to solve Sunbury funding issues and install adequate fishways.
- c. Review federal activities and provide appropriate comments, recommendations and terms for federal permits and licenses in order to ensure installation of safe, timely and effective fish passage facilities and measures.
- d. Serve on the Atlantic States Marine Fisheries Commission boards and committees and promote healthy sustainable diadromous fisheries.
- e. Work with partners in the EPA Chesapeake Bay Program and the Fish Passage Coordinators Working Group to promote fish passage and habitat restoration projects that will benefit diadromous fish.
- f. Complete “A Stream Professional Strategy for Removing and Mitigating Dams in New York State and in the Upper Susquehanna Watershed.”

6. U.S. Geological Survey:

Work with aquatic-resource management agencies to evaluate the geomorphic and chemical impacts of dam removals. Collect and evaluate stream habitat data in relation to the support of migratory fish populations.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Address potential solutions to fish health concerns (particularly viral hemorrhagic septicemia) in the American shad stocking program.
- b. **Hydrologic and Habitat Modification Special Work Group** – Develop a preliminary working draft for applicants and dam owners on barrier mitigation, focusing on the removal of small dams.
- c. **Chemung River Council** – Pursue funding for construction of fish passage and a canoe/kayak route at the Hibbard Dam in Elmira.

- d. **City of Binghamton** – Proceed with feasibility evaluation and seek funding for fish passage and possible white water recreation site at the Rockbottom Dam.
- e. **Upper Susquehanna Coalition** – Conduct a “Stream and Culvert Workshop” to provide practical, cost-effective suggestions for maintaining and restoring fish passage at culverts.

2. Pennsylvania:

a. **Department of Environmental Protection:**

Bureau of Waterways Engineering – Continue partnering with resource agencies in removing obsolete dams.

- b. **Fish and Boat Commission** – Continue restoration activities in the watershed, which includes shad restoration, dam removal, etc. Encourage improved fish passage in FERC licensing decisions.

3. Maryland:

Department of Natural Resources:

Fisheries Service – Assess anadromous fish stocks in the lower Susquehanna River below Conowingo Dam, including collecting biological characterization data from adult American shad (length, sex, and scale age), determining relative abundance indicators for adults and juveniles and tagging adult American shad.

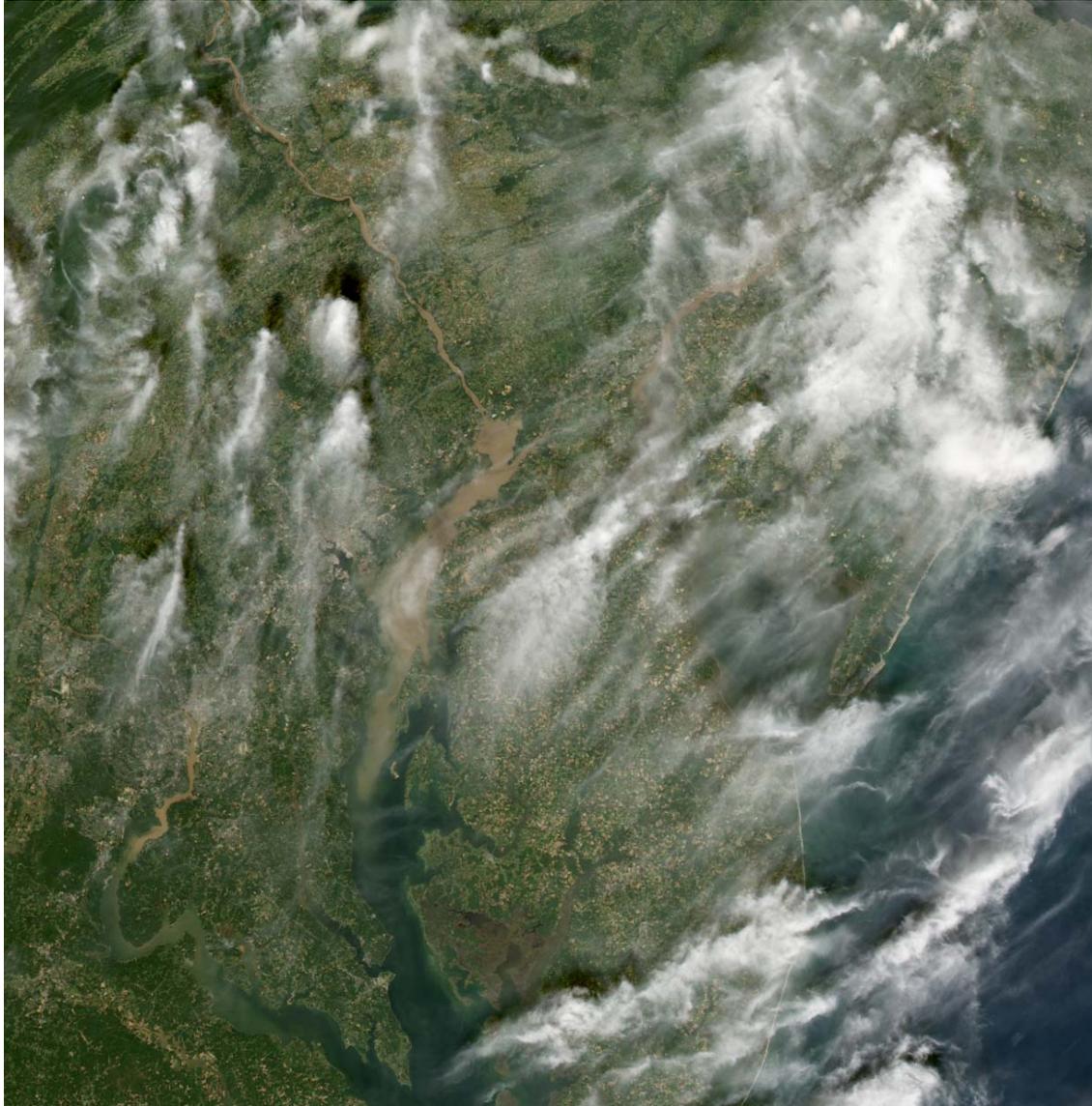


Photo courtesy US EPA

**SEDIMENT CONTRIBUTION FROM SUSQUEHANNA BASIN TO THE
CHESAPEAKE BAY DURING TROPICAL STORM IVAN IN 2004**

Water Resource Need No. 9

MANAGE SEDIMENT



Needs Statement:

Protect the water and related land resources of the basin through the implementation of both conservation practices that retard runoff, and prevent or reduce soil erosion and other management alternatives to control sediment deposition.

A. Susquehanna River Basin Commission

Continue to work with federal, state and local partners to implement the Paxton Creek Watershed Stormwater Project, Dauphin County, Pennsylvania, to control sediment and water quality in Paxton Creek and serve as a model for basinwide application.

B. Federal Programs and Projects

1. Environmental Protection Agency:

Work with the Chesapeake Bay Program to ensure project implementation reporting is included in overall sediment management and data accounting systems (EPA's stormwater management programs are designed to reduce sediment pollution).

2. National Park Service:

- a. Support actions recommended in the Deer Creek Watershed Restoration Action Strategy that will address sedimentation through the implementation of best management practices and sound land use decisions.
- b. Assist preparation of a community-based watershed management plan for Carr's Creek and Willow Brook that will guide the restoration of extensive flood damage caused by two major flood events in 2006. [The watershed plan would be completed with a holistic view of stream dynamics. The project will accomplish tangible results in terms of stream bank restoration, areas restored to attenuate flooding, placement of BMPs to reduce sedimentation, and areas permanently conserved.]

3. Natural Resources Conservation Service:

- a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and Conservation Technical Assistance to address soil erosion and runoff.
- b. Encourage local project sponsors to work with landowners to properly operate and maintain NRCS Watershed Program assisted measures installed to address erosion, runoff and sediment transport in the following watersheds:

Maryland: Little Deer Creek

New York: Brandywine Creek, Brixus Creek, Bulkley Creek, Clark's Creek, Dean Creek, Finch Hollow Creek, Genegantslet Creek, Hoffman Creek, Jackson Creek, Little Choconut Creek, Millbrook Creek, Nanticoke Creek, Newtown Creek, Patterson Creek, and Trout Brook.

Pennsylvania: Briar Creek, Buffalo Creek, Cedar Run, Clover Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), North Fork Cowanesque River, Rock Creek, and Yellow Creek.

4. Office of Surface Mining:

- a. Continue to provide financial support to PADEP through the Abandoned Mine Lands Fund to reclaim abandoned surface mines in the basin, thereby reducing sediment loads in streams.
- b. Coordinate with SRBC to promote and implement the goals of the Appalachian Regional Reforestation Initiative. [This initiative seeks to restore viable forest lands on active and abandoned coal mined lands, through the incorporation of land reclamation techniques shown effective in successful reforestation. This will help improve water quality through better infiltration and retention of surface water and reduced surface runoff.]

5. U.S. Army Corps of Engineers:

- a. Identify and garner support for the Conestoga River Watershed Study to result in signing of a feasibility cost-sharing agreement. Investigate, contingent on funding and nonfederal partnership, the issue of sediment inflow and removal behind the lower Susquehanna River dams. Promote the need and champion the development of a Regional Sediment Management (RSM) Strategy for the Chesapeake Bay.
- b. Continue to educate the public on the benefits of clean water. Focus efforts to encourage the agricultural community to incorporate stream bank fencing, riparian buffer plantings and designated cattle crossings in stream channels to reduce sediment loads and improve overall water quality in the Susquehanna River Watershed.

6. U.S. Fish and Wildlife Service:

Continue to provide technical support in sediment reduction in tributary stream channels through identification, assessment, prioritization, and implementation of projects. Provide technical assistance in developing watershed level sediment management plans.

7. U.S. Geological Survey:

Lead efforts in the Chesapeake Bay Program to determine sediment sources and transport. Encourage establishment of additional sediment stations. Collect, analyze, and evaluate data. Develop real-time capabilities of tracking sediment through surrogate continuous measurement of turbidity. Develop regional curves for utilization in stream restoration design. Conduct bathymetric surveys of impoundments to document sediment deposition.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Control sediment loads through permit programs and compliance monitoring for stormwater management, stream and wetland disturbance, and agricultural discharges. Evaluate, revise, and implement the sediment management recommendations in the “New York Tributary Strategy for Chesapeake Bay Restoration.” The strategy describes approaches and practices to reduce sediment loads from a wide variety of sources. Assist SRBC with stream sampling associated with the Chesapeake Bay Program non-tidal monitoring network, which will be used to refine the Tributary Strategy as appropriate.
- b. **Upper Susquehanna Coalition and individual USC members (County Soil and Water Conservation Districts)** – Reduce erosion of streambanks and channels through implementation of stream rehabilitation projects. Promote prescribed grazing, riparian buffers, and other agricultural practices that reduce erosion by maintaining vegetative cover. Review the “New York Tributary Strategy for Chesapeake Bay Restoration” and revise the sediment management recommendations to meet the projected sediment loads for the Chesapeake Bay.

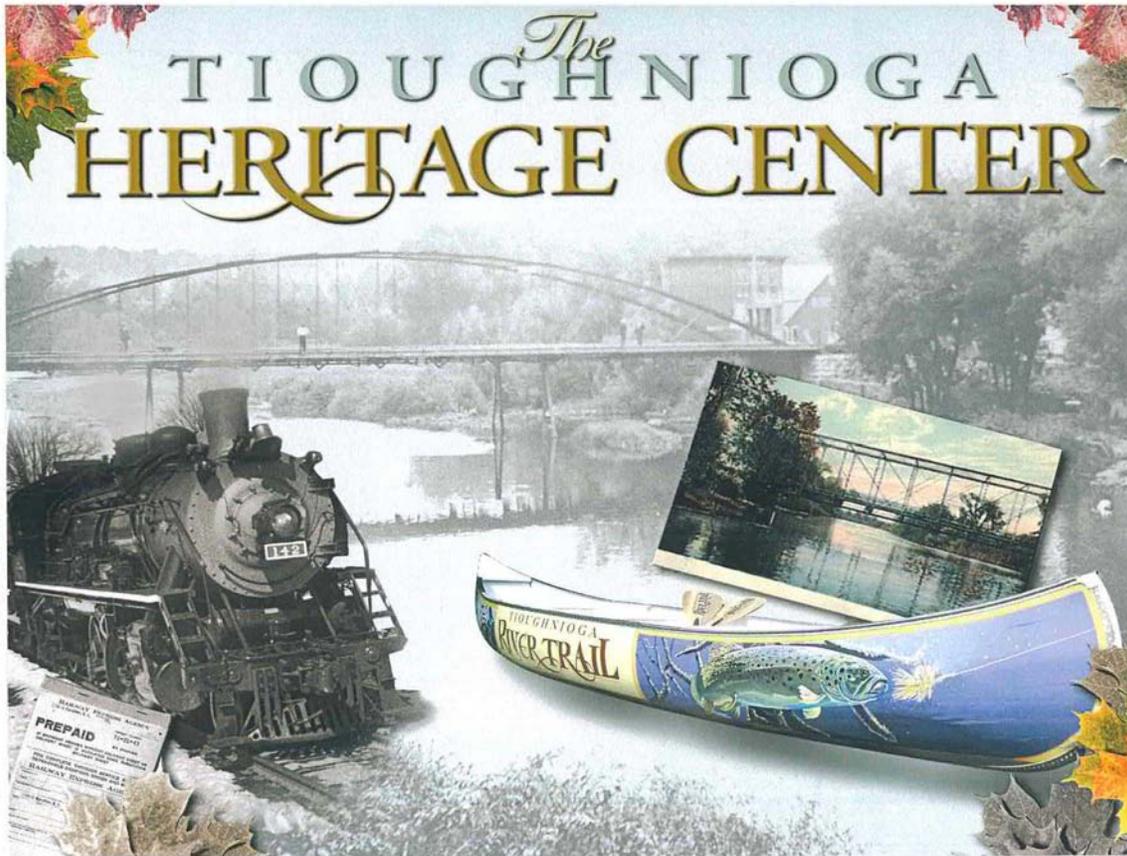
2. Pennsylvania:

- a. **Department of Environmental Protection:**
 - Bureau of Waterways Engineering** – Develop a legacy sediment removal/floodplain restoration best management practices for inclusion in Phase 5 of the Chesapeake Bay Program’s watershed model.
- b. **Fish and Boat Commission** – Continue reviewing and issuing permits to ensure practices that will limit sediment runoff. Participate in technical advisory groups that are addressing sediment issues. Continue enforcement of laws and regulations.

3. Maryland:

- a. **Department of the Environment:**
 - Water Supply Program** – Continue to promote development and implementation of source water protection programs for public water systems, which encourage urban and agricultural best management practices to reduce runoff.
- b. **Department of Natural Resources:**
 - State and local agencies** - Implement incentive, conservation, and regulatory programs to reforest stream and shoreline buffers and conserve forests on steep slopes and in floodplains (CREP, MACS, FCA, CBCA Law, POS, Rural Legacy, MALPF, and others).

TIOUGHNIOGA
RIVER TRAIL
A Classic American Waterway



Artwork and photo courtesy of BDC-IDA

Water Resource Need No. 10

PRESERVE CULTURAL AND HISTORICAL HERITAGE



Photo Courtesy PEC

Needs Statement:

Preserve and make more readily available to the public scenic, cultural and historic amenities that are unique to the Susquehanna River Basin.

A. Susquehanna River Basin Commission

Continue working with the Susquehanna Greenway Partnership to establish a 500-mile long greenway along both banks of the Susquehanna River in Pennsylvania and the West Branch Susquehanna River.

B. Federal Programs and Projects

1. Federal Emergency Management Agency:

Review all mitigation project proposals and certain public assistance grant projects for compliance with environmental and historic preservation laws. Contribute to the preservation of cultural and historical heritage via its Environmental & Historic Preservation Program to ensure compliance with Section 106 of the National Historic Preservation Act for all FEMA Programs.

2. National Park Service:

- a. Solicit nominations and designate (as appropriate) additional Chesapeake Bay Gateway sites, trails, and water trail segments along the Susquehanna River and major tributaries. Provide technical and financial assistance (as appropriate) to designated Gateways to aid the enhancement of public access, interpretation and resource stewardship.

- b. Continue promoting and supporting the efforts of the Delaware–Lehigh National Heritage Corridor & Lackawanna Valley National Heritage Area, in partnership with the Susquehanna Greenway Partnership, to implement strategies to develop recreational resources and preserve and interpret cultural and historic heritage resources along the North Branch Susquehanna River in Luzerne and Lackawanna Counties.
- c. Identify and preserve cultural and historical values through the Deer Creek Watershed Restoration Action Strategy.
- d. Continue to support efforts of the Susquehanna Greenway Partnership and local partners to preserve, interpret and communicate the cultural and historic resources and stories of the Susquehanna corridor.

3. Natural Resources Conservation Service:

- a. Continue to protect cultural resources by evaluating the impact of all conservation measures planned and implemented with agency assistance and avoiding impacts or enhancing cultural resource protection when practicable.
- b. Continue to work with the Susquehanna basin states to fund permanent conservation easements, including those that protect cultural resources, through the Farm and Ranch Land Protection Program (FRPP).

4. U.S. Army Corps of Engineers:

- a. Coordinate, as part of the National Environmental Policy Act, all projects with appropriate stakeholders to assure cultural and historical preservation, and seek to add educational amenities about local history and culture.
- b. Ensure, through the Corps Regulatory Branch, that all projects within the Susquehanna River Watershed are in compliance with Section 106 of the National Historic Preservation Act prior to issuing any Federal Permits.

C. State Programs and Projects

1. New York:

Department of State – Administer the Parks, Historic Preservation and Heritage Area Program.

2. Pennsylvania:

Department of Conservation and Natural Resources:

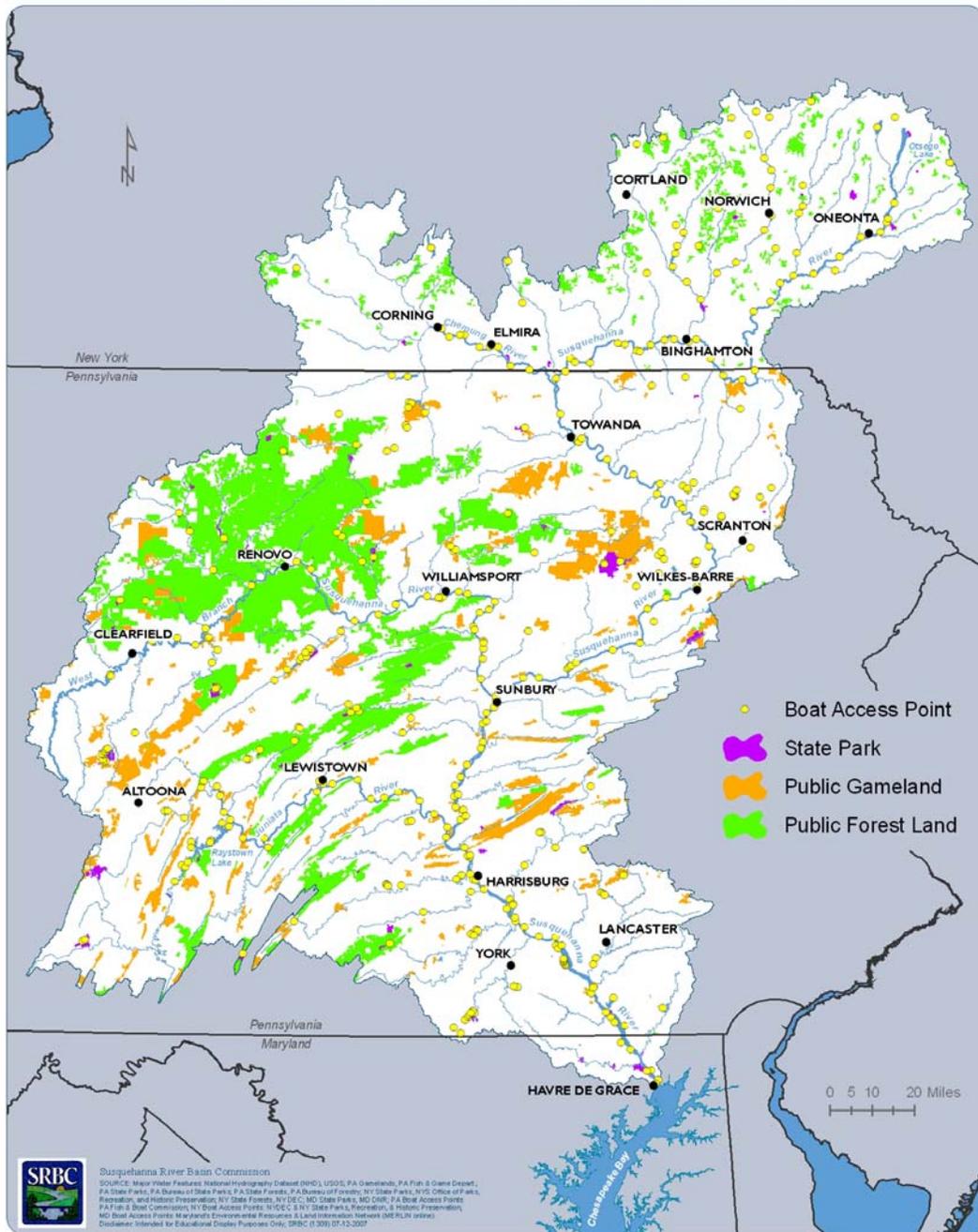
Bureau of State Parks – Continue to identify, protect and educate about relevant cultural, historical and natural resource artifacts used or found within state parks. Connect water resource issues of the past and present to current conditions, regulations and stewardship measures as part of the *Watershed Education* program.

3. Maryland:

Department of Natural Resources:

Boating Services Unit – Continue to develop a water trail map and guide of the Lower Susquehanna River Water Trail. This effort has been underway since 2005 and highlights scenic, cultural, and historic resources along the mainstem Susquehanna River.

SUSQUEHANNA RIVER BASIN PUBLIC LANDS & BOAT ACCESS POINTS



Water Resource Need No. 11

ENHANCE RECREATION



Needs Statement:

Expand and improve water-based recreational opportunities in the basin.

A. Susquehanna River Basin Commission

Pursue enhanced recreation in the context of the programs and projects listed under other needs (i.e., Whitney Point Lake Section 1135 Project Modification to include enhanced recreational facilities to be maintained by the County of Broome, New York). Continue supporting efforts to restore migratory fish to the basin to open up vast new recreational opportunities.

B. Federal Programs and Projects

1. National Park Service:

- a. Solicit nominations and designate (as appropriate) additional Chesapeake Bay Gateway sites, trails, and water trail segments along the Susquehanna River and major tributaries. Provide technical and financial assistance (as appropriate) to designated Gateways to aid the enhancement of public access, interpretation and resource stewardship.
- b. Evaluate, in partnership with water trail management organizations and the Commonwealth of Pennsylvania, the needs and potential responses to help sustain developing water trails; provide technical and financial assistance (as appropriate) to help ensure all current developing water trails in the Chesapeake Bay Gateways Network along the Susquehanna River and major tributaries meet baseline developmental criteria.

- c. Continue providing consultation by request from the Headwaters River Trail Partnership with completion of the Susquehanna River Water Trail System in New York State.
- d. Continue providing assistance through the Rivers, Trails and Conservation Assistance Program to the Susquehanna River Greenway and Susquehanna River Water Trail project, including partnering with water trail management organizations, Commonwealth of Pennsylvania and other partners to implement phase 2 of the Susquehanna River Trail Signage Project, assisting with a stewardship and conservation workshop, and assisting with recognition of segments of the water trail as a National Recreation Trail.
- e. Consider requests for technical assistance with community-based river, trail and greenway projects in the Susquehanna basin through the Rivers, Trails and Conservation Assistance Program.
- f. Conserve “recreation habitat” and provide public access through the Deer Creek Watershed Restoration Action Strategy.
- g. Continue supporting the Delaware – Lehigh National Heritage Corridor & Lackawanna Valley National Heritage Area, in partnership with the Susquehanna Greenway Partnership, to implement strategies to link Lackawanna Valley trails with the Delaware and Lehigh trail system along the Susquehanna.
- h. Continue working (in partnership with the Active Living by Design Program) with the Wyoming Valley Wellness Partnership to implement health and wellness strategies using the Wyoming Valley trail system.
- i. Provide assistance through the Rivers, Trails and Conservation Assistance Program to the Pennsylvania Highlands Trail project to provide trail linkages between the Delaware, Schuylkill and Susquehanna watersheds in Pennsylvania.

2. Natural Resources Conservation Service:

Continue to ensure proper local operation and maintenance of NRCS-assisted dams that include water-based recreation in the following watershed projects:

New York: Jackson Creek, and Millbrook Creek.

Pennsylvania: Briar Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), and North Fork Cowanesque River.

3. Office of Surface Mining:

- a. Continue to provide technical and financial support to PADEP and watershed groups to remediate the impacts of mine drainage in streams, thereby allowing the restoration of fisheries and enhancement of recreational opportunities, including fishing, boating, and scenic viewing by driving, hiking and biking.
- b. Participate with SRBC on the West Branch of the Susquehanna River Task Force in support of Pennsylvania’s goal to restore streams impacted by coal mine drainage, and build the recreational and economic opportunities in the region.

4. U.S. Army Corps of Engineers:

Support the inclusion of recreational enhancements in new projects, such as the riverfront development initiatives at the Wyoming Valley Levee Raising Project and at existing projects.

5. U.S. Fish and Wildlife Service:

Continue, as the lead federal agency for migratory fish restoration, efforts with partners to provide technical support for fish passage restoration to the tributaries of the Susquehanna River (i.e., identification, assessment, prioritization, and implementation). Provide technical assistance in development of watershed and stream management plans that restore native fish populations (e.g., fishways and dam removals) and support migratory birds and habitats. Reach out to educate the public about fish and wildlife recreational activities through public awareness and youth informational and activity programs.

6. U.S. Geological Survey:

Develop and maintain methods to make water quantity and quality data readily available to the public so it can be used for recreational purposes. Compile requests from public for more or different hydrologic data and seek funding to support sustainable requests.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Build and maintain boat launches and other public access sites for water-based recreation. Complete construction of a car top boat launch site on the Chemung River at State Route 427.
- b. **Regional Efforts** – Support water-based recreation to include: Chemung Basin River Trail Partnership, Headwaters Water Trail, Chenango Greenway, and Tioughnioga River Waterfront Revitalization Program.
- c. **City of Binghamton** – Extend and enhance the land-based trail system of the Greater Binghamton Greenway along the Susquehanna and Chenango Rivers.
- d. **Chemung Basin River Trail Partnership and Upper Susquehanna Coalition** – Provide local support and coordination for the Alliance for the Chesapeake Bay Susquehanna Sojourn on the Chemung River in 2008. .
- e. **Chemung Basin River Trail Partnership** – Construct the White Wagon boat launch site on the Chemung River with local partners, the Chemung County Soil and Water Conservation District and Town of Chemung.
- f. **Chemung River Council** – Facilitate implementation of “The Chemung River Comprehensive Master Plan” to promote river-based recreation and riverside trails. Work toward development of a regional greenway network.
- g. **Southeast Steuben River Council** – Develop a vision for river-related recreation along the Chemung River in Steuben County and join with efforts of the Chemung River Council.

2. Pennsylvania:

a. Department of Conservation and Natural Resources:

Bureau of State Parks – State park construction projects and education activities in 2008, 2009 and 2010 include:

Region 1: Black Moshannon, repair dam; Cherry Springs, drill new well; Kettle Creek, rehabilitate upper campground and install new drip irrigation septic system; Leonard Harrison, drill new well with distribution system; Poe Valley, repair dam; S.B. Elliot, drill new well; Sinnemahoning, drill new well for park office and repair dam; Sizerville, eliminate springs as water supply.

Region 3: Codorus, remove lake silt if budget permits; Colonel Denning, construct sewage facilities; Greenwood Furnance, repair dam and replace pit latrine; Kings Gap, improve stream bank; Little Buffalo, remove lake silt if budget permits and repair dam; Pine Grove Furnace, construct new buildings to use new wetlands sewage disposal facilities; Shawnee, replace water treatment plant and repair dam spillway; Whipple Dam, remove lake silt if budget permits.

Region 4: Ricketts Glen, upgrade to flush toilet facilities in the group camp area and replace existing water treatment plant and rehabilitate existing wastewater treatment plant.

Central Office: Coordinate with local stakeholders and outfitters to offer recreational opportunities to visitors as part of the *Get Outdoors Pennsylvania* initiative. Coordinate with agency personnel, stakeholders, local watershed associations, etc., to maintain water quality, recreational opportunities and educational outreach.

- b. **Fish and Boat Commission** – Continue to provide technical assistance for stream and wetland restoration projects, including but not limited to T&E species. Provide technical review for projects and permits in the watershed. Evaluate and manage fisheries in the watershed. Continue enforcement of existing laws and regulations.

3. Maryland:

Department of Natural Resources:

Waterway Improvement Program – Continue to improve and promote the recreational and commercial capabilities, conditions and safety of Maryland's waterways for the benefit of the general boating public by providing Waterway Improvement Funds to local governments for a wide variety of capital projects and services. Current examples include upgrading existing boat ramp and boat access piers and designing new boat access piers.

Boating Services Unit – Continue to develop a water trail map and guide of the Lower Susquehanna River Water Trail. This effort has been underway since 2005 and highlights scenic, cultural and historic resources along the mainstem Susquehanna River.

Water Resource Need No. 12

FACILITATE DATA MANAGEMENT AND USE

A. Susquehanna River Basin Commission

- 1. Data Management Improvements** – Continue to analyze SRBC’s data management procedures, and implement a new and improved data management system in phases over the next several years. Continue developing SRBC’s water quality database and enter data into USEPA’s Water Quality Exchange (WQX) database system. Develop an electronic atlas to provide the public with water resources information on the basin. Provide more of SRBC’s water quality monitoring data to the public via SRBC’s web site.
- 2. Geographic Information Systems (GIS) Enhancements** – Advance the development of the GIS program to support watershed and water resource activities. Make spatial data files, standard GIS maps, and mapping assistance available to the public. Increase efforts to provide digital and hard copy mapping assistance to local groups doing watershed planning and remediation.



B. Federal Programs and Projects

- 1. Environmental Protection Agency:**
 - a. Closely coordinate with PADEP on data submission dates for 303(d), 305(b), and Chesapeake Bay Program state of the watershed assessment reporting and public communication schedules.
 - b. Continue implementing water quality data reporting through STORET and assist SRBC in application of new STORET procedures.
- 2. Federal Emergency Management Agency:**

Continue storing engineering data used for flood insurance studies and mapping in a database that is

Needs Statement:

Inventory and store relevant water resource management data in a readily retrievable and usable form, as well as promote data sharing among agencies.

readily available to internal resources and available to other agencies and general public upon request. Continue storing information on community participation in the Community Information System and make available to federal and state agencies and, to a limited extent, to the general public via the internet. Continue making flood insurance rate maps available through the internet and continue developing a new web site that will also include all Letters of Map Change (amendments and revisions to flood maps).

3. National Weather Service:

Provide AHPS standardized and uniform web pages. Leverage existing technology and resources to implement an electronic messaging system (RSS) for the distribution of hydrologic information to basin customers. Provide flood forecast mapping at prototype locations on Juniata and main stem Susquehanna. Provide easy access for customers to gridded analyses and forecasts of watershed conditions (future).

4. Natural Resources Conservation Service:

- a. Continue to maintain and share resource data including soils information via Web Soil Survey at <http://soils.usda.gov>, National Resource Inventory (NRI), summary data from the NRCS Watershed Program database and NRCS Progress Reporting System.
- b. Continue completing Rapid Watershed Assessments (RWA) for 8-digit hydrologic units within the basin by assembling data from multiple sources into a uniform GIS based format. [Pennsylvania RWAs should be completed in 2008 and are being posted on the NRCS-Pennsylvania web site at <http://www.pa.nrcs.usda.gov/>. New York plans to begin developing RWAs and will post them on the NRCS-New York web site at <http://www.ny.nrcs.usda.gov/>.]

5. Office of Surface Mining:

Continue maintaining (in the Harrisburg Office) the GIS database of AMD treatment systems in Pennsylvania and distributing this database to agencies, consultants, individuals and nonprofit groups with interests in cleaning up streams impacted by mine drainage. Continue efforts to make this database available on an OSM web site. Continue administering a national database of AML problems, and projects completed to mitigate the environmental and public health and safety impacts. Continue providing this database through OSM's web site at OSMRE.gov.

6. U.S. Army Corps of Engineers:

Support continued improvement of databases and data management systems, including sharing of data.

7. U.S. Fish and Wildlife Service:

Continue stream and habitat restoration efforts with products provided by SRBC's GIS mapping capabilities. Coordinate with state and federal partners in development and sharing to electronic database and information via the internet.

8. U.S. Geological Survey:

Promote use of NWIS web for availability of historic and real-time water resources data.

C. State Programs and Projects

1. New York:

- a. **Department of Environmental Conservation** – Maintain environmental mapping information on the public web site.
- b. **Upper Susquehanna Coalition** – Develop GIS-based data management system for New York’s Agricultural Environmental Management program. Maintain a wetland database for the Upper Susquehanna and Chemung Basins. Conduct culvert mapping and road ditch erosion assessments.
- c. **Southern Tier Central Regional Planning and Development Board** – Enhance the STCRPDB Water Quality/Stormwater web page to enable public access to additional map-based data and other information. Conduct mapping of stormwater facilities, bridges and culverts.

2. Pennsylvania:

a. **Department of Conservation and Natural Resources:**

Bureau of State Parks – Maintain the *Watershed Education* online database housing monitoring data obtained by schools across the Commonwealth. [The database can be used for educational purposes to compare data with other schools in the area, find others with which to network and generate reports.]

- b. **Fish and Boat Commission** – Assist other program areas by making current resource information available for permitting needs. Supply resource information to advisory and watershed groups. Develop GIS and data sharing capability.

3. Maryland:

a. **Department of the Environment:**

Water Supply Program – Continue to maintain the state’s databases for public drinking water systems and appropriation permits, which track water quality and water quantity information. Continue to work with the Advisory Committee on the Management and Protection of the State’s Water Resources as they evaluate State needs and recommend new programs and policies to ensure that data availability and data sharing goals are recognized and that appropriate recommendations are developed.

- b. **Department of Natural Resources** – Review water quality/aquatic resources data collected in Maryland by SRBC’s Interstate Streams monitoring program for inclusion in the state’s biennial Integrated Water Quality and Watershed Listing Report.

Coordinate flow monitoring and nutrient and sediment load monitoring at Conowingo Dam (Chesapeake Bay River Input monitoring) with USGS (Baltimore).

Coordinate storm-event monitoring on the state’s Deer Creek CORE water monitoring site as part of a Chesapeake Bay Watershed Enhanced Non-tidal Monitoring Program for nutrient and sediment load determination with other states and with the USGS (New Cumberland, Pennsylvania, and Lexington, Kentucky).



Protecting Your Watershed for Today and Tomorrow

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