

# INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

2 0 0 0   A N N U A L   R E P O R T



*60th Anniversary*

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## ICPRB MISSION

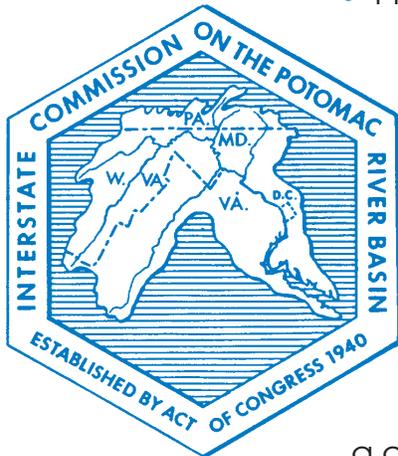
*Our mission is to enhance, protect, and conserve the water and associated land resources of the Potomac River basin through regional and interstate cooperation.*

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## ICPRB GOALS

- Lead in the coordination of basin-wide interstate and regional efforts to improve and protect water quality and related resources.
- Aggressively act to stimulate federal, state, and local initiatives to improve and protect water quality.
- Provide liaison with citizen and governmental groups that results in actions or establishment of coalitions that address water related issues.
- Create an active and informed constituency for basin water related issues.
- Provide technical support to assure water related issues are addressed through sound science and credible technological methods.
- Secure adequate funding to conduct programs in a comprehensive, basin-wide manner.
- Continue national and international roles as a partner and facilitator with other regional basin groups in fostering cooperation.
- Structure internal operations for the most effective delivery of services.



*The ICPRB is an interstate compact commission established by Congress in 1940 that helps the Potomac basin states and the federal government to cooperatively address water quality and related resource problems in the Potomac basin. Represented by appointed commissioners, the ICPRB includes the states of Maryland, Pennsylvania, Virginia, and West Virginia, the District of Columbia, and the federal government.*

*This publication has been prepared by the staff of the Interstate Commission on the Potomac River Basin. Funds for this publication were provided by the signatory bodies of the Interstate Commission on the Potomac River Basin.*

Published May 2001

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*The Potomac River is the lifeblood of the region and is justly called the "Nation's River." The lives of the more than five-million basin residents, 75 percent of whom live in the Washington metropolitan area, are touched daily by the usually silent giant that runs through the nation's capital. It is the region's major source of drinking water, accepts the effluent from waste treatment plants, cools power generation plants, and with the attendant C&O Canal, serves the recreational needs of a culture that treasures its precious "down time."*

## ICPRB: *Protecting a River...*

**G**ood resource management requires integration and coordination of activities concerned with the development, utilization, and conservation of the waters and land resources of the Potomac River basin. The ICPRB helps control and prevent the pollution of the waters of the Potomac drainage area; coordinates and supports activities of public and non-public entities concerned with water and associated land resources in the Potomac River basin; and promotes public understanding of these issues and activities, and the need for enhancement of the basin's resources.



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### COMMISSIONERS

The ICPRB Commissioners represent the commonwealths of Pennsylvania and Virginia, the states of Maryland and West Virginia, the District of Columbia, and the federal government. These individuals, appointed by their respective jurisdictions, set policy and provide guidance for the commission, an interstate compact agency.

### STAFF AND PROGRAMS

Complementing the commissioners is a professional staff that has gained a strong reputation for delivery of sound science and analysis that arms decision-makers at various government levels with the facts and technical data to resolve issues concerning the watershed. The staff efforts focus on four primary areas of involvement: Water Resources, Living Resources, Water Quality, and Education and Outreach.

### COOPERATION AND PARTNERSHIPS

As the commission enters the new century, cooperative skills for encouraging the jurisdictions to coordinate actions on water quality issues are increasingly needed. The ICPRB works with numerous partners throughout the basin to assist in cooperatively addressing the basin's major challenges. ●

# *Preserving a Quality of Life.*



## CHAIRMAN'S MESSAGE

by **Philip W. Ogilvie, Ph.D.**  
Chairman and District of Columbia Commissioner

*On retiring as the Public Records Administrator of the District of Columbia in January of 1998, I was asked if there were any boards or commissions on which I wished to serve. I immediately responded that my longtime interest had been in the Potomac River and that I would love to be appointed to ICPRB.*

The mayor honored my request, and I have enjoyed my three years on the commission as much as I anticipated. My dual interests in history and the environment come together in this body's work, past, present, and future.

From 1938 to 1945, the jurisdictions that occupy

the Potomac basin (Virginia, the District of Columbia, Maryland, West Virginia, and Pennsylvania) and the federal government came together to form the ICPRB. In the subsequent years, the river has recovered, or is recovering, much of its biological potential, as pollution has been reduced and land practices

## ICPRB COMMISSIONERS

### DISTRICT OF COLUMBIA

**Theodore J. Gordon** is the Chief Operating Officer of the District of Columbia Department of Health, and has served the District in a number of other positions.

**Hamid Karimi**, Alternate Commissioner, is Program Manager of the Department of Health Watershed Protection Division.

**Philip W. Ogilvie\*** served as the Public Records Administrator of the District of Columbia. He is an author and consultant, and a member of several environmental organizations.

**James H. Hannaham**, Alternate Commissioner, serves on several environmentally related boards and committees.

**Lloyd Preslar** is the Administrator at First Baptist Church of Washington, D.C. He previously founded a technology-related consulting firm and was on the editorial staff of the *Baltimore Sun* newspapers.

**Anne D. Snodgrass**, Alternate Commissioner, is involved in numerous volunteer efforts and is active in District environmental issues.

### MARYLAND

**James H. Gilford\*** is a consultant on fish and wildlife ecology, management, and toxicology, and is the outdoor editor of the *Frederick News Post*. He has been the director of a fly fishing school and remains active in a number of fly-fishing organizations.

**Minnie Pohlmann**, Alternate Commissioner, has worked as an environmental planner and has been active in many local and state conservation and planning committees.

**Gov. Parris N. Glendening**, is serving his second term as governor.

**Robert M. Summers**, Alternate Commissioner, is Director of the Technical and Regulatory Services Administration of the Maryland Department of the Environment.

**George H. Shoemaker**, is the Environmental Manager of the Westvaco Luke Paper Mill. He previously was the plant superintendent of the Upper Potomac River Commission.

**John Parran Bowling**, Alternate Commissioner, is a farmer who is involved in the Charles County Farm Bureau and other local organizations.

### PENNSYLVANIA

**Irene B. Brooks\*** is the Executive Director of the Pennsylvania Department of Environmental Protection's Office of River Basin Cooperation, which coordinates state activities on interstate river and estuary programs. She represents the state to ICPRB and other river basin commissions.

**John T. Hines**, Alternate Commissioner, is Associate Director in the Department of Environmental Protection's Office of River Basin Cooperation, where he oversees program operations and serves as an advisor.

**William I. Plank** owns and operates a beef farm in Bedford County. He is involved in local watershed projects, is a member of the board of county extension service, and is active in several conservation organizations.

**Roger C. Steele**, Alternate Commissioner, is a retired high school biology teacher who runs a small farm operation, and is associated with a specialty nursery. He is an Adams County Conservation District board member.

improved. In evaluating the work of the commission in the 60 years of recovery, it is important that the results be compared to the ecology of this area in the past. Attention must also be given to the commission's role in diminishing present threats to the river, such as continued acid drainage from coal mines, non-point pollution, and urban sprawl.

I believe that the commission's greatest challenge is to make itself and its work known to its natural constituency. Our executive director has taken a long step in this direction by creating a new outreach position on staff. It is most important that we educate the citizens of the basin to that service. It also is important that we secure greater federal participation in the work of the commission.

In the past, we have concentrated first on water quality and more recently on quantity and availability. Without minimizing either of these vital roles, we must add the recreational utilization of the river.

When Congress designated a corridor for a "Potomac Heritage National Scenic Trail," they selected a corridor rich in every aspect of human interaction with the environment. The geomorphology of the corridor resulted in the science of geomorphology. The corridor is bracketed by the two oldest investigated sites of human habitation in North America, Meadowcroft in Pennsylvania and Cactus Hill in Virginia. The stories of human contacts between ethnic groups, both positive and negative, are just below the surface. It has been the scene of environmental tragedies and triumphs and the resulting ecological assemblage is rich in diversity.

As we enter the new millennium, the protection of our waters and their related economic and cultural resources demands the type of watershed approach that ICPRB continues to practice. It is our job to see that this approach extends to all facets of the basin. ●

## VIRGINIA

**Del. Vincent F. Callahan, Jr.**, is the ranking Republican member of the Virginia General Assembly and dean of the Northern Virginia delegation. An editor and publisher, he heads a firm specializing in aerospace, oceanography, and environmental information.

**Del. John A. Rollison III**, Alternate Commissioner, serves in the Virginia House of Delegates. He owns a tire and auto repair company and is involved in real estate.

**Gloria Taylor Fisher\*** is a civil engineer in private practice with extensive international environmental consulting experience. She has served as director of the Northern Virginia Soil and Water Conservation District.

**Mary Ann Patterson**, Alternate Commissioner, is the Public Relations and Education Coordinator for the American Horticultural Society.

**Dennis H. Treacy** is the Director of the Virginia Department of Environmental Quality. He has worked in industry, and served as assistant attorney general in the natural resources section of state government.

**Michael D. Clower**, Alternate Commissioner, is the Executive Director of Virginia's Chesapeake Bay Local Assistance Department and is active in several Chesapeake Bay program committees.

## WEST VIRGINIA

**Michael C. Castle** was the Director of the state's Division of Environmental Protection.

**William Brannon**, Alternate Commissioner, is the assistant chief of Coordination and Development for the West Virginia Office of Water Resources. He is closely involved in the state's TMDL process.

**Del. Harold K. Michael** serves in the state legislature. He is an insurance agent and is involved in many community organizations.

**Larry Smith**, Alternate Commissioner, is a horticulturist and board member on the Eastern Panhandle Soil Conservation District. He is involved with several community groups.

**F. Scott Rotruck\*** is the Economic Development Director and Senior Advisor for West Virginia University. He has worked with West Virginia industries and has been involved in river issues in several basins.

**Phyllis M. Cole**, Alternate Commissioner, served as an assistant to Governor Cecil Underwood. She is Vice President of Petersburg Central Tie and Lumber Co., and has long been active in the region's public concerns, particularly in providing flood control to Grant County.

## UNITED STATES

**Jean R. Packard\*** is involved in many conservation efforts and organizations in and around Fairfax County, Va. She has served as chairman of the Fairfax County Board of Supervisors and president of the Metropolitan Washington Council of Governments.

**Stella Koch**, Alternate Commissioner, is the Virginia Conservation Associate for the Audubon Naturalist Society of the Central Atlantic States. She serves on the board of the Center for Watershed Protection.

**Daniel J. Weiss** is the political director of the Sierra Club. He has extensive experience in issues including those relating to the Clean Air Act and the Water Quality Act of 1987.

**Yeni Wong** is a businesswoman active in a range of local business and community groups in the Washington metropolitan area. She is a research chemist by training.

\*Executive Committee Member

## The ICPRB Officers:

**Philip W. Ogilvie**, Chairman

**James H. Gilford**, Vice Chairman

**Joseph K. Hoffman**, Executive Director

**Robert L. Bolle**, General Counsel



# ICPRB's 60th Anniversary

was marked at various river-related events during the year and by a series of interviews about the commission, its history in the Potomac cleanup, and future directions in the commission newsletter.

The anniversary was celebrated by commissioners, staff, and guests at the ICPRB annual meeting held at the National Conservation Training Center in Shepherdstown, W.Va. Highlighted by a dinner and reception marking the agency's 60 years, the event's two days of seminars will help chart a course for the future. The "Water Resources for a New Century" forum featured a variety of speakers who discussed aspects of water resources in the Potomac basin. Major topics included the need to address basin-wide issues at the local level through local support and involvement in management issues, the importance of developing partnerships throughout the basin, and the need for continued research that will provide tools for management challenges, such as the creation of total maximum daily load (TMDL) plans.

During a second forum, participants explored future roles for ICPRB in the 21st century. A panel of ICPRB commissioners raised several points, including the need for the commission to assume



ICPRB 1999-2000 Chairman F. Scott Rotruck cuts the 60th anniversary cake as (l-r) Federal Commissioner Jean Packard, Keynote Speaker Col. Charles Fiala (U.S. Army Corps of Engineers), D.C. Commissioner James Hannaham, Virginia Commissioner Gloria T. Fisher, Maryland Commissioner Robert Summers, and Pennsylvania Commissioner Irene Brooks look on.

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a growing role in facilitating inter-jurisdictional exchange of technology and education, bringing regional concerns into focus on the local level, and communicating a consistent message throughout the basin. Expanding outreach, particularly to poor and minority communities, and developing a leadership role in the watershed were further priorities. Many attendees and other featured speakers concurred with the panelists' points.

The meeting provided many valuable insights that will serve as a basis for fine-tuning ICPRB's strategic plan during workshops to be held in 2001. •



Commissioners at the 2000 annual meeting. Standing (l-r), Philip Ogilvie (D.C.), Irene Brooks (Pa.), Anne Snodgrass (D.C.), William Brannon (W.Va.), Robert Summers (Md.), Stella Koch (U.S.), Dennis Treacy (Va.), James Hannaham (D.C.), Roger Steele (Pa.), Michael Clower (Va.), William Plank (Pa.). Seated (l-r); Jean Packard (U.S.), Minny Pohlmann (Md.), F. Scott Rotruck (W.Va.), Gloria T. Fisher, (Va.), Hamid Karimi (D.C.).

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## Water Resources for a New Century

by **JOSEPH K. HOFFMAN**, Executive Director

*Closing the books on the year 2000 and the 60th year of the commission provides an opportunity to look back, as well as to focus on the future.*



Executive Director Joseph K. Hoffman, a Civil Engineer, joined the commission in 1998. He previously worked in a variety of water resources positions for the Pennsylvania Department of Environmental Protection for nearly 27 years.

## *Celebrating 60 Years of Leadership and Service*

The commission theme of “Celebrating 60 Years of Leadership and Service” during our milestone year sets a standard for that future. During 2000, the water resources staff, with the water suppliers for the metropolitan area, determined that water supply demand for the year 2020 can be met with existing resources. Restrictions on water use may be required during some periods to ensure continued supplies in the region. During an investigation for the Maryland Department of the Environment, we determined that consumptive uses (where water is not returned to the system) in the basin are growing and will have impacts on future availability.

In 2000, four of our member jurisdictions signed a new Chesapeake Bay Agreement. West Virginia, which is not a signatory state, participates in the Bay’s Water Quality Steering Committee, joining efforts to find ways to eliminate impairments to the bay and river. These cooperative efforts are the way this commission functions and it is the way in which non-regulatory measures will lead to bay improvements in the future.

Improving the water quality of the Potomac basin remains a continuing activity for all. The commission led a number of efforts, including modeling,

to assist the member jurisdictions in establishing total maximum daily load allocations for streams throughout the basin. We will continue that process.

The success of shad restoration in the Potomac River is a story worth repeating. The ICPRB’s Jim Cummins leads a multi-agency effort that resulted in the collection of about 3.2-million American shad eggs in 2000. We found shad above Little Falls Dam from fry stocked in previous years. Success appears to be on the horizon.

Recent initiatives at national and local levels directed at assessing sources of drinking water have focused District of Columbia and ICPRB staff attention to source water quality. Supporting the District’s source water assessment project will allow the commission to increase its knowledge and assistance to other jurisdictions in meeting their needs to assess the potential for contamination of drinking water sources in the basin.

Commission staff continue to play vital roles in a number of basin issues. We highlight many of these in this report. Readers wanting more details can contact our office or visit our website.

The ICPRB commissioners and staff are embarking on new challenges. The 2000 Annual Meeting, held in September, included a water resources discussion and review of actions that the member states want ICPRB to undertake. Commissioners and staff are involved in a strategic planning process to find ways that ICPRB can continue to lead a variety of efforts in the basin. As a non-regulatory agency, we must use non-traditional watershed approaches to serve and find solutions for a myriad of water issues now and in the future. ●

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**BUILDING BASIN-WIDE PARTNERSHIPS** *The ICPRB was formed in 1940 with the realization that the basin's severe pollution problems could only be addressed through the cooperation of the basin states and the federal government. The same spirit of cooperation is guiding the agency into the next century.*

**T**asked with the protection and enhancement of the waters of the entire basin, ICPRB, a non-regulatory agency, is strongly focused on



*Commissioners from the basin jurisdictions meet regularly as partners to discuss watershed issues.*

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building the cooperative partnerships and linkages that its mission requires. Partnerships create opportunities for more efficient action, reduce duplication of efforts, and leverage resources to address water quality and related issues.

The health and quality of life of the basin's residents benefit from the networks created through ICPRB efforts. Along the Potomac's North Branch, Maryland, West Virginia, the federal and local governments, and industry have increased efforts to address acid mine drainage and foster a tourism economy based on improved water quality that

creates fishing, boating, and other opportunities. In the Monocacy watershed, government agencies and citizens groups from Maryland and Pennsylvania are joining forces to create a new vision for the watershed. In the metropolitan area, Maryland, Virginia, and District of Columbia water utilities coordinate activities to efficiently provide water during droughts. Research on the tidal Potomac benefits the basin states and assists federally-led efforts to restore the Chesapeake Bay.

Many commission projects provide direct contact and opportunities for public involvement. These projects provide many rewards:

- Watching volunteers find common ground during cleanup events,
- Seeing the wonder in the eyes of school students who assist in netting shad and raising shad fry,
- Providing canoeists with river information for their next outing,
- Assisting citizens groups in protecting their watersheds, and
- Delivering presentations to school and citizens groups.

These efforts are rewarded with the growth of a coalition of educated citizens who recognize the importance of their involvement in the river's health with their quality of life. ●

### **SOME OF THE ICPRB PARTNERS DURING 2000 INCLUDE:**

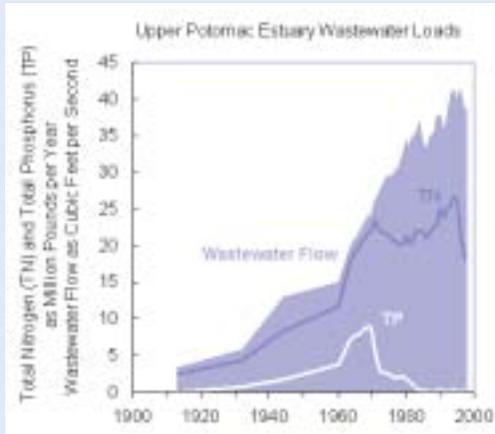
- The basin jurisdictions' environmental and natural resource agencies
- U.S. EPA/Chesapeake Bay Program
- U.S. Geological Survey
- U.S. Fish and Wildlife Service
- National Park Service
- Alice Ferguson Foundation
- Chesapeake Bay Trust
- Maryland Tributary Teams
- National Fish and Wildlife Foundation
- Anacostia Watershed Restoration Committee
- Virginia Chesapeake Bay Restoration Fund
- Potomac Crossing Consultants
- Metropolitan Washington Council of Governments
- Friends of the Potomac
- U.S. Army Corps of Engineers
- Metropolitan Washington Water Utilities
- Potomac Conservancy
- Chesapeake Bay Foundation
- Arakawa Sakura Club

# A POTOMAC BASIN SNAPSHOT

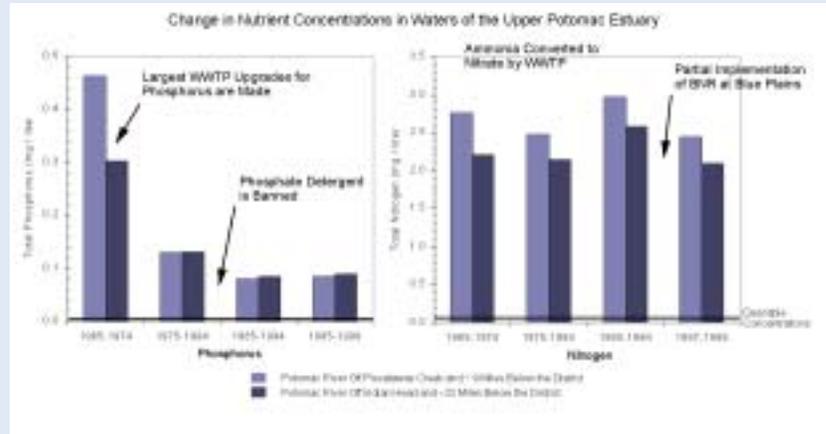


Gaging the health of the basin's waterways is a complex business. Each of the basin jurisdictions has its own system of standards and designated uses. All the ICPRB members are assessing their waters to list those not meeting designated uses. In 2000, ICPRB led an integrative analysis of a wide range of data to assess the health of the tidal Potomac. Here are some highlights.

**NUTRIENTS** currently are the focus of pollution control efforts for the Potomac and the Chesapeake Bay. Too much nitrogen and phosphorus affect oxygen levels, reduce water clarity, and increase algae levels. Nutrients from wastewater treatment plants have been significantly reduced, but levels in the estuary are still not low enough to control harmful algae levels.

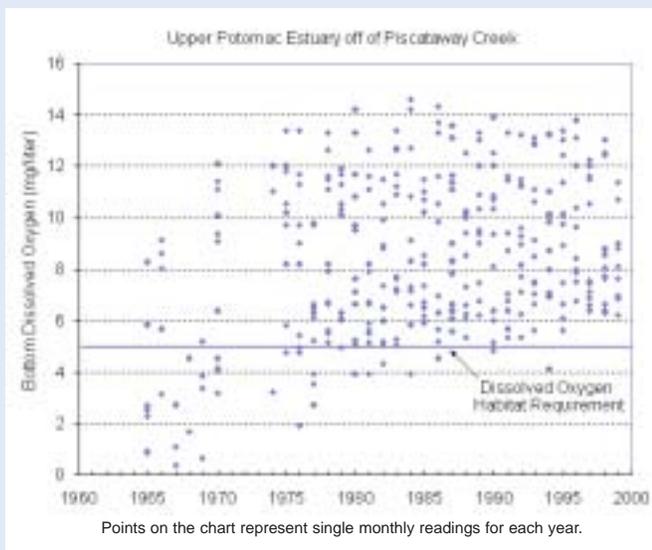


Phosphorus loads in wastewater were significantly reduced in the 1970s. Biological nitrogen removal (BNR) at Blue Plains Regional Wastewater Treatment Plant, begun in late 1996 and scheduled for other area plants, is significantly reducing nitrogen loads to the estuary.



Water quality improvements are evident in decadal averages of estuary phosphorus concentrations downstream of the metropolitan area. Partial implementation of biological nutrient removal at Blue Plains is beginning to lower nitrogen concentrations downstream.

**SEDIMENTS** wash off agricultural and forested lands, suburbs, and city streets, carrying nutrients and toxic substances into waterways. They reduce water clarity, destroy the habitats of plants and animals, and require dredging of navigational channels. The amount of sediments carried into the estuary is highly dependent on frequency and severity of storm events.



(ABOVE) Wastewater treatment plant upgrades significantly improved the 1970s "oxygen sag" below the metropolitan area. Bottom dissolved oxygen concentrations now meet the dissolved oxygen habitat requirements of living resources.

(RIGHT) Water clarity does not meet the Chesapeake Bay Program requirements for aquatic vegetation in many areas. No significant trends were observed in the past 15 years.

**DISSOLVED OXYGEN** is critical to life in the river. Levels of oxygen in the water, used by fish and plants and required for the decay of matter in the river, are affected by nutrient and sediment loadings and aquatic vegetation. Oxygen levels are generally adequate in the non-tidal river and upper estuary, but deep waters in the lower estuary are oxygen-starved during the summer.

**WATER CLARITY** is a sign of a healthy waterway, denoting acceptable nutrient and sediment levels.



Clear water allows more sunlight to reach aquatic plants, creating better biological habitat. Water clarity has not improved across most of the estuary, but does meet plant habitat requirements near the mouth and the metropolitan Washington area. ●



## A POTOMAC BASIN SNAPSHOT *The revitalization of the waters of the Potomac Basin*

*story. The river has gone from being described as an “open sewer” to providing safe drinking water for millions of residents. Nutrient and sediment loadings and low dissolved oxygen levels in some areas challenge water quality. Bay-related goals for nutrients and population growth are the major causes of these loadings.*

### POTOMAC BASIN BASICS

**THE BASIN:** Drainage area includes 14,670 square miles in four states: Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia.

**MAINSTEM LENGTH:** 383 miles from Fairfax Stone (W.Va.) to Point Lookout (Md.); Tidal reach: 108 miles.

**MAJOR TRIBUTARIES:** Shenandoah, South Branch, Monocacy, Savage, Cacapon, Anacostia, and Occoquan Rivers; Antietam and Conococheague Creeks.

**POPULATION:** Approximately 4.6 million; 3.7 million in Washington Metropolitan Area.

**MAJOR INDUSTRIES:** Agriculture and forestry throughout the basin; coal mining, pulp and paper in the North Branch; high-tech, service, and light industry, military and government installations in the Washington Metropolitan Area; fishing in Potomac Estuary.

**FLOW:** Largest flow at Washington, D.C., in March 1936 was 275 billion gallons per day. Average is about 7 billion gallons per day. Lowest flow in September 1966 was 388 million gallons per day before water supply withdrawals.

**WATER SUPPLY:** Average of 480 million gallons of water withdrawn daily in the Washington area for water supply. Approximately 100 million gallons per day of ground water used in rural areas.

#### Percent of Assessed River, Lakes, and Estuaries Meeting All Designated Uses

0% – 19% Meeting All Uses  
 20% – 49% Meeting All Uses  
 50% – 79% Meeting All Uses  
 80% – 100% Meeting All Uses  
 Insufficient Assessment Data

Streams

State Boundary

Cities

basin during the last several decades is a true success  
r and valuable recreation opportunities for basin  
e the gains that have been made. Land use change  
xygen have not been met.

## MARYLAND

**Population:** 1.74 million (37.9%)

**Area in Basin:** 3,818 sq. mi. (26%)

**Stream Miles:** 4,335  
(including mainstem Potomac)

## PENNSYLVANIA

**Population:** 143,980 (3.1%)

**Area in Basin:** 1,570 sq. mi. (10.7%)

**Stream Miles:** 3,553

## VIRGINIA

**Population:** 1.92 Million (41.8%)

**Area in Basin:** 5,723 sq. mi. (39%)

**Stream Miles:** 5,601

## WASHINGTON, D.C.

**Population:** 607,000 (13.2%)

**Area in Basin:** 69 sq. mi. (0.5%)

**Stream Miles:** 45

## WEST VIRGINIA

**Population:** 180,000 (3.9%)

**Area in Basin:** 3,490 sq. mi. (23.8%)

**Stream Miles:** 2,671

**A CLEANER POTOMAC**  
*means greater recreational use, creating a  
constituency for it's health. Some frequently  
asked questions include:*



## CAN I EAT THE FISH?

Black bass, trout, and striped bass are targeted by anglers, along with catfish, sunfish, and carp. Several areas of the basin are under fish consumption advisories issued by the jurisdictions for toxins found in the tissues of some species:

- **North Branch Potomac from Luke, Md., to mouth, and Potomac River from mouth of South Branch to mouth of Cacapon River:** Do not eat nongame fish because of dioxin (issued by W.Va.).
- **South Fork, North Fork, and Shenandoah River segments, Va.:** Avoid eating fish because of PCBs.
- **Shenandoah River, W.Va.:** Do not eat carp, channel catfish, suckers.
- **South Fork Shenandoah and South River segments, Va.:** No more than eight ounces of any species per week because of mercury.
- **Potomac, Anacostia, Rock Creek, and tributaries in the District of Columbia:** Do not eat carp, catfish. No more than eight ounces per month of large-mouth bass or eight ounces per week of sunfish or other species because of PCBs and metals.
- **Potomac from D.C. south to Smith Point, Md., and Chopawamsic, Quantico, and Powells creeks, Va., and the Potomac's Quantico embayment (Md. and Va.):** No more than eight ounces per month of catfish or carp larger than 18 inches because of PCBs.

*Pregnant women and children are generally advised to abstain from consuming fish from these areas.*

## IS IT SAFE TO SWIM?

There often is no easy answer. People swim in many areas of the Potomac and its tributaries without incident. Coliform bacteria levels are used to gage water contact safety, but only a few areas (designated bathing beaches and oyster reefs) are monitored frequently for the organisms, whose numbers can rise and fall quickly with rains that carry bacteria and organic matter into streams. Bacterial levels rise immediately after storms and usually fall a few days afterward. Swimming is prohibited in the waters of the District of Columbia. ●

*Map Source: Based on information in most recently available state 305(b) reports, and U.S. EPA. Map does not imply uniformity in assessment, since each of the state jurisdictions use different methods for defining and determining river miles meeting designated uses.*



**WATER QUALITY** of the basin's streams and rivers determines their ability to provide the many benefits the region's residents have come to expect—ample supplies of drinking water, healthy fish populations, recreation, and other uses.

The Potomac basin states continue to assess their waterways' ability to meet designated uses and to implement measures to correct problems. The commission's water quality program assisted the states in three principal ways:

- Total Maximum Daily Loads (TMDLs),
- The Chesapeake Bay Program, and
- Interstate coordination of their improvement efforts.

The TMDL process determines the sources and amounts of a pollutant or problem and devises a plan to reduce the amounts (loads) to attain designated water quality standards.

For TMDLs, the commission is developing mathematical models of watersheds that the states can use to evaluate options for reducing pollutant loads



Commissioners and staff from ICPRB and the District of Columbia examine fish taken during a survey of the Anacostia River. The ICPRB is working in partnership with the District and Maryland to restore the Anacostia watershed.

until water quality criteria are met. In 2000, the commission completed a dissolved oxygen and sediment model of the tidal Anacostia River for the District of Columbia, and began development of a model of the non-tidal Anacostia watershed for Maryland. In 2001, the commission will make improvements to its dissolved oxygen/sediment

## WATER QUALITY STAFF

**Carlton Haywood** is the Associate Director for Water Quality, managing ICPRB's water quality program and its information systems. He has a B.A. in Environmental Studies and Geology and has done graduate work in Physical Geography.

**Ricky Bahner** is assigned to the U.S. EPA Chesapeake Bay Program, Annapolis, Md., where she is the Water Quality Database Manager. She holds a B.S. degree in Human Resources Development, and has 17 years of experience working with environmental data.

**Alexander Karlsen**, an Environmental Scientist, works on water quality models. He holds a B.A. in Geology, and M.S. in Environmental Science and Public Policy.

**Mary Ellen Ley** is assigned to the U.S. EPA Chesapeake Bay Program as the Monitoring Coordinator. She has a B.S. in Chemistry and over 20 years experience in laboratory analysis of water and quality assurance.

**Mitchell Manchester** is an Environmental Engineer who models water quality and assists stream groups. He holds a B.S. in Biological Resource Engineering.

**Ross Mandel**, Senior Environmental Scientist, primarily works with water quality simulation models. He has an M.S. in Environmental Engineering and a Ph.D. in Philosophy.

**Cherie Schultz**, Senior Environmental Scientist, works on water quality and sediment transport models, with several groups addressing toxic pollution, and with a local watershed group on issues concerning non-point source pollution and storm water management. She has a B.A. in Physics, M.S. in Civil Engineering, and Ph.D. in Physics.



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*The quality of the basin's waters allows many uses, ranging from industrial, to boating and fishing, to viewing the river.*

tidal Anacostia model and develop a new model for toxic substances for the District. The commission will continue development of its non-tidal Anacostia model for Maryland and expects to begin development of models for other watersheds in Maryland's part of the basin. The commission will also begin development of several models for watersheds in Pennsylvania.

## The restoration of the Chesapeake Bay is a major regional priority.

*Research on the Chesapeake Bay benefits the Potomac and its fisheries.*

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As the second largest bay tributary with its largest population concentration, Potomac basin pollution reduction is a significant part of the bay restoration effort. The commission assists the states in that effort by participating in many of the inter-agency committees that manage the Bay Program. Staff work on Bay Program water quality and living resources databases, and on several Bay Program supported projects such as providing assistance to the Anacostia River Business Coalition. These contributions by the commission will continue in 2001.

## The Potomac basin is an interstate watershed, with its waters flowing from one jurisdiction to another.

As a regional organization, the commission has important roles to play in improvement efforts, whether through TMDLs, the Chesapeake Bay, or participating in regional committees and stakeholder groups that are formed to address specific problems. Commission staff bring to these groups their technical expertise on water quality problems and solutions, as well as a basinwide perspective on how other jurisdictions are approaching similar problems. In 2000, commission staff were involved in technical and citizen advisory groups in all the jurisdictions. ●



**DRINKING WATER** from the Potomac River is relied on by the majority of the basin's residents. The ICPRB works with states, local governments, and metropolitan Washington area water suppliers in several efforts to protect critical drinking water supplies and ensure that there will be enough water for the region's residents. Commission operations will be an important tool in ensuring that water systems can meet demands as the region grows.

The ICPRB Section for Cooperative Water Supply Operations on the Potomac (CO-OP) staff completed a 20-Year Water Supply Demand Study for the metropolitan area water utilities and other parties to the agreement that allocates Potomac resources during drought conditions. To assess water demand in 2020, staff used a range of growth projections for the area, assessed current and future water use, and the current system's ability to meet future demands. The study concluded that under even high growth projections, the current system will meet 2020 demand during a drought of record, with some water-use restrictions required during extreme droughts. By 2030, a drought of record is likely to deplete current reservoir storage. Climate change also could significantly impact the reliability of the system. The report is available on the commission's website.

**A study to assess the net demand for the entire basin upstream of Washington also was completed during the year for the Maryland Department of the Environment.**

The Water Supply Demands and Resources Analysis in the Potomac River Basin study assessed current and future sources and demands for water, primarily for the non-tidal portion of the watershed upstream of the metropolitan area. By 2030, if extreme drought occurs, some deficiencies may be experienced in meeting all of the forecast municipal water demand and recommended minimum instream flows, even with restrictions. The study is a valuable tool in addressing future adequacy of water resources.

**The ICPRB continues to work with the District of Columbia Department of Health to assess its drinking water source.**

Commission staff identified the portion of the Potomac River basin that contributes to the District's source water, potential contaminants in that portion of the basin, and is ranking the degree of susceptibility to potential contaminants. The ICPRB is coordinating the work with similar assessments for each of the upstream basin states. Once completed, the source water assessment will provide information from portions of four states within the Potomac watershed to better protect drinking water.

The commission again conducted its annual Drought Preparedness Exercise, which allows metropolitan area water utilities, CO-OP, the Army Corps of Engineers, and other agencies to practice the enhanced operations needed to deliver water during extreme drought conditions. The annual exercises helped provide for the seamless delivery of water during the 1999 drought, and highlighted



*This photo of construction at the Jennings Randolph Reservoir in 1980 recalls the planning for drinking water to ease drought conditions for the metropolitan area. A growing population will require new efficiencies and sources for drinking water in the decades to come.*



*Growing water use in the Shenandoah watershed is encouraging examination of regional management of water resources.* C. DALPRA

areas that require more evaluation. The 2000 exercise included greater coordination with local governments through the Metropolitan Washington Council of Governments in a process that will reduce confusion if water use restrictions are needed in the future. The ICPRB staff also developed a web page to explain the many aspects of the metro area water supply and its management.

## Commission staff began participation on the Technical Advisory Committee formed by the Loud Fairfax Planning District

## Commission to explore the feasibility of managing water supply on a regional basis in the northern Shenandoah valley.

Functions of the committee include developing a request for proposals to conduct a feasibility analysis, assessing proposals and selecting a consultant, and overseeing the work of the consultant. Coordinated management in the northern Shenandoah region will more efficiently meet future municipal water demands balanced with maintaining minimum instream flow requirements for biological and recreational resources. ●

### WATER RESOURCES STAFF

**Roland Steiner**, Associate Director for Water Resources, oversees the work of the CO-OP Section, heading studies to optimize and examine the basin's water resources. Steiner holds B.S. and M.S. degrees in Civil Engineering, and a Ph.D. in Environmental Engineering. He is a registered Professional Engineer in Maryland.

**Erik Hagen**, Water Resources Engineer, formulates and conducts most of the technical analyses for the water supply resource allocation function of the CO-OP Section for regional water suppliers. Hagen earned a B.A. in Art History, a B.S. in Environmental and Civil Engineering, and M.S. in Environmental and Civil Engineering.

**David Vann** is a Water Resources Specialist assisting with sourcewater assessments and working with the commission's geographic information system. He holds a B.S. in Biology and M.S. in Environmental Science.



**LIVING RESOURCES** are what many people think of when envisioning the river. Living resources are closely linked to water quality, and are impacted by other uses of the river. A Potomac watershed that meets public needs and expectations requires healthy, diverse populations of animals and plants.

Understanding the complex web of life in our rivers and streams is an evolving science.

Reams of studies exist, but data by itself tells little. Data often exist in varied forms and can't be easily compared. The ICPRB staff continue to make monitoring data readily available in standardized formats. This helps scientists and managers to measure restoration progress and choose good management approaches. In 2000, a multi-year ICPRB-led project was completed that interpreted disparate data from many sources in the Potomac estuary. A final report assessed the integrated data, and noted that control efforts to reduce nutrient pollution are having a positive effect, although more will need to be done to continue the recovery of living resources in the Potomac estuary. A similar project to characterize the more-complex non-tidal Potomac continued during the year. The ICPRB also is helping to analyze data and develop restoration goals for plankton, the base of the food web that presently is reflecting the bay's generally unhealthy conditions. The project will allow Potomac data to be used by a wider range of researchers.



C. DALPRA

Nutrient removal at the Blue Plains regional wastewater treatment plant and other facilities has reduced nitrogen and phosphorus loads in the adjacent river. The relatively clear Blue Plains effluent plume is seen mixing with the cloudier water of the Potomac River.



Student volunteers assist in processing shad caught in the Potomac.

L. LUU

Other commission efforts are more hands-on, such as projects to restore American shad and river herring populations.

In a program linking state and federal agencies, citizen groups, volunteers, and school students, the shad restoration project harvests fish each spring to obtain eggs and hatch shad fry for placement in the river upstream of Little Falls Dam. Working closely with the U.S. Fish and Wildlife Service Harrison Lake Fish Hatchery, about 3.2 million fry were placed in the river in 2000. A 10-mile stretch of the river upstream, once inaccessible because of the dam, provides excellent habitat for the fry. The dam was recently modified by the U.S. Army Corps of Engineers to allow upstream passage of the fish to the historical spawning area. During the course of

the shad project, nearly 11-million fry have been stocked, and will recognize the upper stretch of the river as their birthplace. After living in the ocean for several years, they have begun to return, and the project is helping to jump-start the population in the river. The National Fish and Wildlife Foundation and the Virginia Chesapeake Bay Restoration Fund helped finance the program.

Similar work was undertaken to reestablish healthy populations of river herring in the Anacostia and Rock Creek watersheds, where blockages to fish passage also are being eliminated.

The project is a partnership with the Metropolitan Washington Council of Governments, with support from Potomac Crossing Consultants and the Maryland Department of Natural Resources.

In a continuing effort, ICPRB is assisting Pennsylvania with biological stream assessments in its portion of the watershed.

Fish, invertebrates, and habitat surveys are used to help determine whether the streams meet designated use standards. During its second year,



*Biological assessment along the Falling Spring in Chambersburg, Pa.*

J. CUMMINS

biological assessments were produced for the Wills, Evitts, and Town Creek watersheds. Some work also was performed in the Conococheague and Marsh Creek watersheds. The information also will be used by the commission in assessments of Potomac basin stream health. ●

## LIVING RESOURCES STAFF

**James D. Cummins** is Associate Director for Living Resources. He works on Anacostia River restoration, North Branch Potomac River revitalization, fish passage at the Little Falls Dam near Washington, D.C., with its linked American shad restoration project, and biological assessments of streams. He holds a B.S. and M.S. in Biology.

**LeAnne Astin** is an Aquatic Ecologist, developing and analyzing living resources databases. She holds a B.S. in Biology and M.S. in Environmental Science and Public Policy.

**Claire Buchanan** is an Aquatic Ecologist with a B.A. in Environmental Studies, and M.S. and Ph.D in Zoology. She also is an Adjunct Professor in the Department of Biology at George Mason University. She plans, develops, directs and participates in projects that foster use of the monitoring data in the Potomac River and the Chesapeake Bay.

**Jan Ducnuigen** is a Biological Analyst with a B.A. in Biology. In addition to chemical and biological stream analysis and fisheries management, he maintains the agency's computer systems.

**Jacqueline Johnson** is assigned to the Chesapeake Bay Program as the Living Resources Database Manager. She holds a B.A. in zoology and M.S. in Chemical Oceanography.



**EDUCATION AND OUTREACH** are essential functions of the commission. The agency informs the public about the basin's waterways, their importance to quality of life, the challenges to keeping them healthy, and how the commission, in cooperation with many other groups, is addressing those challenges. Communicating the connection between the quality of our waters and the quality of life creates a constituency for the health of the basin's rivers.

The commission has begun to enhance services to the public with the designation of a watershed coordinator. This new staff person will work with citizen groups, providing information and tools to assist at the grassroots volunteer level, where important gains to stream health can be made. Efforts will be made to link groups in mean-



*The ICPRB promotes education and stewardship such as stream cleanups. University of Maryland students relax after a cleanup on an Anacostia tributary.*

C. DALPRA

ingful ways to share information and concerns through websites, meetings, and other means.

The commission continued to be a resource for basin residents during the year through its newsletter, the *Potomac Basin Reporter*, which reaches more than 20,000 basin residents. Commission staff continued to enlarge and enhance the ICPRB website ([www.potomacriver.org](http://www.potomacriver.org)) to make the website a more useful tool to assist and link citizens groups in protecting water quality. The commission staff made presentations to groups about aspects of its work, and responded to a wide range of information requests from government officials, students, and the general public.

**Several international groups visited the commission and the basin to learn about resource management in the Potomac watershed, which is gaining a reputation around the world.**

The Arakawa-Potomac Sister River Agreement, which has linked Japan's Ara River to the Potomac to further environmental and cultural exchange, has allowed for a view of our basin from outside, and rewarded the Ara with knowledge of Potomac environmental education and other efforts. ●

## EDUCATION AND OUTREACH STAFF

**Curtis Dalpra**, Public Affairs Officer, directs the commission's public affairs program. He edits the commission newsletter, and produces commission publications. He holds a B.A. in journalism, and has done some graduate biology work.

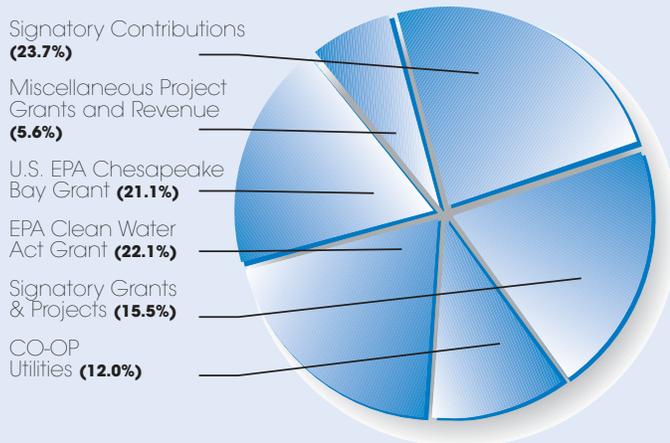
**Jennifer Caddick**, the Assistant Public Affairs Officer, co-edits the newsletter, answers information requests, and works on the website. She holds a B.A. degree in Metropolitan Studies and M.P.S. in Environmental Science.

**Karen Fligger**, Watershed Coordinator, works with watershed groups in the basin. She earned a B.S. in Biology and Environmental Studies. She previously served two years with the Peace Corps in Nicaragua.

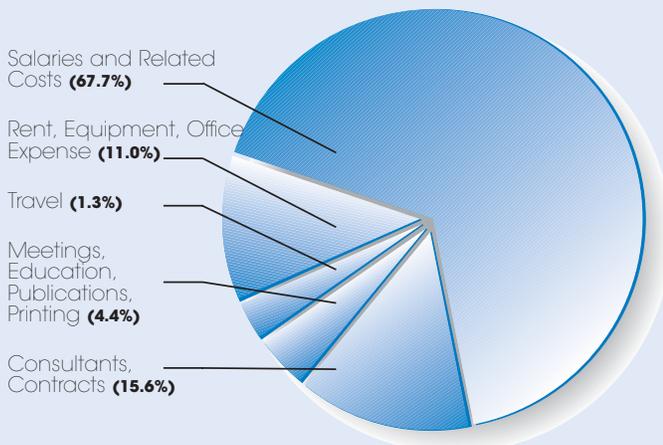
# FISCAL YEAR 2000 FINANCIAL SUMMARY

(AUDITED DATA 10/1/99 - 9/30/00)

## REVENUES



## EXPENSES



## REVENUES

### Signatory Contributions

Maryland.....	\$ 128,169
Pennsylvania.....	39,250
Virginia.....	123,823
West Virginia.....	44,299
District of Columbia .....	56,870
<b>Total Signatory Contributions.....</b>	<b>\$392,411</b>

### Grants and Projects

Maryland DOE.....	\$80,954
Pennsylvania DEP.....	63,652
Virginia Chesapeake Bay Restoration Fund Advisory Committee .....	10,000
District of Columbia DOH.....	65,937
EPA Section 106 .....	366,106
EPA Section 117 .....	349,505
US Fish & Wildlife Service .....	1,200
National Fish and Wildlife Foundation..... (Ches. Bay Prog)	16,689
US Army Corps of Engineers.....	36,981
CO-OP Utilities .....	198,460
Potomac Crossings Consultants .....	21,400
Garrett County Sanitation District (MDE) .....	44,660
<b>Total Grants and Projects.....</b>	<b>1,255,544</b>
<b>Miscellaneous Revenue .....</b>	<b>6,550</b>

**TOTAL REVENUES \$1,654,505**

## EXPENSES

Salaries and Related Costs.....	1,149,566
Rent.....	113,650
Equipment Purchase & Rental .....	25,155
Office Expense .....	46,923
Travel.....	22,443
Education, Publications and Printing.....	55,354
Meeting Expenses.....	18,468
Audit and Accounting, Bonds and Insurance ....	27,437
Consultants .....	48,537
Contracts.....	189,266

**TOTAL EXPENSES \$1,696,799**

## ADMINISTRATIVE UNIT

**Susan M. Jackson** is the Administrative Officer. She has been on staff since 1997. Her responsibilities include budget preparation and planning quarterly meetings for the commission.

**Pat Rosenquist-Beno** has been the commission's Administrative Secretary for the past 22 years. Her responsibilities include office support and maintenance of commission mailing and library databases.

**Merri Maurer** has been the Accounting and Grants Manager for the agency since 1996. She is responsible for accounting, grants management, payroll, and all financial reporting.

**Robert Bolle** serves as the commission's General Counsel. He teaches law and is an attorney in private practice.

## INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

6110 Executive Boulevard, Suite 300  
Rockville, MD 20852-3903

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### POTOMAC BASIN RESOURCES

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#### *POTOMAC BASIN REPORTER*

News and views of the Potomac River Basin are available through this unique ICPRB newsletter that is published six times a year. Subscriptions are free.

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#### PUBLICATIONS AND REPORTS

Commission reports and other publications covering a wide range of topics are available. Contact us for a complete listing.

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#### LIBRARY

The ICPRB maintains an extensive collection of books, pamphlets, periodicals, maps, directories, and government documents relating to the Potomac. Our cataloged library of more than 5,000 volumes is open to the public during business hours.

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#### SPEAKERS & LECTURES

The ICPRB conducts slide shows and lectures on a wide variety of Potomac related subjects for civic and educational audiences.

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#### CONTACT US

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#### WEBSITE

<http://www.potomacriver.org>

