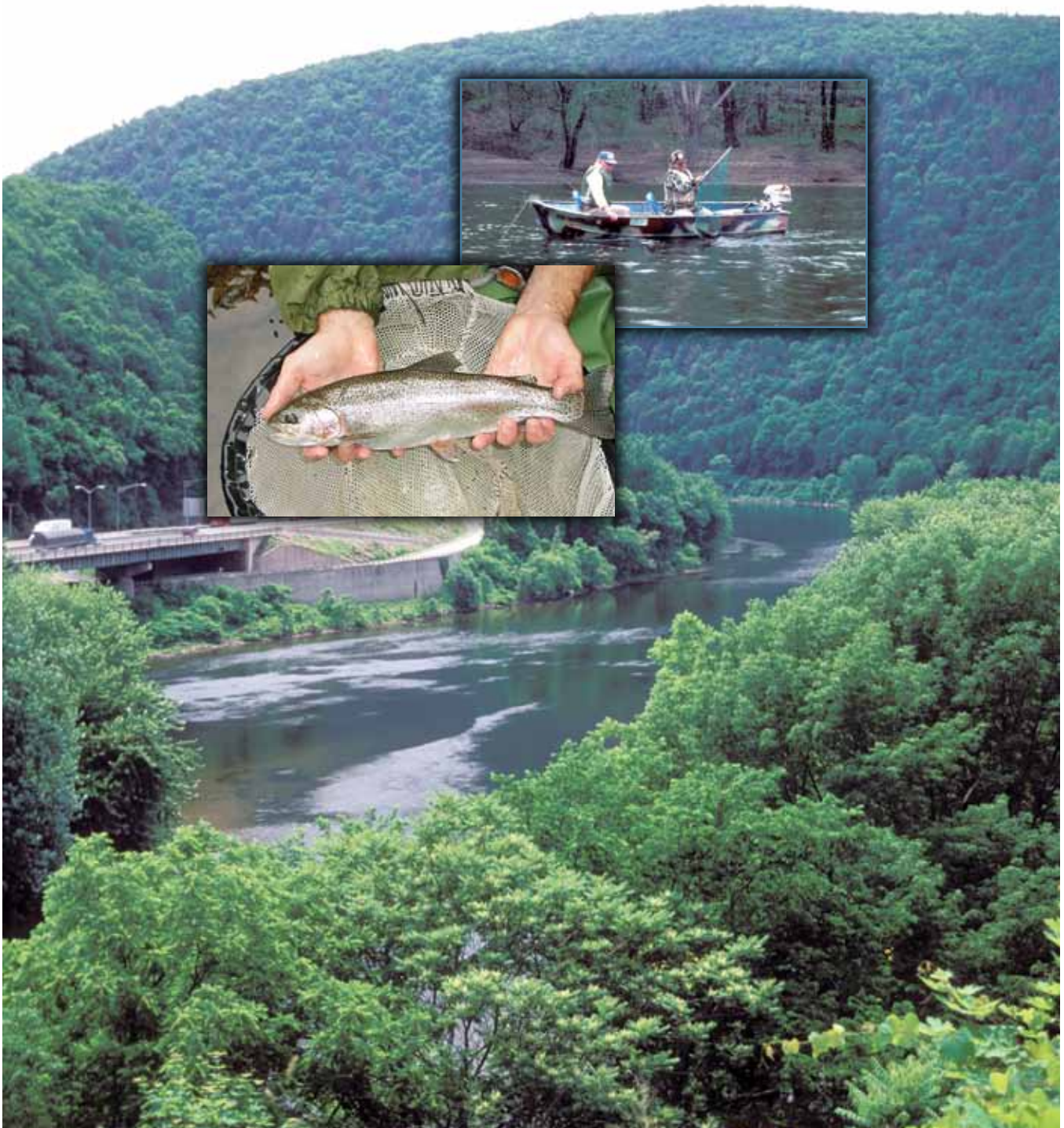




Delaware River Management Plan

executive summary



www.fishandboat.com/DelawareRiverPlan.htm

February 2011

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The Delaware River Basin is the third largest drainage within Pennsylvania. The basin drains 12,756 square miles across the states of Pennsylvania, New York, New Jersey and Delaware. Just over half of the total drainage falls within the Commonwealth of Pennsylvania. The Delaware River flows freely for 330 miles from its origin at Hancock, New York, to the entrance of the Delaware Bay.

The connection of the Delaware River among the four states requires a joint effort in the stewardship of the river's natural resources. The Delaware River Basin Commission (DRBC), which is comprised of the basin state governors or their appointees and a federal representative, provides a unified approach for managing the river basin's water resources. Additionally, approximately 152 miles (77 percent) of the non-tidal reach of the Delaware River lies within three national parks. The Pennsylvania Fish & Boat Commission (PFBC) is responsible for the protection and management of the Commonwealth's aquatic resources including the shared border waters of the West Branch Delaware and Delaware rivers.

The Delaware River Management Plan is designed to guide future actions by PFBC and assist other stakeholders by providing



Brown Trout

information and information needs about the river's invaluable aquatic resources. Ultimately, it is the goal of this plan to protect, conserve and enhance the aquatic resources of and provide fishing and boating opportunities on the West Branch Delaware and Delaware rivers. The management plan encompasses

the mainstem reaches of the West Branch Delaware River on the Pennsylvania-New York border and the non-tidal waters of the Delaware River to the head of tide at Trenton, New Jersey.

The protection and management of the West Branch Delaware and Delaware rivers face many challenges. Forest cover dominates an estimated 55 percent of the basin landscape, 26 percent is in agricultural use and 15 percent



West Branch Delaware River

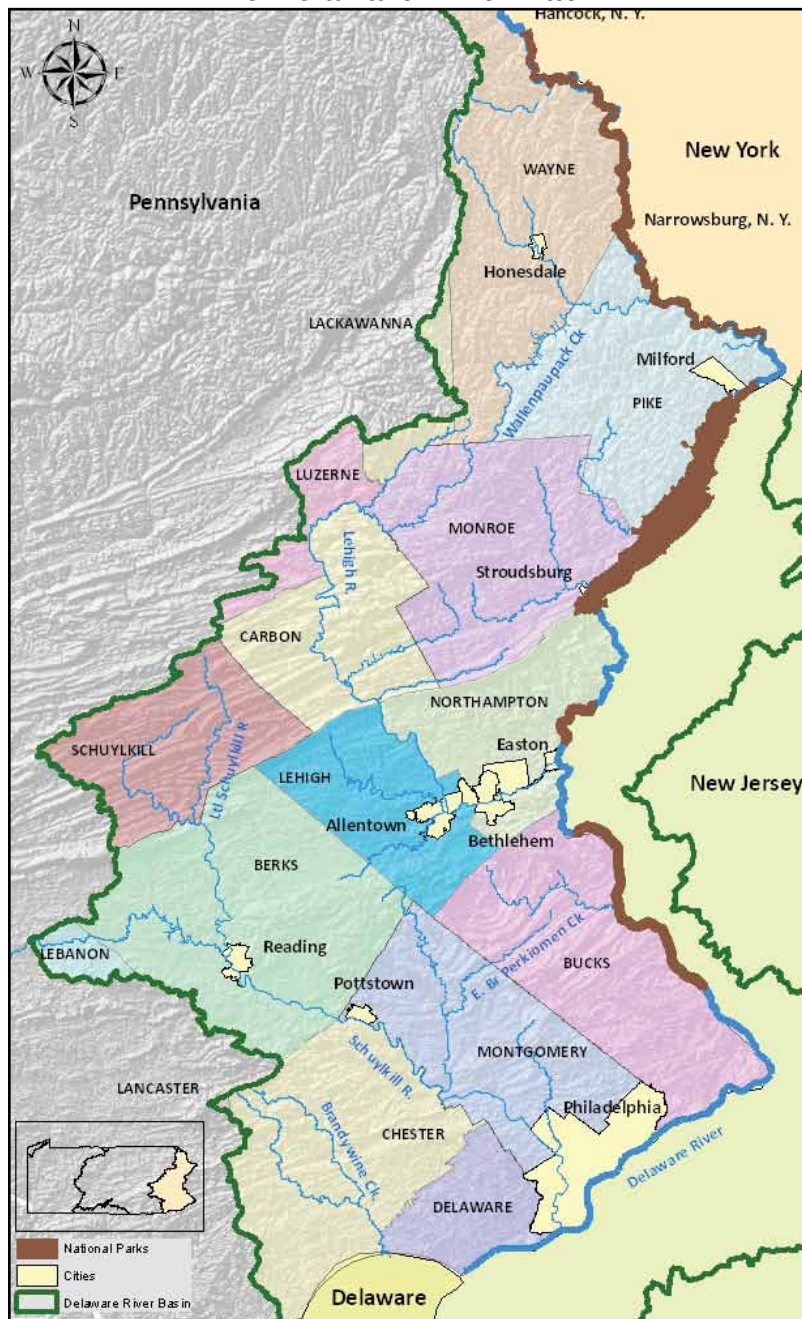
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The Delaware River Basin



Striped Bass

and continued into the late 1980s, culminating in a reoccurring pollution block within the Philadelphia region of the Delaware River. This temporary block prohibited the occurrence of fish and the movement of migratory species throughout the system. Advances in the treatment of municipal and industrial waste led to the elimination of the pollution block and improved water quality in many parts of the Delaware River Basin. The recent boom related to natural gas development of the Marcellus shale poses a new risk to the ecosystem health of the Delaware River Basin. The PFBC, through its working relationship with the Pennsylvania Department of Environmental Protection (PA DEP), will seek to develop a dialog to identify fisheries-based criteria to support a high-quality warmwater designation for inclusion in existing water quality protection criteria. The PFBC will continue to provide commentary and expertise related to our trust species to PA DEP and DRBC, the agencies

is developed. Wetlands account for only 4 percent of the landscape (Source: *DRBC 2008 Delaware River State of the Basin*). Historically, the Delaware River Basin's water quality has been significantly impacted by industrialization, urbanization and agricultural land use. Degradation of water quality in the Delaware River began as early as colonial times

authorized to regulate water quality and water withdrawals and flow management throughout the Delaware River Basin.

River flows have long been manipulated by the combined outflow from three New York City (NYC) reservoirs. Management of these reservoirs is linked to the 1954 United States Supreme Court Decree, which provides for the

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Smallmouth Bass

supply of up to 800 million gallons per day of water to the NYC metropolitan area. The decree stipulates the use of reservoir releases for maintaining a river flow objective of 1,750 cfs (cubic feet per second) at Montague, New Jersey. Since the 1954 decree, reservoir releases have been managed through a series of evolving programs based on unanimous agreement by the parties to the decree (New Jersey, New York, Delaware, Pennsylvania and New York City). The Flexible Flow Management Program (FFMP) is the current framework for managing diversions and releases from NYC's Delaware River Basin reservoirs. This program was designed by the decree parties to support multiple flow management objectives, including water supply;

drought mitigation; flood mitigation; protection of the tailwaters fishery; a diverse array of habitat needs in the main stem, estuary and bay; recreational goals; and salinity repulsion in the Delaware estuary related to maintaining adequate water quality, for municipal water supply withdrawals from the estuary. Extensive brown trout and rainbow trout fisheries exist in the West Branch Delaware River and the Delaware River above Callicoon, New York. These fisheries are supported primarily by releases from the NYC reservoirs. Recent studies have linked the flow regime to habitat availability based on the required need of various trout life stages and species guilds. In 2010, the New York Department

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White Sucker

of Environmental Conservation (NY DEC), Division of Fish, Wildlife and Marine Resources and PFBC published a white paper describing recommended river flows from a coldwater ecosystem perspective. The PFBC will continue to advocate the recommendations described in the white paper and cooperate with NY DEC to assess trends in trout populations in the upper Delaware River. The PFBC will continue to interact with Pennsylvania's decree party representative and associated work groups to support the improved management of reservoir releases for the protection of the coldwater aquatic resource.

In addition to trout, PFBC manages other gamefish, nongame fish, reptiles, amphibians and aquatic invertebrates. *The Pennsylvania State Wildlife Action Plan (SWAP)* is a benchmark resource designed to proactively manage the state's nongame resources and provide direction for the approval and funding of State Wildlife Grant projects. In the West Branch Delaware and Delaware rivers, limited information is available for characterizing nongame fish populations. Synoptic surveys have addressed the occurrence and habitat utilization of identified priority species of concern (e.g., dwarf wedgemussel and bridle shiner) within the SWAP. Many other commonly abundant nongame fish serve important ecological roles. Community composition can be altered by introductions of invasive species. The PFBC will work to safeguard nongame fish while assessing the increase of invasive species through the development of a survey program



American Shad

designed to characterize aquatic communities instead of focusing on individual fish species.

Smallmouth bass represent the single largest recreational fishery in the mainstem Delaware River. The PFBC annually monitors the smallmouth bass population. The bass population is typically well supported by multiple size and age classes; however, its abundance can fluctuate annually depending upon a variety of influences. These population fluctuations can, at times, be significant. Channel catfish and walleye are also popular sport fisheries. Long-term information pertaining to these populations is limited. The PFBC will continue to monitor the population of smallmouth bass and develop monitoring protocols for channel catfish and walleye populations. These programs will be adjusted, as necessary, to best measure the populations



Shortnose Sturgeon-Pennsylvania endangered species

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and manage them in accordance with their respective statewide management plans.

The Delaware River Basin supports diadromous species (migratory fish species that use both marine and freshwater habitats during their life cycle) including striped bass, American shad, American eel and river herring. While the restoration of the Atlantic coast striped bass population is a tremendous success, the coast-wide decline of American shad and river herring threatens a natural historical legacy. Since the agency's establishment in 1866, PFBC has been tasked with returning American shad to historic population levels in the Commonwealth's waters. Interstate management strategies for diadromous fishes that inhabit the state waters of the Atlantic coast are under the direction of the Atlantic States Marine Fisheries Commission (ASMFC), of which Pennsylvania is a member. Interstate fisheries issues are also vetted through the Delaware River Basin Fish and Wildlife Management Cooperative (DRBFWMC). It is in cooperation with these two organizations that PFBC actively supports programs aimed at rebuilding the stocks of migratory species. Recent efforts by PFBC have included monitoring the annual adult spawning population in the Delaware River and supporting a restoration program within the Lehigh and Schuylkill rivers, major tributaries to the Delaware River. In 2009 and 2010, the ASMFC approved Amendments 2 and 3, respectively, to the Interstate Fishery Management Plan for Shad and River Herring. These amendments included significant restrictive management actions for river herring and American shad populations by the year 2012 (river herring) and 2013 (American shad). These management efforts will be adjusted, based upon restoration success for the tributary waters and the development of a shad management plan as required by ASMFC Amendment 3 by the collective basin states through the DRBFWMC.



Channel Catfish

Given its close proximity to the major metropolitan areas of Pennsylvania, New York and New Jersey, the wild and scenic characteristics of the West



Walleye

Branch Delaware and Delaware rivers offer vast opportunities for memorable experiences for millions of people. Some of these opportunities, which are available within the three national parks and various state and municipal public lands located throughout the river basins, include fishing, recreational boating, water trails and nature viewing. The PFBC strives for public awareness and involvement in fishing and boating. These activities include providing access to biological reports, developing educational curricula for grades K-12 and various other outreach programs. Through the efforts of PFBC and our partners, we hope to realize the full potential of this resource through a broader interdisciplinary approach.

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PRIORITY 1

Ongoing activities or recommendations to be implemented within one year of the management plan.

- Continue annual, directed sampling of adult and young-of-year (YOY) smallmouth bass for characterizing population trends within the Delaware River. YOY fish are fish in their first year of life and range in size from 1 to 4 inches.
- Continue annual monitoring of the American shad spawning run in the Delaware River per ASMFC Amendment 3 mandates.
- Develop a monitoring approach for quantifying fish communities in order to provide insight into trends in the fish community and identify changes to existing communities.
- Continue to coordinate with PA DEP, DRBC and other associated agencies involved with managing NYC reservoir releases to ensure the protection and enhancement of aquatic communities these releases affect.
- Promote NY DEC and PFBC white paper flow recommendations to protect and enhance the coldwater fishery of the upper Delaware River.



Delaware River smallmouth bass

- Identify habitats for species of concern as prioritized by the *State Wildlife Action Plan* within the West Branch Delaware and Delaware rivers.
- Continue to provide web-based summary articles on the status of PFBC activities related to the West Branch Delaware and Delaware rivers.

PRIORITY 2

Recommendations to be implemented within three years of the management plan.

- Coordinate with PA DEP to develop fishery-based measures for a high-quality, warmwater fishery designation in 25 PA Code Chapter 93.
- Coordinate with NY DEC fisheries staff to evaluate the feasibility of annual quantification of YOY and adult trout populations in the West Branch Delaware and Delaware rivers.
- Develop protocols for supporting angler use and harvest surveys to describe trends in angler behavior and aid in regulatory and management practices.



The Shad in Schools Program involves students in shad restoration and conservation efforts in the Delaware River and its tributaries.

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PRIORITY 3

Recommendations to be implemented within five years of the management plan.

- Develop monitoring programs for channel catfish and walleye for assessing baseline population status and implement statewide management plans for these species.
- Identify opportunities for combining resources with other governmental agencies to maximize the ability for field activities, while reducing the associated cost.
- Coordinate with partner agencies to determine the feasibility of installation of water quality monitoring stations in the upper Delaware River Basin above Callicoon, New York, to assess the extent of the coldwater tailrace in the upper Delaware River.



Smithfield Beach, Delaware River



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PFBC Mission:

The mission of the Pennsylvania Fish & Boat Commission is to protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.

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