

REPORTER



ICPRB

Antietam Creek flows through farm fields, historic battlefields, and is a popular recreational stream. Monitoring after the spill by the Maryland Department of the Environment detected no noticeable fish kills or other problems.

Hagerstown Discharge Sparks ICPRB Action

According to wastewater treatment plant workers, it started with a faint, solvent-like smell that disappeared after a while. The Hagerstown, Md., plant continued to function normally for two days, when the bacteriological process used to help cleanse the water was affected by the unknown solvent. The following day, Saturday, February 9, the plant was partially shut down after the bacteria used in treatment had been killed by a mixture of several common industrial solvents.

The amount of contaminants that shut down the plant remains unknown, but it left plant operators no choice but to discharge about 5.7 million gallons per day of partially treated, undisinfected sewage. The plant's ozone disinfection system was shut down for fear that the process could cause problems if it encountered the solvent. A chlorine-based system was put into place after a few days.

Direct involvement by ICPRB staff began Saturday. Although not a regulatory agency, the ICPRB has for years been

ready to assist in protecting public water supplies in the event of spills on the river.

Commission staff were contacted by the Maryland Department of the Environment, which provided information about the sewage discharge, including location, duration, and volume of the discharge. This information was used to run ICPRB's Toxic Spill Model[®]. Using the information, the model provides a guide to water utilities along the river to assess when spills will first reach water intakes, a likely time for the approach of the maximum concentration, and when the spill will have flowed past the intakes. This information was quickly provided to each water withdrawer downstream of the stricken plant.

"Armed with the assessment, water providers have valuable information to guide them in altering processes or shutting down intakes until the contaminant has passed, noted Erik Hagen, deputy director of the ICPRB Section for Cooperative Water Supply Operations on the Potomac. "The spill model can be a critical tool in minimizing the impact of a spill for those providing safe drinking water from the Potomac River," he

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

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said.

As it turned out, the chemicals that damaged the sewage plant were not detected downstream, and probably evaporated quickly, according to officials. Neither the chemicals nor the sewage flows resulted in noticeable fish or aquatic insect kills, according to the Maryland Department of the Environment. Downstream water plants began testing their intake water, but didn't find a problem, as dilution of the sewage by Antietam Creek, where the spill occurred, and the Potomac River reduced levels of bacteria in the spill.

While it has been seldom needed, "The spill model represents an important tool for responding to emergencies such as this," noted ICPRB Executive Director Joseph Hoffman.

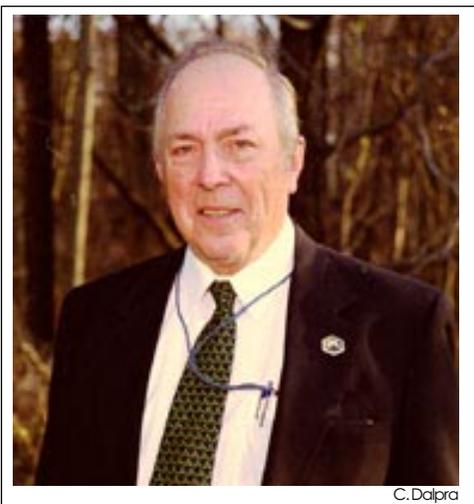
Chairman's Report

by James Gilford,
Maryland Commissioner and
ICPRB Chairman, 2001-2002

The mission of ICPRB is to enhance, protect and conserve the water and associated land resources of the Potomac River Basin through regional and interstate cooperation, a mission the commission by virtue of its representation is uniquely positioned to pursue. Even so, achieving the acceptance and support of private and public interests involved in the conservation and development of those resources is, to no great surprise, a demanding and consuming task.

Securing funding for the commission's work is an additional and ever present challenge. Although the commission continues to seek an avenue for gaining standing in the federal budget process, Congress currently is not honoring its obligation under the ICPRB Compact to share with Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia the direct financial support of ICPRB's activities. The current downturn in the economy and the drought conditions stressing the Potomac watershed promise to make the Commission's mission even more challenging in the coming months.

The compact that created the commission in 1940 does not grant the authority to regulate, so the Commission relies on the rational application of sound scientific data and technical assessments to address water resource problems in the basin. Facts and figures developed by the professional staff are used to assist federal, state and local regulatory agencies, water suppliers, private organizations, and the public at large in understanding and resolving water-related problems throughout the basin. In a complimentary approach, ICPRB also



C. Dalpra

actively encourages and assists basin jurisdictions to coordinate their activities and to work cooperatively in addressing water resources problems.

While all of the citizens of the basin benefit from the work of the commission, some of its achievements are more visible than others. The important role of ICPRB staff in analyzing and forecasting the supply and demand for water in the basin and in helping to coordinate its use is well known, so much so that the commission's role in protecting the basin's water quality and its living resources is often overlooked.

Expertise in matters related to water supply is only one of the agency's strengths. In addition to assistance to water suppliers, ICPRB provides a variety of scientific and technical assistance to federal, state, and local agencies on matters dealing with water quality and the living resources of the Potomac watershed. The commission also is an important resource for residents of the region, providing accurate and timely information about water-related issues. In addition, it provides the means to network with other citizen groups for the purpose of sharing information and offers residents an opportunity to be active participants in protecting and conserving the resources and amenities of the Potomac. It is important for that message to be heard loud and clear throughout the basin.

Critical to the success of all the commission's initiatives for improving water quality, assuring adequate water supplies, and enhancing the living resources of the basin is a constituency that is knowledgeable about the work of the Commission and the water resources of the basin. A well-informed constituency can better understand the wide range of issues facing the basin and the necessity of approaching those problems on a comprehensive, basin-wide scale. Building and sustaining such a constituency depends on a continuing process of sharing accurate and timely information with the more than five-million people living in the Potomac watershed.

The Commission's Communications Unit, formerly the Public Affairs Unit, has at its command the tools needed to build an informed and active constituency for protecting and enhancing the water and related land resources in the basin. The staff includes a watershed coordinator who provides assistance and information to citizen groups pursuing goals consistent with good stewardship of the basin's water resources.

The unit's tools include, but are not limited to, the bimonthly *Potomac Basin Reporter*, which reaches about 20,000 basin residents, a user-friendly web site (www.potomacriver.org), media contacts, press releases, public service announcements, responses to requests for information and a library that is open to the public. The same tools are used to call attention to the scientific and technical expertise of the staff and their various activities.

While the day-to-day purpose of sharing information is to educate, inform and assist residents of the basin, an additional and equally important goal is to achieve basin-wide awareness that the river and its tributaries are a continuum, and the Potomac watershed an ecological system, in which all the parts are related. Water-related problems in the basin are not isolated problems, although in the past, they often have been treated as such, leading to solutions that do not always consider the entire basin.

The existence of the basin's ecosystem is implicit in the work of the professional staff. Their involvement with activities such as water quality monitoring, development and application of sediment transport models and TMDL (Total Maximum Daily Load) plans, the analysis of water supply and stream flow data, and the on-going effort to restore fisheries are opportunities to promote the extensive role of the commission and highlight the importance of a basin-wide perspective in protecting and conserving the resources of the Potomac watershed.

The value of such a basin-wide perspective was recognized more than 50 years ago. In the final chapter of his book, "The Potomac," published in 1949 as part of the *Rivers of America* series, Frederick Gutheim wrote the following: "One must admit, and regret, the fact that people of the Potomac Region are barely conscious of the Potomac as a whole, well as they may know it in part."

These then, I believe, are goals for the Commission to pursue in the months ahead: secure funding from Congress, achieve greater visibility for the commission's role in protecting living resources, continue to enhance water quality and preserve the natural amenities of the river, instill a basin-wide perspective in the watershed's residents, and continue the building of an informed and active constituency for the work of the commission.

ICPRB's 2002 Projects Continue Building Interstate Partnerships



Sediments and toxics are being modeled for Anacostia TMDLs.

C. Dalpra

The past year was a productive one for the Interstate Commission on the Potomac River Basin (ICPRB), as it expanded its efforts toward cooperatively seeking improvements for the basin's water and related land resources.

Commission efforts often involve two or more jurisdictions, and the ICPRB leverages its initiatives by forming partnerships with government agencies, nonprofits, schools, and volunteers. Each section of the Commission plays a part in working on projects that will continue to enhance jurisdictional cooperation toward preserving and protecting the water and related resources of the basin. At the same time, ICPRB strives to inform stakeholders and the public, creating constituencies to support those efforts and their value. This update highlights several of the commission's wide array of projects for 2002.

TMDLs, Chesapeake Bay Program Focus of Water Quality Section

Major emphasis of the ICPRB Water Quality Section includes two areas—Total Maximum Daily Loads (TMDLs) and projects that impact the Potomac under the Chesapeake Bay Program. The TMDLs are a planning process that guide the reduction of pollutants that keep a waterway from meeting water quality standards. Federal law requires states to periodically list waterways that do not meet standards, and to develop cleanup plans. The ICPRB currently is assisting with several TMDL efforts in Washington, D.C., Maryland, Virginia, and Pennsylvania. Commission efforts include collecting data and developing a model to characterize the pollutants in the waterway. The models developed by ICPRB are used to devise a cost-effective plan for reducing the pollutants and returning the stream to a healthy state.

This year, several TMDL projects will continue as the ICPRB is creating models on the interstate Anacostia River for the

District of Columbia and Maryland. Last year, ICPRB developed TMDL models for sediment and toxics transport, the impact of the sediment concentrations in the river, and dissolved oxygen levels. The dissolved oxygen level model was finished in 2001. A toxic pollutants model will be this year's focus. Work also will continue on modeling several Virginia and

Pennsylvania waterways.

As the second largest tributary to the Chesapeake Bay, the Potomac River and estuary are integral to the health of the bay, and management decisions can hold great impact for both. Water Quality staff continue to forward cleanup goals for the Potomac and the bay as they participate in work efforts, including the Budget, Steering and Implementation Committees, the Monitoring and Analysis and Living Resources Subcommittees, and the Water Quality Steering Committee, an interagency committee that helps guide the TMDL process for the bay program. This interchange also provides a wealth of information on the Chesapeake Bay initiatives for commission members.

A number of other Chesapeake Bay funded projects involve ICPRB staff. Creating rain gardens, funded by the District of Columbia Environmental Health Administration, involves area businesses in the protection of the watershed. The ICPRB, working in tandem with the Anacostia River Business Coalition (ARBC), is developing low impact development solutions to the problem of rainwater runoff and the pollutants runoff carries. "The idea is to demonstrate to businesses low-cost ways of reducing the impact of pollutants on the local watershed," said Carlton Haywood, associate director for Water Quality. "Businesses recognize that it's their watershed and take an interest in it."

A rain garden serves as a natural filter for catching rain water runoff from parking lots, fields, and neighborhoods. "Businesses are willing to donate labor and material in constructing these rain gardens," said Haywood. "They believe that it's the right thing for a good corporate citizen to do."

The Watershed Stewardship program, developed in 2001 by ICPRB and ARBC, educates and provides information to local businesses on how they can become involved in preventing pollutants from



C. Dalpra
Volunteer Kristin Kresch assists ICPRB's Jim Cummins in setting a drift net for shad.

entering the Anacostia River. By spring, the Stewardship Program will be in full swing. The ICPRB staff will hold meetings with local businesses to work together on strategies for pollution prevention. A brochure for elementary school teachers will be published as part of this effort. This will build on school programs about the environment and help educate students on recognizing pollutants in the home and community.

Another on-going project is the monitoring of a watershed in Pennsylvania. A water quality monitoring station has been placed on Conococheague Creek, just south of the Pennsylvania/Maryland border, to monitor suspended solids and nutrients. This station allows the assessment of pollution control activities in the Pennsylvania portion of the watershed, which comprises some 1,500 square miles. "Each year, we analyze the data and make new estimates of suspended solids, total nitrogen and total phosphorus loads coming from the Conococheague watershed," said Cherie Schultz, senior environmental scientist in ICPRB's Water Quality Section. This project and the many related projects conducted by the ICPRB water quality staff will assist states in evaluating their options for reducing pollutants so that water quality criteria can be met.

Living Resources: Giving Back to the River

For the last seven years, ICPRB's Living Resources Section, working with the U.S. Fish and Wildlife Service Harrison Lake Fish Hatchery, has released 14 million American shad, an important native fish species in the Potomac River whose population has been depleted by fishing pressure, pollution, and habitat constriction. Each year since 1995, the goal has been to release 1 million American shad fry into the Potomac upstream of Little Falls Dam. The dam once blocked the upstream spawning migration of shad and other species. A fish passage was constructed in 2000 that now allows fish to swim upstream to spawn in an area inaccessible for decades. Last year, a project record of 3.3-million shad fry were released into the Potomac near Fort Belvoir, at Mather Gorge, at the base of

Great Falls, and between Little Falls and Great Falls.

This year, the project will again release shad fry into the Potomac with the assistance of the Chesapeake Bay Foundation, the U.S. Fish and Wildlife Service and Living Classrooms. The Schools in Schools program run by the Bay Foundation and Living Classrooms with ICPRB support enlists area schools where hundreds of students raise shad in the classrooms. The project encourages and teaches students the importance of conserving the living resources of the river and provides a hands-on biology lesson.

In a related effort, ICPRB continues with the Anacostia River Herring Project that began in 1999 as advanced mitigation for future loss of habitat associated with building a new span of the Woodrow Wilson Bridge. The project is a partnership between ICPRB, the Metropolitan Washington Council of Governments (COG), the Maryland Department of Natural Resources, and Potomac Crossing Consultants (PCC). The focus for this effort is the restoration of



C. Dalpra
COG's Phong Trieu strips river herring of eggs.

migratory river herring runs in the Anacostia watershed and the reduction of the numerous stream blockages that constrict free-flow of the tributaries in the watershed. Since the project began, 5.3 million river herring have been released into the Anacostia River and its tributaries; 2.7 million were released last year. As with the shad project, the stocking takes place upstream of stream blockages that are being removed. The fry placed at the upstream sites will "remember" the location (called imprinting), and upon reaching maturity, will swim past the unblocked stream to return to their release location to spawn. This year, the Schools in Schools program will expand to involve 10 schools in the herring project, in which the students will be responsible for stocking herring fry. "The overall goal," said Jim Cummins, associate director for ICPRB's Living Resources Section, "is to re-establish the ecological function of the river and to

reopen the fishery for the people."

In an effort to gather information and consolidate knowledge of the Potomac River ecosystem, a database that stores stream biological monitoring data on the non-tidal Potomac was recently developed in the Living Resources section. The database is intended to help researchers find and use available information on the Potomac River watershed more easily.

The data include information on aquatic insects, invertebrates, and fish. Using both

historical and current data, the database integrates data of different types and structures into a tool that can be used to provide a more-accurate picture of the complex biology of the river. "The ultimate purpose is to store all Potomac data in a format that is consistent and easily accessible," said LeAnne Astin, aquatic ecologist and the developer of the database, "and can be used for other research." Astin is still refining the framework, but a large part of the database is in place. It is expected to be completed this year.

The ICPRB continues working with the state of Pennsylvania in assessing the biological integrity of streams in the Potomac basin. Pennsylvania has more than 2,000 miles of streams in its portion of the Potomac basin. Since 1997, staff have been characterizing these streams by creating an inventory of stream quality as part of the Department of Environmental Protection (DEP) Unassessed Waters Program for 2001. Surveys were conducted at 60 sites, of which six were found to have problems in meeting quality standards. Site surveys will continue in 2002.

Water Resources Has a Vision for the Future

When a person is thirsty, it's usually a simple walk to the kitchen to get water from the tap or the refrigerator, or to go to a fountain for a cool drink. Drinking water availability is taken for granted, as though it will always be there. Residents of the metro area enjoy that luxury due to years of planning and research that have ensured a reliable water supply from the Potomac, even during times of extreme drought.

The ICPRB Section for Cooperative Water Supply Operations on the Potomac (CO-OP) has been a leader in the study of the Potomac River basin and the coordination of the metropolitan area's water supply. The CO-OP's recent 20-Year Water Supply Demand Study predicted that the current system will meet the demand of the metro area through 2020, with the possibility of water use restrictions during times of drought. By 2030, a drought of record would likely deplete current reservoir storage.

"With the current system of reservoirs, the adequacy of the water supply can't be guaranteed to meet the expected future demand," said Joe Hoffman, executive director of ICPRB. "We must plan now for meeting our water supply needs decades from now." Hoffman noted that the coming year will be used to bring governments and people of the watershed together to examine the needs and sources of future water supply.

The ongoing focus for the CO-OP section centers on coordinating the operations of the metropolitan area's three major water suppliers during times of drought. The work



Watching the River Flow

The Potomac River, as measured near Washington, D.C., continued to be gripped by drought during December and January, according to the U.S. Geological Survey.

In December, the Potomac flowed at a rate of about 1.5 billion gallons per day (bgd), only 18 percent of the long-term average (about 7.9 bgd). Daily extremes during the month ranged from a high of about 1.7 bgd on December 20 to a low of about 1.1 bgd on December 31. Diversions for metropolitan-area drinking water averaged about 353 million gallons per day, about three percent less than in December 2000. Freshwater inflow to Chesapeake Bay also was well below average at 23.7 bgd, only 46 percent of the long-term average. The Potomac contributed about nine percent of the total, far less than its usual 21 percent.

Flows slowed even further to start the new year in January. The monthly average flow was about 1.5 bgd, only 16 percent of the long-term average of about 9.0 bgd. Daily extremes ranged from a low of about 1.0 bgd on January 1 to a high of about 2.4 bgd on January 30. Municipal diversions averaged about 366 mgd, or three percent less than January 2001. Chesapeake Bay freshwater inflow to Chesapeake Bay averaged about 16.8 bgd, or about 29 percent of the long-term average. The Potomac contributed about 13 percent.

The Potomac hovered at or below record low flows for a number of dates during the period. Because winter-time flows are higher than summer's the river remained well above all-time low flow records.



C. Dalpra

The Potomac flowing just upstream of Harper's Ferry. The SWAP study examines effects on source water from far upstream.

involves the coordination of Potomac water withdrawals by the utilities, which serve 95 percent of the metropolitan area. During low river flow, utilities must share the river to meet demands for water. The CO-OP staff, working closely with the metropolitan area suppliers and others, controls releases of stored reservoir water to boost river flow when needed. Releases are based on flow conditions, current water withdrawals, projected demands for water, and other factors. The CO-OP work also assists a regional public drought response plan that provides timely, coordinated, and accurate information to residents.

The CO-OP section plans to hold its annual drought exercise in May. The exercise, an effort to refine operational procedures, will include a seven-day simulation of operations during times of drought, providing a rehearsal for actual droughts. The U.S. Army Corps of Engineers' Institute for Water Resources will videotape the exercise for presentation at the annual meeting of the American Water Works Association. "I'm very excited about this exercise and the videotaping," said CO-OP Deputy Director for Operations Erik Hagen. "We will be looking at conditions to see what we would do if we had a drought worse than the 1930s drought. As a region, we feel we're prepared to meet the demand, however, we want to quantify how well we can meet those demands in times of low-flow." Hagen also felt that the exercise and the videotaping "give us an opportunity to develop some fun and interesting ways to involve the water suppliers." The exercise may be preempted by actual drought operations if the current dry weather conditions persists.

Other active CO-OP projects include developing a model of the water quality operations in the North Branch Potomac and working to refine the operating policy for Savage Reservoir. This will integrate its operations into the overall basic operation

plan to meet all stakeholder interests. The CO-OP staff will be providing technical support to the water suppliers as ICPRB examines potential water supply alternatives to meet future demand.

The Source Water Assessment Program (SWAP) for the District of Columbia was begun in August 2000 to meet federal requirements to determine the safety of public water supplies, and assess threats to that safety. The D.C. Department of Health contracted ICPRB to conduct an assessment of the city's source water. This assessment is being carried out in three phases. The first was to delineate the watershed that supplies water to the District. The second phase was to pinpoint and map all potential sources of contamination and the third, to conduct a susceptibility analysis of potential contamination to the water supply. The COG assists the project by holding a series of public meetings to explain the program.

The first two phases of the assessment have been completed. A comprehensive database has been established, which includes demographic information on the entire Potomac River basin including, geology, sources of potential contamination, all rivers and streams, maps, and any other demographic that pertains to the Potomac River watershed. "The user of this database can build any kind of query, because we have every kind of demographic information a person could want," said David Vann, water resources specialist who heads the project for ICPRB. The susceptibility analysis is nearing completion. The entire project will be completed in May.

Communications Section Gets New Face

The ICPRB's public information function has evolved into a new section name, a new employee, and soon to come this year, a new website. The Communications Section will continue informing the public, researchers and government agencies about all aspects of the Potomac River basin and what the commission is doing to enhance and preserve its waters. Along with the team of biologists and engineers on the ICPRB staff, the communications staff will continue efforts with its newsletter and with a redesigned website that will offer up-to-date and concise information and data on all ICPRB projects.

ICPRB will continue with its goal to lead in the coordination of regional efforts to improve and protect the water quality of the Potomac River basin. The commission will continue to promote this goal through its partnership with the basin states, the federal government, and the growing number of watershed related groups and individuals committing their resources to the betterment of the basin. Please contact the commission with any questions about its many projects and activities.

Potomac Sojourn Set for June

The Potomac Sojourn is a week-long canoeing and kayaking expedition that features educational programming, riverside camping, restoration projects, festive meals, meetings with elected officials, and much more. Novice and experienced paddlers alike can enjoy a unique on-the-water experience that builds a strong environmental ethic. The Sojourn aims to elevate awareness of the Potomac River's importance to the region and to encourage local residents to play an active role in its restoration.

The 2002 Potomac Sojourn will begin on Sunday, June 23rd in Shepherdstown, W.Va., and will continue to Washington, D.C., with overnight camping stops. Participants are welcome to paddle a portion or the entire trip. Non-paddling programs also are offered throughout the sojourn.

The ICPRB will coordinate the Wednesday, June 26, portion of the trip from Brunswick, Md. to the confluence of the Monocacy and Potomac Rivers.

For more information, please contact Karen Fligger, ICPRB watershed coordinator at 301-984-1908 x103 or kfligger@icprb.org.



Don't Forget the April 6 Potomac Watershed Cleanup!

Get involved in this annual event that helps show you care about your local environment. Sites are located across the watershed. Many groups, including ICPRB, work together to make the watershed-wide cleanup a success. To find a site near you, call cleanup coordinator Hard Bargain Farm at (301) 292-6665 or go to www.potomaccleanup.org.

Potomac River Awareness Day May 18

The Brunswick, Md., Family Campground will be the site for a family event including canoeing, kayaking, fishing, and water rescue demonstrations, a river cleanup, triathlon, and other activities. The event is hosted by the Potomac Conservancy, Maryland Department of Natural Resources, the Natural Resources Police, the National Park Service, River and Trail Outfitters, the city and other groups. For more information or to become involved, call Ms. Geri Reynolds at (301) 834-7500.

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