INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

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Testimony of the

Interstate Commission
on the
Potomac River Basin

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Ova-Pollution in the Potomac: Egg-Bearing Male Bass and Implications for Human and Ecological Health

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House Committee on Government Reform

The Honorable Tom Davis
Chairman

The ICPRB is an interstate compact commission established by Congress in 1940. Its mission is the enhancement, protection, and conservation of the water resources of the Potomac River and its tributaries through regional and interstate cooperation. Represented by appointed commissioners, the ICPRB includes the District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia, and the federal government.

INTRODUCTION

Mr. Chairman, I appreciate the opportunity to testify before your Committee today as part of its investigation of recently reported abnormalities in fish in the Potomac watershed and its examination of the steps that governments are taking to ensure effective protection of human and ecological health.

I will focus my comments on four (4) areas:

1. The roles of the organization that I represent, the Interstate Commission on the Potomac River Basin (**ICPRB**), which is one of a number of river basin-focused organizations created by various states and Congress with water resources management functions;
2. The Potomac Drinking Water Source Protection Partnership;
3. A regional coordination role where agencies have banded together with a single coordinator to address the legacy of Polychlorinated Biphenyls (PCB's) in the Potomac River; and
4. A brief discussion of emerging contaminants and their impacts in the Basin.

ROLE OF ICPRB

The ICPRB is an interstate agency created, with the Potomac Valley Conservancy District, by an interstate compact ratified by Congress in 1940. Membership is comprised of five signatories (the commonwealths of Pennsylvania and Virginia, the states of Maryland and West Virginia, and the District of Columbia), with the federal government as a participant through the Presidential appointment of three (3) United States Commissioners. It was formed to address water resources issues in the 14,700-square-mile drainage area that forms the Potomac River watershed. It is a non-regulatory body that addresses water quality and water quantity issues from a watershed perspective. Its major functions are to provide the sound science needed by its member jurisdictions for water resources decision-making in the basin, to provide leadership for cooperative efforts of our member jurisdictions relating to the water resources of the basin, and to facilitate opportunities and forums to address significant water issues.

Our Commissioners, appointed by the member jurisdictions, represent a wide range of basin interests. Through the ICPRB, the Commissioners seek *"to enhance, protect, and conserve the water and associated land resources of the Potomac River and its tributaries through regional and interstate cooperation"* as their fundamental mission. The ICPRB has been doing this in a variety of ways through many collaborative efforts with our member jurisdictions and with other partners both in and outside the Potomac basin.

As examples of these efforts, three (3) activities are noteworthy. First, ICPRB's Section for Cooperative Water Supply Operations on the Potomac (CO-OP) manages the distribution of stored water during times of drought for the Washington Metropolitan Area under the authority of the Water Supply Coordination Agreement adopted by the regional water suppliers, the District of Columbia and the ICPRB. Many members of your Committee, and others throughout the region, may know about our role in effective management of water supply withdrawals while meeting environmental flow objectives, which I will be happy to detail for members outside of this presentation.

Second, ICPRB is directly acting to develop a coordinated action plan to reduce impairments from the residual impacts of PCBs in the Potomac River and in several tributary areas. I will briefly discuss the ICPRB role later.

Third, and most directly related to the issue before this Committee is the ICPRB role in coordinating and administering the organization known as the Potomac Drinking Water Source Protection (DWSP) Partnership. In examining these efforts, I will now focus on this Partnership.

POTOMAC DRINKING WATER SOURCE PROTECTION PARTNERSHIP

The DWSP Partnership, begun in 2004, is a voluntary organization of drinking water suppliers and government agencies working to protect drinking water sources, thereby safeguarding both public health and the environment. Through work groups and active discussion at partnership meetings, the DWSP Partnership is pursuing a strategy for enhancing source water protection as recommended by source water assessments that were prepared throughout the Potomac basin. Nineteen government agencies and drinking water utilities from throughout the Potomac basin have formally joined the growing DWSP Partnership. Added participants, including citizens and more local governments, are expected to become active in future months and years.

The Potomac River Basin is home to over 5.8-million people who rely on the basin's rivers and ground water for drinking water supply. Activities upstream of water supply intakes or in ground-water recharge areas can introduce contaminants to water sources for these inhabitants of the basin. The Partnership was formed, in part, so government agencies and water utilities could cooperatively address drinking water quality concerns arising in thesesource water areas. By relying not only on treatment plants, but also on multiple barriers to contamination created by watershed protection efforts, the Partnership seeks to enhance drinking source water quality and minimize risks to public health. The Partnership has identified several issues of importance and has formed separate workgroups to focus on:

- Emerging contaminants,
- Pathogens,
- Disinfectant byproduct precursors,
- Urban issues,
- Agricultural issues, and
- Development of an early warning and emergency response system.

Each of the workgroups has identified objectives, activities, and milestones for its focus topic.

The role of the Emerging Contaminants Workgroup is to support the DWSP Partnership by tracking and reporting on findings of research and monitoring of persistent and newly identified threats posed to the Potomac River drinking water supply. An initial focus of the workgroup is on endocrine disrupting chemicals (EDCs). The workgroup's short-term goals include defining and prioritizing EDCs based on a review of current knowledge and consultation with experts, assessing potential sources for the priority EDCs in the Potomac River, and identifying appropriate best management practices for their control. The workgroup's long-term goal is to enhance, through monitoring of ongoing research by others, the Partnership's and local stakeholders' understanding of EDCs identity, sources, distribution, possible human and

ecological health effects, treatability, and management practices to limit their proliferation in the environment. The DWSP Partnership conducted a workshop on Emerging Contaminants and Water Supply on September 19, 2005.

The Pathogens Workgroup was established to provide the Partnership with information on pathogens that may affect the raw water supplied by the Potomac River and its tributaries. The workgroup will seek to understand the sources of pathogens in the Potomac watershed and methods for controlling their introduction into the water supply. It also will try to create alliances with other stakeholders in developing a plan to reduce pathogen loads in the river. In addition, the DWSP Partnership organized a Pathogens Workshop on June 28, 2005, which focused primarily on Cryptosporidium, to learn more about pathogen sources and begin discussion on a strategy to reduce pathogen loads.

The Early Warning and Emergency Response Workgroup is intended to better prepare the Partnership's member utilities to respond in the event of a spill or other incident that affects their water supplies. ICPRB has had a spill model for parts of the basin for over a decade. This is being upgraded and exercised to make users more familiar with its capabilities. The workgroup will evaluate the need for further modifications and enhancements and help to coordinate the development of needed components of such a system. It will also assist in the development of an emergency response plan to improve communication among all affected utilities in the event of a water supply emergency.

The Disinfectant By-Product (DBP) workgroup was created to develop better information for Partnership utilities to address the disinfection by-product--chemicals and contaminants that result from current technology disinfection treatment techniques employed in the water supply industry. It will focus on prioritizing and conducting research to assess the relative contribution of different watershed sources of natural organic matter/DBP precursors to treated/distributed water DBP levels. The ultimate goal of this workgroup is to focus source water protection efforts on those sources most significant to DBP levels in treated/distributed water and to identify the most feasible and cost effective source water protection measures to address regional utility DBP issues.

The Urban Issues Workgroup will work to position the Partnership to better communicate drinking water needs in the Potomac River Basin to the agencies that oversee implementation of urban stormwater management programs. This workgroup is focused on urban stormwater including urban runoff, combined sewer overflows, and sanitary sewer overflows associated with storm activity. The goal of this workgroup is to promote implementation of better stormwater management to protect drinking water in the Potomac. The initial steps include gathering information on urban land use trends and on current stormwater management practices throughout the basin. After this process has been completed, priority communities will be identified and a dialogue started with those communities. This workgroup will develop a list of recommended urban stormwater practices to be used for advocacy throughout the watershed.

This discussion of the several work groups is provided to illustrate that a coordinated effort is seen as a viable method to address the current issues and conditions this Committee is considering today. The Partnership process, coordinated by ICPRB, allows a more thorough

understanding of potential contaminant sources, prioritizes protection areas, and plans watershed protection activities that are most likely to impact drinking water quality.

These watershed protection activities are in their initial phases of development and work will be implemented as funding becomes available. Funding the Partnership through a variety of arrangements is continuously being pursued and is essential to a basin-wide coordinated approach to:

- Identify the causes and the contaminants of concern,
- Prioritize needs based on impacts to human health and ecological considerations, and
- Implement change.

PCB REGIONAL INITIATIVE

In another area, ICPRB technical and coordinating capabilities are being used for a regional initiative. The District of Columbia, Maryland, and Virginia have placed portions of the tidal Potomac on their 303(d) impaired waters lists for PCB contamination and all three jurisdictions are required by the Clean Water Act to determine a TMDL (Total Maximum Daily Load) that will remove the impairment. Because it would be confusing to the public if separate TMDLs with potentially conflicting findings and recommendations were produced for this shared water body, the jurisdictions agreed that all would benefit if data collection and model development were coordinated and a single TMDL analysis done. The Interstate Commission on the Potomac River Basin was asked to take on that role. We have responsibility for determining where the PCBs are coming from and, in 2007, will be conducting the TMDL analysis. We carry out this responsibility in consultation with a Steering Committee, which includes participants from the involved jurisdictions and the U. S. Environmental Protection Agency, through which we share information and decision making at each step in the process so that each jurisdiction and the EPA is comfortable with and can take "ownership" of the final product: ***One TMDL for an interstate water body.***

EMERGING CONTAMINANTS ISSUES IN THE POTOMAC BASIN

Emerging contaminants include endocrine disrupting chemicals contained in pharmaceuticals, agricultural and industrial chemicals, personal care products, pesticides, and fire retardants that have been discovered in surface and/or ground water. Reportedly more than 10,000 compounds are potentially of concern.

The potential sources of Emerging Contaminants (not definitively determined to date) include:

* Pharmaceuticals
    - Pass through into wastewater plants, may not be fully removed
    - Rapidly growing use of many pharmaceuticals by humans and in animals
* Agriculture operations
    - Growth hormones in various poultry and livestock
    - Pesticides and herbicides (no-till operations)
* Various personal care products (e.g., anti-bacterial soaps)
* Reliance on pesticides
* Fire retardants and other industrial chemicals

There are several important impact issues in the Potomac River Basin relating to these contaminants:

* Drinking Water Supply - Anecdotal information suggests that contaminants exist at some small level; however, these contaminants are not routinely monitored. The contaminants are not on the list for which Maximum Contaminant Levels (MCLs) are established. To date, these contaminants have not become regulated under the federal drinking water program. The Potomac River basin includes multiple users of the water as it is withdrawn at the many drinking water intakes, used through domestic systems, and then returned to the river or a tributary after treatment.

Groundwater sources need to be considered in future actions, as about 1.2 million people in the Potomac Basin depend on over 110 million gallons per day of groundwater as their source of supply either through individual domestic wells or through public systems. Both methods normally use lesser treatment technology than do surface-supplied utilities.

As an aside, ICPRB is grateful to Congress for providing funds for the Commission to work with the U. S. Geological Survey on a basin-wide groundwater assessment. This partnership has resulted in the installation of real-time monitoring wells to aid in drought monitoring and has allowed the development of tools to assist local governments in assessing the impacts of growth on local groundwater supplies.

Expanded monitoring is essential to understanding and determining the impact of these contaminants on the drinking water supply and its human consumers.

* Fish Resources - The intersex fish issue has emerged as a public concern and fish showing evidence of this problem have been seen in several areas of the basin. Testing and evaluation continues, primarily through the U. S. Geological Survey. At the state level, Virginia's departments of Environmental Quality and Game and Inland Fisheries, and West Virginia's Division of Natural Resources and Department of Environmental Protection are actively investigating with some coordination between the groups as resources allow. Although not directly attributed to this problem as a cause or an effect, there have been fish kills and fish with lesions in several areas of Potomac River Basin, including the South Branch of the Potomac, the Shenandoah River, and even the tidal estuary south of Washington (and in drainage areas outside the Potomac basin). There are many potential stress factors that could contribute to the intersex problem, and it is likely that more than one factor is involved. Further research and funding are essential to understand the role of emerging contaminants in this process. Collectively, the fish with intersex characteristics have not yet been seen as a reason for a fish consumption advisory to be issued (advisories do exist in the Potomac for mercury and PCBs).

* Wastewater - The broad category of emerging contaminants is not regulated through effluent criteria prescribed for wastewater plant discharges. Methods of testing and detection limits for emerging contaminants are not standard nor routinely sampled. The level of emerging contaminant removal is not well-documented, and thus it is likely that some contaminants remain after treatment. The advanced wastewater treatment used in many facilities in the basin focuses on bacteria, disinfection, and nutrient removal. The Blue Plains wastewater plant that handles over 300 million gallons of wastewater per day has no drinking water withdrawals below its

discharge.

* Bio-amplification - We do not have information that tells us if or how these substances accumulate in human or fish tissue. There is uncertainty and many unknowns about the movement of these contaminants in food chain, retention factors, etc. More answers are needed.

Agencies, entities, and organizations addressing the issues surrounding emerging contaminants:

* U. S. Geological Survey - Especially fish intersex, kills, lesions, and related issues; some water supply topics are addressed with ongoing programs.

* U. S. Environmental Protection Agency - Principally in drinking water program (source water protection); active in Potomac.

* ICPRB - Potomac Drinking Water Source Protection Partnership (DWSP). Includes EPA, USGS, states, water utilities, county governments, regional agencies (Metropolitan Washington Council of Governments, etc.)

* American Water Works Association Research Foundation - Approximately $5 million in about 20 projects. (Funding limitations constrain the timing and amount of work that can be accomplished).

* States - Water supply agencies, environmental agencies, fisheries agencies. At this time all levels of government have various fiscal restrains, so resource availability for funding and coordinating programs is not clear.

* Water suppliers - Multiple barrier approach to protecting/using water sources. Limited availability/implementation of newer treatment methods (i.e., granular activated carbon filtration) are used in few facilities in the Basin. Until we obtain a more complete knowledge of the needs and levels of concerns, more research is necessary. Potomac DWSP Partnership is one available action group.

ICPRB can play a vital role in addressing the issues involved in emerging contaminants, including:

* Regional coordination of efforts of interstate, interagency, and stakeholders (including federal partners)
* Data/technology development and exchange
* Potentially hosting a regional conference
* ICPRB Leadership can:
    - Coordinate the development of a unified science plan - the who, what, where, when and how. This could be done via the discussed workshop.

    - Build Consensus in the critical early-steps research components, without which we could end up with expensive answers to the wrong questions.

    - Plan potential unified management steps for the time when information content reaches appropriate juncture.

- Devise a regional plan for management and communications.

All of these steps and actions involve both state and federal agencies and stakeholders. In addition to the USGS, we need to have the EPA, USDA, and FDA involved from the start. Unfortunately, while we recognize the importance of emerging contaminants in the context of water resources, ICPRB has not been able to allocate more than a nominal amount of its budget to address this issue. While we recognize that this is not an appropriations hearing, as an agency, ICPRB had, until 1995, a direct federal appropriation that would have allowed us to commence action much more rapidly under circumstances such as this. Today, while we have a proficient and able staff, they are funded largely by specific grants or projects secured from a variety of sources, with limited flexibility for diversion to this work.

CONCLUSION

As I conclude, let me present a summary of lessons learned in the Potomac River Basin with respect to water resources management that may prove valuable to coordinate solutions to the issues being discussed today:

- We have found through the Potomac Basin CO-OP water supply program that significant financial resources were saved by governmental jurisdictions and a wide range of interests operating as a ***regional system***. Interstate agencies such as the ICPRB can play a significant role in the coordination necessary to such a system and the management of its resources. Innovative, regional, cooperative planning, rather than completely independent operations, has proven beneficial and effective over the last 66 years since ICPRB was formed.

- The Interstate Commission on the Potomac River Basin is recognized regionally and internationally as a good model for managing water resources on a watershed basis because of its ability to manage across political boundaries, achieve economy by acting as a clearinghouse for data exchange, and address conflicting objectives water quality, quantity, and resources.

- Cooperation, coordination, and communication among impacted agencies and organizations is essential to effectively address the health and maintenance of the Potomac River Basin's ecological balance.

- Local and regional action is essential, but we all know that water is not governed by state and municipal boundaries. The DWSP Partnership, under the ICPRB umbrella, is an excellent example of a structure that allows multiple jurisdictions and partners to work together. Congress and our signatories understood in 1940 what they do now: Interstate action is required to eliminate the political impediments that may impact the health and welfare of the Potomac River Basin.

- Federal agencies and the Congress have both a major leading and a supporting role to play, especially in research and in funding national efforts to protect our drinking water sources.

- The Potomac models are successful because:
    * The cooperating utilities need an interstate cooperative approach in order to be successful,
    * The states and federal agencies fund the programs to achieve a high degree of scientific excellence and cooperation, and
    * Parties have all given, and continue to give, their cooperation for the common good.

As Executive Director of the Interstate Commission on the Potomac River Basin, I appreciate the opportunity to have participated today in helping you to understand the active role we take in addressing the health and welfare of the Potomac watershed. Thank you, Mr. Chairman.