

Reflections

CHESAPEAKE BAY COMMISSION · ANNUAL REPORT 2004

The word “Reflection” has more than a dozen dictionary definitions, some common and others quite

arcane. Two are wholly appropriate to this report. A reflection is a refraction of light that casts a mirror image of a place or thing — a way to witness its very being and to understand its significance. A reflection is also a retrospective moment — a pondering of the past that can have bearing or influence on the future. For the Commission, 2004 was a very reflective year. ► We looked closely at our Bay and its 64,000-square-mile watershed and wholly agreed that we had something profoundly special — something deserving of nationwide recognition. The members urged President George W. Bush to proclaim the Bay as a national treasure. Making the case was easy; moving a nation is not. The persuasion must be ongoing. ► The year 2004 was also a time for the Commission to reflect back on its quarter century of effort. Has progress been substantial? The answer is surely “yes.” Has much been learned and accomplished? Again, the answer can only be “yes.” But has it been enough? In good conscience, the response must be “no.” And so the Commission vows to continue its work, with diligent conviction and recognition of the political and financial challenges ahead.

Reflections

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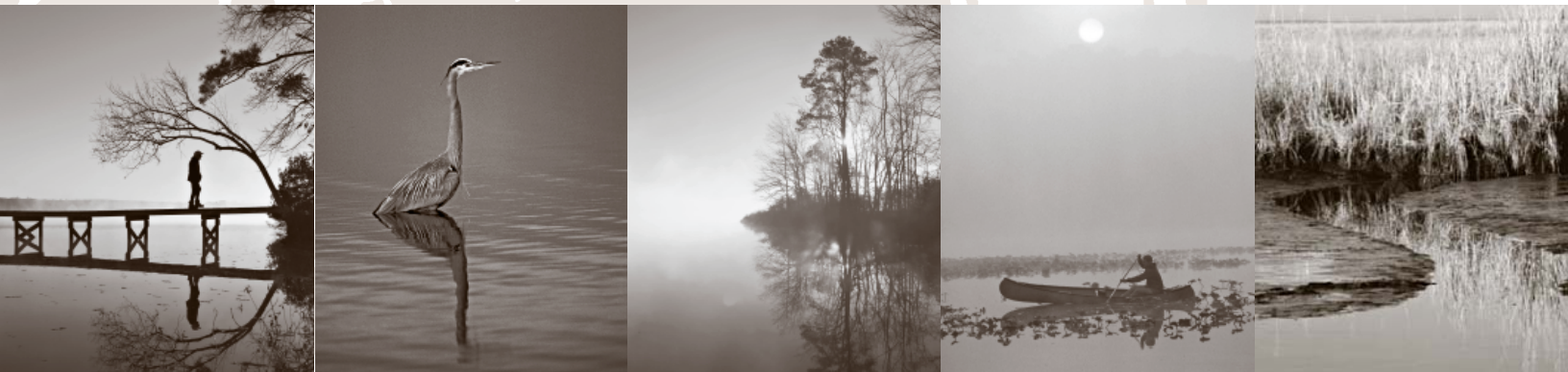
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THE CHESAPEAKE BAY COMMISSION IS A TRI-STATE legislative commission created in 1980 to advise the members of the general assemblies of Maryland, Virginia and Pennsylvania on matters of Baywide concern. Issues addressed by its members are as wide-ranging and complex as the Bay itself, delving into matters of air, land, water, living resources and the integrated management of all of them.

Twenty-one members define the Commission's identity and its workload. Fifteen are legislators (five each from Maryland, Virginia and Pennsylvania) who are responsible for identifying the needs of the Bay, hearing the wishes of their constituents and determining actions to make better stewards of all of us. Completing their ranks are the governors of each state, represented by their cabinet members who are directly responsible for managing their states' natural resources, as well as three citizen representatives who bring with them a unique perspective and expertise.

The Chesapeake Bay Commission (CBC) was created in 1980 to coordinate Bay-related policy across state lines and to develop shared

solutions. The year 2005 will mark the Commission's twenty-fifth anniversary — a benchmark that often triggers reflection. With nearly a quarter-century of work behind it, the Commission has emerged as a regional, bi-partisan leader whose members possess both technical knowledge and political savvy. It has made remarkable strides learning the complex workings of an enormous estuary, determining the Federal and state actions that are needed to sustain its living resources, and persuading its colleagues in the general assemblies, the executive branches, and the Congress to take action.

Today, despite nearly 25 years of effort, restoration continues to face daunting challenges with diminishing returns. Much has been accomplished. With the crafting of *Chesapeake 2000* and new water quality standards that address the Bay's water quality woes, there is a clear vision of "what we must do." But if progress is to be made, sustainable funds must be garnered and political will amassed.

Reflections provides an image of the Commission's efforts to address the restoration needs. It demonstrates the long-term commitment that every member holds to bring back the Chesapeake Bay. All are sustained by their vision of a clean and healthy Bay. All believe that productive partnerships at the Federal, state and local level are a fundamental step toward attaining that vision. All know that without reliable funding and strong leadership, the job cannot be done.

Members and Staff of the Commission

The Hon. J. Lowell Stoltzfus, Chairman *	Maryland State Senate
The Hon. Michael Waugh, Vice-Chairman *	Senate of Pennsylvania
The Hon. Emmett W. Hanger, Jr., Vice-Chairman *	Senate of Virginia
The Hon. Bill Bolling	Senate of Virginia (January-June)
The Hon. Robert S. Bloxom	Virginia House of Delegates (Jan. 2004 — Jan. 2005)
The Hon. John A. Cosgrove *	Virginia House of Delegates (May-)
The Hon. Thelma Drake	Virginia House of Delegates (January-May)
The Hon. Russ Fairchild	Pennsylvania House of Representatives
The Hon. Bernie Fowler	Maryland Citizen Representative
The Hon. C. Ronald Franks	Secretary of Natural Resources, Maryland
The Hon. Brian E. Frosh	Maryland State Senate
The Hon. Arthur D. Hershey	Pennsylvania House of Representatives
The Hon. Irvine B. Hill	Virginia Citizen Representative
The Hon. James W. Hubbard	Maryland House of Delegates
The Hon. L. Scott Lingamfelter	Virginia House of Delegates (May-)
The Hon. Kathleen A. McGinty	Secretary of Environmental Protection, Pennsylvania
The Hon. W. Tayloe Murphy, Jr.	Secretary of Natural Resources, Virginia
The Hon. Albert C. Pollard, Jr.	Virginia House of Delegates
The Hon. Nick Rerras	Senate of Virginia (June-)
The Hon. Michael H. Weir, Jr.	Maryland House of Delegates
The Hon. Noah W. Wenger	Senate of Pennsylvania
The Hon. George B. Wolff	Pennsylvania Citizen Representative
The Hon. John F. Wood, Jr. *	Maryland House of Delegates
The Hon. Peter J. Zug *	Pennsylvania House of Representatives

* Members of the Executive Committee

Staff

Ann Pesiri Swanson	Executive Director
Thomas W. Beauduy	Pennsylvania Director (January-June)
Melanie D. Davenport	Virginia Director (January-November)
Marel A. Raub	Pennsylvania Director (September-)
Patricia G. Stuntz	Maryland Director
Paula W. Hose	Administrative Officer



EACH YEAR, THE COMMISSION LOOKS BACK TO REFLECT on its work and to assess its contribution to the health of the Bay. In 2004, funding, appropriately and necessarily, took center stage. Our work to support investment in the Bay restoration continued on parallel tracks: We laid the groundwork for new programs and enhanced funding, while also analyzing where existing funds could be best directed to achieve maximum reductions in nutrients and sediments.

At our four quarterly meetings, held in each member state and the nation's capital, Commission members met with the region's top scientists to garner advice and to translate scientific findings into policy recommendations. Condensed agendas of these meetings appear as Appendix I.

In Washington, D.C., the Commissioners met with their Congressional colleagues and with the President's top environmental advisors to promote the designation of the Bay as a "national treasure" and to strengthen Federal agency participation in cleanup and restoration efforts throughout the watershed.

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As our state partners worked to develop new water quality standards and the blueprints for each tributary to meet those standards, the Commission stayed focused as well on the reduction of nutrient and sediment loads to the Bay. Chapter 3 offers a description of this work.

This chapter is intended to illustrate the breadth of the Commission's work, addressing issues as wide-ranging as non-native oysters and acid mine drainage. The Commission's willingness to tackle the full spectrum of Bay issues has ensured its role as one of the region's principal policy leaders.

State Legislative Activities

Commission members in 2004 sponsored and supported legislation and budget initiatives in all three states to improve the management of water, land, air and living resources. The following are highlights from each of the states' legislative sessions:

MARYLAND

- Agriculture and point sources remain the largest sources of nitrogen to the Bay. In Maryland, Commission

members supported the creation of a dedicated fund proposed by Governor Robert L. Ehrlich, Jr., and passed during the 2004 session. Funds from the "Sewer Surcharge" will be used to upgrade the 66 largest sewage treatment plants in the state with enhanced nutrient removal (ENR) technology to address this problem. A combination of user fees assessed to households, businesses and multi-family dwellings, as well as bond proceeds, will generate funds sufficient to upgrade these plants by 2011. Fees are also assessed on users of septic systems or holding tanks, with proceeds directed toward failing septic systems as well as the Maryland Department of Agriculture's cover crop cost-share program. The initiative is recognized by all as a major stride in the Bay's restoration and will, upon full implementation, result in the capture of one-third of the state's required nitrogen pollution load reduction.

- To better address agricultural sources of pollution, the Maryland delegation supported legislation to change required nutrient management plan provisions seen as unduly burdensome by the farm community. The Commission members

COMMISSIONERS AT WORK

Delegate John Wood, Jr. (D-Md.), Executive Director Ann Swanson, Delegate Albert Pollard, Jr. (D-Va.) and Senator Emmett Hanger (R-Va.) listen carefully as Chairman Senator J. Lowell Stoltzfus (R-Md.) discusses farm policy with the members of the Commission.



and staff had participated in a series of meetings and summits to ensure that these provisions improved a farmer's ability to implement a plan while causing no additional harm to the Bay.

- The Maryland delegation also supported legislation to reaffirm the principles and intent of the Critical Areas Law and increased penalties for critical area violations. They supported the establishment of energy-efficiency standards and renewable energy portfolios for electricity suppliers. Mercury labeling and disposal requirements were also passed this session.

PENNSYLVANIA

- The Commonwealth, in 2004, became one of 18 states (along with Maryland) to enact an advanced energy portfolio standard. In 15 years, eighteen percent of the electricity sold by electric distributors and electric generators that sell directly to retail customers must be from alternative energy sources, including solar photovoltaic energy, wind power, geothermal energy, biologically-derived methane gas, coal mine methane, waste coal and coal gasification, among others.

- Through a referendum on the May primary election ballot, Pennsylvania voters approved a \$250 million bond issue to fund water and wastewater improvements in the Commonwealth. A Water Supply and Wastewater Treatment Fund was established that will administer \$200 million of grants and loans for water projects associated with economic development. The remaining \$50 million will be forwarded to the Pennsylvania Infrastructure Investment Authority (PENNVEST) for improvements to existing systems. An additional \$50 million to \$100 million indebtedness is provided under a 1992 bond initiative for the improvement of existing systems.

- Agriculture is the top source of both nitrogen and phosphorus pollution in Pennsylvania. The Commonwealth moved to strengthen its existing nutrient management program by regulating both commercial manure haulers and brokers. The legislation requires all commercial haulers and brokers to undergo training and certification in nutrient management requirements. It also places a duty on commercial haulers and brokers to comply with

The Commission's Work in 2004

COMMISSIONERS AT WORK



Former Chesapeake Bay Program Director Bill Matuszeski, a consultant on the Commission's cost-effectiveness report, confers with Delegate John Cosgrove (R-Va.).

Pennsylvania Representative Russ Fairchild (R) and Maryland Delegate Jim Hubbard (D) consider regional air pollution strategies as they seek common solutions across state lines.



Chapter 1

requirements of Pennsylvania's Nutrient Management Act and to maintain appropriate records of land application.

- The Chesapeake Bay Watershed Education Program within Pennsylvania's Department of Education was created in 2004. The program is authorized to provide grants up to \$5,000 per school to promote the teaching of watershed education and provide students with the opportunity to participate in meaningful Bay or stream outdoor experiences.

VIRGINIA

- In Virginia, large expanses of Bay bottomland is state-owned and available for lease. In 2004, the Virginia delegation sponsored legislation authorizing the Virginia Marine Resources Commission to lease the water column above certain bottomlands for aquaculture purposes. Commission members also supported the establishment of the Secretary of Agriculture and Forestry, and assessment of permit application fees, annual fees and permit maintenance fees that will generate approximately \$6 million for the funding of air, water and waste permit programs at the Department of Environmental Quality.
- Virginia's stormwater management programs will be improved through legislation which consolidates activities into one agency, the Department of Conservation and Recreation. Additional legislation requires agency personnel who inspect for compliance with the Erosion and Sediment Control Law and stormwater management permits to hold valid certificates of competence, as required of local government personnel.
- Legislation was also approved authorizing a study by the Joint Legislative and Administrative Review Commission (JLARC) on the effectiveness of the implementation, performance and enforcement of Virginia's nutrient management plans. The Commission will assist JLARC in gathering the information that it needs.
- In September, the Executive Director and the Virginia Director spoke at the joint meeting of the Virginia House and Senate committees covering natural resources and appropriations. Their presentations addressed the role of the Commission and its activities in the Bay Program and the Virginia General

COMMISSIONERS AT WORK



Known for his environmental leadership, Senator Brian Frosh (D-Md.) considers the pros and cons of introducing a non-native species of oyster into the Chesapeake.

As the chairman of the Pennsylvania Senate Agriculture and Rural Affairs Committee and a farm-operator himself, Senator Mike Waugh (R) knows that farmers must be part of any water quality solution.

DAVID HARP



Assembly, the nutrient and sediment reduction strategies of Maryland and Pennsylvania, and the Commission's work to identify the relative cost effectiveness of different nutrient control options. The information shared contributed directly to the waste treatment funding proposals submitted for General Assembly consideration in 2005.

Congressional Activities

- In May 2004, the Commission met with its Congressional colleagues for individual state hearings on the condition of the Bay and the status of the restoration effort. Earlier in the day, Commission members met with: Chairman James Connaughton of the President's Council on Environmental Quality; Acting Assistant Secretary Benjamin Grumbles of the U.S. Environmental Protection Agency, Office of Water; and Maggie Grant, Special Assistant to the President on Intergovernmental Affairs.
- The Commission presented a letter to Chairman Connaughton, addressed to President Bush, seeking issuance of an Executive Order to reaffirm the Federal

government's commitment to the Bay restoration and identify the Bay as a "national treasure." The Commission also provided an outline of the key points such an Order would include. Details of these meetings are provided in Chapter 2.

- Commission staff worked with the [House] Congressional Bay Task Force to develop Federal budget requests based, in part, on the findings of the Commission's 2004 cost effectiveness report. Staff also served as a lead witness when the Task Force convened.
- Negotiations began in 2004 for the reauthorization of the Water Resources Development Act (WRDA), the broad authorization for the work of the Army Corps of Engineers nationwide. The Commission worked closely with the U.S. Senators from the region to ensure that Corps funding would track closely with Bay region priorities. The Committee was urged to make permanent the pilot program established in Section 510 of WRDA 1996 known as the Chesapeake Bay Environmental Restoration and Protection Program and to raise the authorized funding

The Commission's Work in 2004

COMMISSIONERS AT WORK



Senators Noah Wenger (R-Pa.) and Nick Rerras (R-Va.) and Delegates Mike Weir, Jr. (D-Md.) and Jim Hubbard (D-Md.) concentrate on the facts in an effort to translate science and economics into environmental policy.

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from the current level of \$10 million to \$1 billion. Section 510 authorizes the Army Corps of Engineers to provide design and construction assistance to state and local authorities in the environmental restoration of the Chesapeake Bay. In addition, we further requested the establishment of a new small-grants program for local governments and non-profit organizations to carry out small-scale restoration and protection projects in the Chesapeake Bay watershed. The reauthorization did not pass in 2004 but will be reconsidered in 2005.

- Continuing the work it began in 2003, the Commission continued to advocate revisions to the Federal Abandoned Mine Reclamation Fund (Fund) established under the Federal Surface Mining Control and Reclamation Act of 1977 that would reauthorize fee collections into the Fund for an additional 25 years and modify the Fund's allocation formula to better direct resources to states based upon historic production. The Commission has pressed Congress to continue to allow the use of Fund monies to address water quality problems, notwithstanding pressures to limit

expenditures to public health and safety threats.

- In August, the U.S. House of Representatives Committee on Government Reform conducted a full committee field hearing on the health of the Chesapeake Bay at Fort Monroe in Hampton Roads, Virginia. Both Congressmen Tom Davis (R-Va.) and Ed Shrock (R-Va.) were present. The Commission's testimony, as requested by the Committee, addressed the current state of the Bay and the role of the Commission in bringing together the three state legislatures to jointly address Bay issues. Representative Davis expressed particular interest and concern about the Blue Plains sewage treatment plant. As a result of this hearing, the Commission formed a subcommittee to focus on the political and financial obstacles preventing the upgrade of the plant to full nitrogen removal.
- Finally, in the late fall of 2004, the U.S. Senators from our region requested that the Government Accounting Office (GAO) conduct an audit of the Bay restoration program to ensure that benchmarks used to indicate progress

COMMISSIONERS AT WORK

The 2004 leadership of the Commission included senators from all three states: Chairman J. Lowell Stoltzfus (R) of Maryland's Eastern Shore is flanked by Vice-Chairmen Emmett Hanger (R-Va.) and Mike Waugh (R-Pa.).



were providing the clearest picture possible of the Bay's health. The audit is to determine if the investment of Federal funds is resulting in the greatest possible environmental improvement. Because cost-effectiveness has also been a central focus of the Commission's work, the GAO will rely upon CBC as a key information source. The audit is expected to conclude in August of 2005.

Executive Branch Partnerships

In 2004, the Commission worked closely with the administrations in all three states. In fact, each of the governors — Robert L. Ehrlich (R- Md.), Edward G. Rendell (D-Pa.) and Mark R. Warner (D-Va.) — attended meetings of the Commission in 2004.

■ At the Commission's January meeting, Governor Ehrlich unveiled his proposal for a Bay Restoration Fund to upgrade the state's major sewage treatment plants. Commission staff worked with the Governor's office to address technical issues and stakeholder concerns raised during the debate on the bill in order to ensure its passage.

During subsequent meetings, Governors Rendell and Warner outlined their priorities and discussed their strategies for achieving their goals.

■ The Virginia Director served as an appointee to the State Advisory Board on Air Pollution, which provides technical and legal analysis on policy issues to the Virginia Air Pollution Control Board. The Advisory Board prepared white papers on two issues in 2004: 1) analysis of air quality trends in Virginia and recommendations for enhancements to the air quality monitoring network, and 2) emerging control technologies for power generating units and options for the control of mercury emissions. These were presented to the Air Pollution Control Board at a public meeting in November 2004.

■ Commission staff served on the Technical Advisory Committee (TAC) of the Virginia Department of Environmental Quality that assisted in developing the regulation that sets permit limits for the amount of nutrients that can be discharged by point sources. This regulation establishes technology-based numerical

The Commission's Work in 2004

COMMISSIONERS AT WORK



Delegate Scott Lingamfelter (R-Va.) and Pennsylvania's Chesapeake Bay Program Coordinator Pat Buckley ensure that the interests of the Commonwealths, both north and south, are addressed.

Secretary W. Tayloe Murphy, Jr., strongly urged his Virginia colleagues to establish a state funding mechanism to upgrade wastewater treatment plants, the major contributor of nitrogen loads to Virginia waters.



Chapter 1

limitations for the discharge of total nitrogen and total phosphorus within the Virginia portion of the Chesapeake Bay watershed. In addition, staff attended meetings of the Technical Advisory Committee that developed the Chesapeake Bay Water Quality Standards for dissolved oxygen, submerged aquatic vegetation and chlorophyll a.

- The Executive Director delivered the keynote address at the 2004 Virginia Environment Conference. The conference represents the largest annual gathering of environmental professionals in the Commonwealth. In addition, the Virginia Director spoke at the annual training conference of the Army Regional Environmental Office held at the Aberdeen Proving Ground, Maryland. The focus of the conference was to provide Department of Defense staff with a better understanding of state legislative operations. A briefing was also offered to the new members of Maryland's Critical Areas Commission.

National and International Relations

The Commission continues to play a prominent role on the national and inter-

national level, serving as a knowledgeable source of leadership and restoration information. In 2004, Ann Swanson represented the Bay region in the plenary sessions of three large gatherings of national environmental leaders: The National Science Teachers Association Convention, Restore America's Estuaries 2004 Conference, and the First National Conference on Ecosystem Restoration. More than 50 smaller speeches and workshops were presented in 2004.

- The very structure of the Commission is often of interest to others seeking to improve their restoration efforts or to start new ones. In 2004, the Commission served as a lead witness in a meeting of the Ohio River Valley Water Sanitation Commission (ORSANCO) in Williamsburg, Virginia. ORSANCO was examining the effectiveness of its current interstate compact and looking to better understand the success of the Chesapeake Bay Commission and the broader Bay Program. The staff also provided a briefing to the Rhode Island General Assembly, which is establishing a legislative and citizen committee to focus on Narragansett Bay.

COMMISSIONERS AT WORK



Delegate Mike Weir, Jr. (D-Md.) listens carefully as Senator Nick Rerras (R-Va.) queries the drafters of the cost-effectiveness report.

Maryland Director Pat Stuntz discusses Federal funding for agricultural practices with members of the U.S. Congress.



■ Visitors from across the globe travel to our region to examine how the Chesapeake effort has achieved all that it has. Despite the fact that we have not reached our goals, our efforts remain unmatched at the national and international level. In 2004, the Commission members and staff provided overviews and briefings on Bay issues to visitors and consultants representing China, Japan, Italy and Australia.

Chesapeake Bay Program Leadership

■ As the 2004 Chairman of the Commission, J. Lowell Stoltzfus served as a member of the Chesapeake Executive Council. At its 2004 annual meeting, Senator Stoltzfus briefed the members on the Commission's analysis of cost-effective nutrient and reduction control strategies. Chairman Stoltzfus signed four directives on the Commission's behalf, which addressed fish passage, education, native oyster restoration, and the recommendations of the Blue Ribbon Finance Panel.

■ Commission staff held positions on all leadership committees within the

Bay Program, contributing policy and budget guidance. In 2004, staff participated on the: Principal's Staff Committee, Budget Steering Committee, Implementation Committee, Nutrient Subcommittee, and Water Quality Steering Committee.

■ Staff served on the ad hoc panel established under the Chesapeake Bay Policy for the Introduction of Non-Indigenous Aquatic Species. The panel reviewed the Virginia Seafood Council's request to modify its permit for conducting large-scale aquaculture tests on *Crassostrea ariakensis*, the Asian oyster.

The Commission's Work in 2004

Key Issues

Blue Crabs

■ The Commission continued its role in coordinating bi-state scientific and policy activities centered on management of the blue crab. Meetings of the Commission's Bi-State Blue Crab Technical Advisory Committee (BBTAC), held in June and October, were attended by scientists, fisheries managers, legislators and interested public. The review of blue crab harvest and population

COMMISSIONERS AT WORK

With a total price tag topping tens of billions, Pennsylvania Representatives Art Hershey (R) and Pete Zug (R) know that any funds available to restore the Bay must be carefully targeted.



status will be incorporated into the second annual Blue Crab Status Report in the spring of 2005.

Financing the Bay Restoration

■ Delegate Jim Hubbard served on the Blue Ribbon Finance Panel, which was created at the request of the Executive Council to identify mechanisms to finance Bay restoration. The Panel, chaired by former Virginia Governor Gerald Baliles, met five times in 2004 to discuss key funding needs, constraints and opportunities. The Commission's Annapolis office helped staff the Panel, and its Executive Director addressed the Panel members on cost of the Bay restoration at their first meeting. The Panel developed a set of recommendations that were released in a final report to the Executive Council in December 2004.

■ The Commission's report, *Cost-Effective Strategies for the Bay: Smart Investments for Nutrient and Sediment Reduction*, was a major focus of our work in 2004. At the Commission's September meeting in Harrisburg, staff and its consultants briefed members on the top practices identified as part of an analysis of both cost-effectiveness and the potential for nutrient and sediment reduction opportunities in each of the three states. Commission members formed a steering committee which assisted staff in developing a final report which was presented to members at its November meeting and published in December 2004. More than 4000 copies of the report have been distributed, accompanied by dozens of briefings. Chapter 3 provides a more thorough review of this work.

Non-Profit Partnerships

■ In order to encourage the financial support of the private sector, the Commission partnered with the Chesapeake Bay Trust and an advisory panel of private philanthropic foundations to launch the Bay Area Funders' Network in 2002. Since that time, the Network has met twice a year to review grant strategies and collaborate on projects where members can pool their funds and strategies toward the common good. The Commission continues to serve as an information source and advisor to the group. In 2004, the Commission worked to connect the Federal grant making agencies with the Bay Area Funders in order to better leverage the resources of both. The Commission also played a prominent role in establishing the Waterkeepers' Alliance, Inc. in our watershed to serve as a coordinating force for the growing number of Riverkeepers who focus on the conservation of the tributaries of our watershed.

■ The Commission staff sat on the Chesapeake Bay Trust's Advisory Committee to assist in development of a Targeted Watershed Initiative Proposal. Staff will continue to serve on this committee to review proposals and provide oversight and guidance.

■ The Commission has always recognized effective communication and education as central to the Bay's restoration. To further this commitment, the Pennsylvania Delegation to the Commission provided funds for production of a one-hour documentary on the Susquehanna River by television station WVIA Chan-



FRONT ROW: Paula Hose, Ann Swanson, Marel Raub, Russ Baxter, Melanie Davenport, Pat Buckley, Pete Jensen, Albert Pollard, Jr., Nick Rerras, Tom Beauduy, Barbara Sexton, John Cosgrove, Mike Weir, Jr., Art Hershey. **MIDDLE ROW:** Pat Stuntz, Emmett Hanger, J. Lowell Stoltzfus, Mark Bundy, Mike Waugh, Scott Lingamfelter, John Wood, Jr., Jim Hubbard, Tayloe Murphy, Jr., Noah Wenger **BACK ROW:** Steve Turcotte, Pete Zug, Russ Fairchild.

nel 44, Pittston, Pennsylvania. In addition to broadcast on WVIA, copies of the program will also be made available through community libraries and teachers in the region.

- The Delegation also provided funds to the Lebanon County (Pa.) Conservation District for its Quittapahilla Educational Wetland Preserve. These funds will be used to upgrade an existing pavilion at the site to accommodate an on-site water-testing facility and to construct boardwalks through the wetland area. The Commission worked to ensure complementary funding was

provided by the EPA Small Watershed Grants program.

Reflecting on Our Work

As we set priorities for both short- and long-term actions, our task remains daunting. Money is needed that is not there. Time is of the essence. And we, as policy-makers, are confronted with the need to consider voluntary, regulatory and technical approaches that have never been tried. What we are doing is most often the right thing. We simply need to do more of it. The challenge is to find the necessary funding and will to expand our efforts.



WHAT IS A “NATIONAL TREASURE”? WHY DO we cherish places like Yosemite, Yellowstone and the Everglades? It isn’t just that they are national parks or that they have interesting histories or priceless natural resources. A place is a “national treasure” when the very mention of its name to an American stirs the blood and paints a picture.

The Chesapeake is defined by the constancy with which land meets water. Within its vast watershed, stretching across 64,000 square miles, water is everywhere. It riddles the landscape of its flat coastal plains, tumbles from its forested mountains ranges and nurtures its fertile, largely agricultural piedmont. Most of the Bay’s fresh water is delivered by 50 rivers and a seemingly endless array of smaller creeks, streams and rivulets that permeate its landscape. It is said that every resident living within the basin is within a 10-minute walk to a tributary of the Chesapeake Bay.

Describing the landscape in the context of a watershed does not fully describe the land’s influence on its waters. The Chesapeake,

Chapter 2

compared to other water bodies, has a huge drainage basin for the water it contains, a ratio of 2,743 square miles for every cubic foot of water. The principal reason is the Chesapeake's extreme shallowness. Its average depth is only 22 feet.

This shallow nature contributes to its amazing productivity. The ability of the light to penetrate the depths of its waters provides welcoming conditions for the more than 250 species of fish, crabs, clams and oysters that live in the Bay — many in extraordinary numbers.

The word “Chesapeake” evokes a place where centuries of history have been tied to the land and waters, from the earliest settlements on America's shores to the daily harvest of blue crabs. It is a place where the working landscapes of our traditional industries — fishing, farming and forestry — coexist and continue to thrive like nowhere else in the East, and in the face of an expanding population of 16 million in the watershed

Each year the Chesapeake gives up over \$1.5 billion worth of seafood, much of it harvested by watermen who live in the villages of their forefathers and use traditional practices. Its farmland includes 4 million acres of row crops, some of them grown on the most productive non-irrigated land in the nation. Its forests include the largest fully mature stands of mixed hardwoods on earth.

But the Chesapeake is more than products and harvests. It is also a place with a characteristic look that suggests timelessness. Its wide tidal rivers start in wooded mountain hollows hundreds of miles away. Its rich rolling farmland — studded with farmsteads, barns and outbuildings that comprise a vernacular architecture — induces a sense of peace. Its Eastern Shore still boasts the signature working

landscapes of centuries past. In a Bay that is 200 miles long and a few dozen miles wide, 11,684 miles of convoluted tidal shoreline provide refuge for wildlife, and for people.

On the Chesapeake, gentle shimmering waters reflect a low sun in an endless sky at the beginning and end of each day. There is no doubt; our Bay *is* a national treasure.

A Treasure in Need of Attention

For all the Bay's productivity and sparkling qualities, it is not without its woes. The Chesapeake acts as a giant catch basin for everything that drains from its massive watershed. Much of the Bay's watershed lies in some of the fastest developing regions of the country and is at the southern end of the urban megalopolis, stretching from Washington, D.C., to New York and the northeastern United States. Thousands of municipalities, industries of every sort and farms use water from the Bay and its tributaries to do everything from irrigate crops to cool nuclear reactors. They also use it as a place to dispose of treated waste.

It would be impossible to restore the Bay without addressing these human-induced influences. They permeate the ecosystem and help to define it. The current restoration effort attempts to seek a balance whereby the human population can prosper in balance with the native fish and wildlife. It is a daunting challenge that can only be accomplished by a concerted and long-term effort of the states and the Federal government.

Characterizing the Federal Presence

The American people have come to expect that places we collectively celebrate as

Text continues on Page 29

Chesapeake

A National Treasure

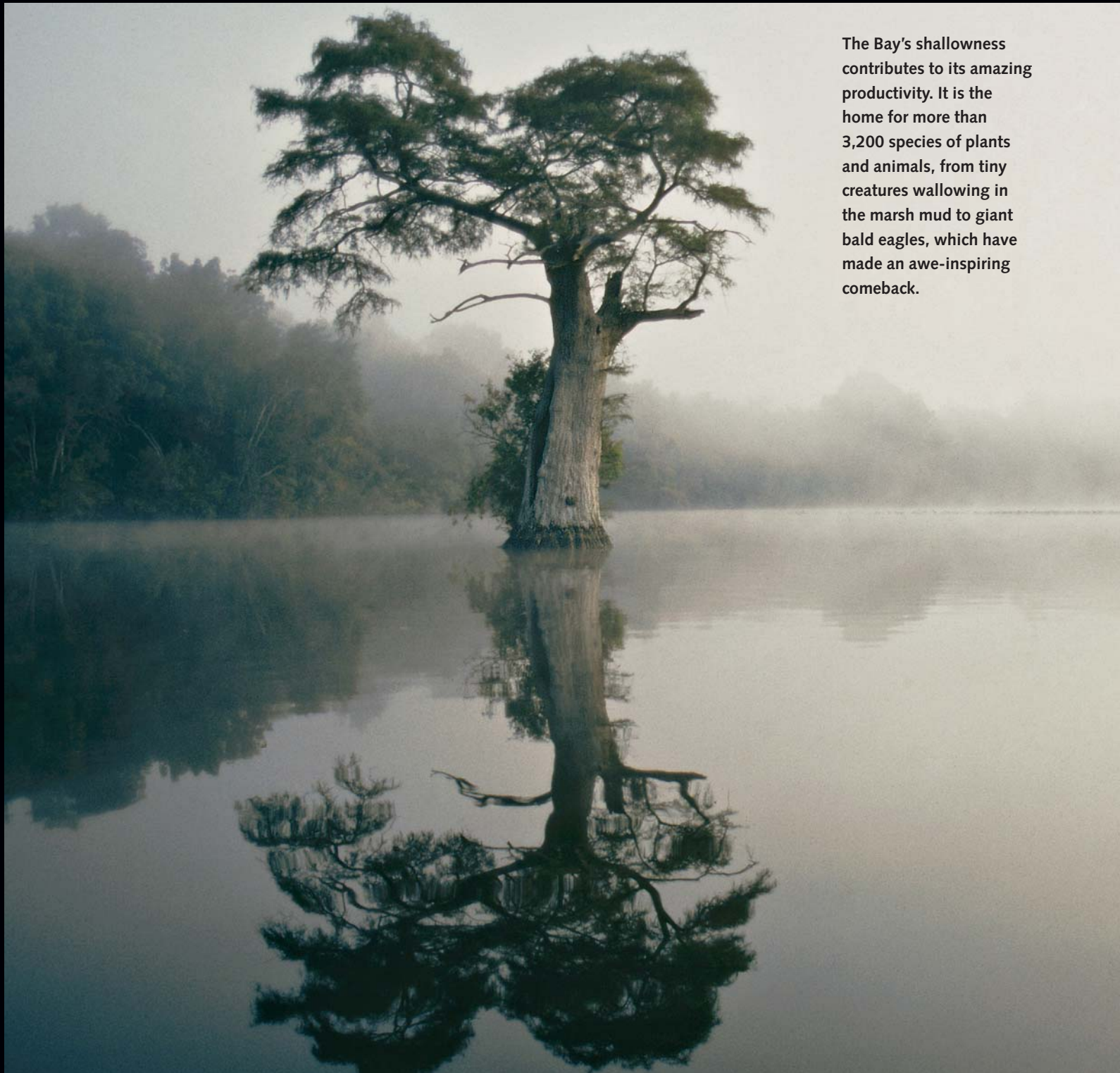


The pastoral landscapes take different forms in different parts of the watershed. In the headwater reaches, the image is gently sloping fields, studded with cows, chicken houses and red barns. But closer to the Bay proper, the watermen become the working landscape, plying the water for their catch.



Within the boundaries of the Chesapeake Bay estuary exist a range of aquatic environments, from fresh water to nearly full-strength sea water, allowing a broad spectrum of organisms to flourish, such as these hibiscus.





The Bay's shallowness contributes to its amazing productivity. It is the home for more than 3,200 species of plants and animals, from tiny creatures wallowing in the marsh mud to giant bald eagles, which have made an awe-inspiring comeback.

In 1886, the year the skipjack Rebecca T. Ruark was launched, oysters were king. By 1976, when she was photographed coming home with her hundred-plus bushel limit, the oyster sail fleet numbered only in the dozens. Now depleted due to two centuries of overfishing and rampant disease, the oyster population is less than 1 percent of its historic abundance. Rebecca still sails, but mostly to carry tourists.

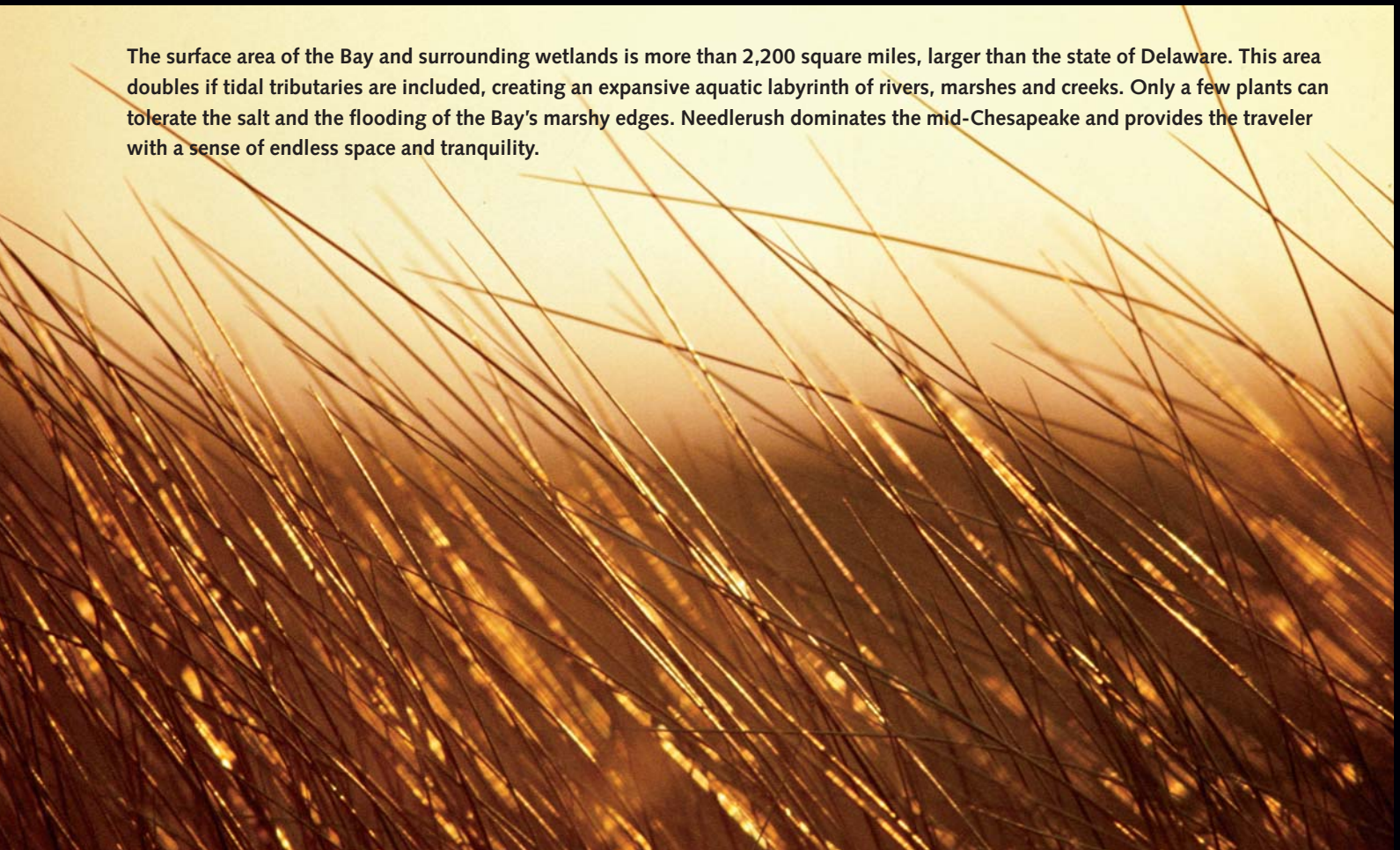





What is the worth of the Bay? Fifteen years ago economists placed a value on the Bay of \$678 billion. Today, inflation alone would likely push that number beyond the trillion dollar mark. But to a boater or fisherman, it may be priceless. Considered to be a boaters' Mecca, whether propelled by paddle, motor, or sail, the Bay watershed offers nearly 100,000 miles of streams and creeks within which to wander.



The surface area of the Bay and surrounding wetlands is more than 2,200 square miles, larger than the state of Delaware. This area doubles if tidal tributaries are included, creating an expansive aquatic labyrinth of rivers, marshes and creeks. Only a few plants can tolerate the salt and the flooding of the Bay's marshy edges. Needlerush dominates the mid-Chesapeake and provides the traveler with a sense of endless space and tranquility.





The restoration of the Chesapeake Bay requires a balance, allowing the human population to prosper while the native fish and wildlife are provided with ample habitat, clean water, and harvest restrictions sufficient to sustain their populations.

The Chesapeake is a place where our nation's history and nature's gifts intertwine — a place worthy of Federal funding and recognition.



ABOVE The Chesapeake Bay is often referred to as the “crown jewel” of the United States’ 850 estuaries. It cuts across virtually the entire north-south length of two states — Maryland and Virginia — defining their landscapes, their cultures and their economies.



LEFT Some 250 types of fish, crabs, clams and oysters live in the Bay — many in extraordinary numbers. Together, they have a commercial value of more than \$1 billion annually. Half of the national catch of Atlantic blue crab is harvested from Bay waters. Based on a catch of 50 million pounds in a good year, this equates to 163 million individual crabs. Of the nation’s soft shell crab catch, over half is taken from the Chesapeake.



CHESAPEAKE BAY COMMISSION
Policy for the Bay

Text continued from Page 20

a part of our national consciousness are protected and nurtured by our Federal government. If they are degraded, our citizens have supported the national government's work to restore them. The Chesapeake is no exception.

There are many places in America where a single Federal agency, or even two or three, form a dominant presence in its protection and restoration. But nowhere else is the full range of Federal roles and responsibilities played out on the landscape as much as it is in the Chesapeake region.

The nation's capital city and the largest naval base on earth are on its tidal waters. In fact, the Federal government is by far the dominant employer in two of the three major metropolitan areas on the Bay (Washington, D.C. and Norfolk, Virginia). Large parts of the shoreline of the Bay and its tidal rivers are given over to defense facilities. Some of these, such as the Washington Navy Yard, go back centuries to the founding of the Republic; others, such as the Patuxent Naval Air Station are recent additions. Their combined footprint (from Aberdeen Proving Ground in the north to the Langley Air Force Base in the south) impacts an enormous area of land and water. While they restrict public access to large parts of the shoreline, they also serve as remarkable natural habitats for fish and birds, preserves that would not likely otherwise exist.

Defense facilities are by no means the only Federal presence on the Bay. Because so much history happened here, and because the Bay is centrally located on the major Eastern Flyway for migrating birds, the Chesapeake region has one of the heaviest concentrations of National Park Service and Fish and Wildlife Service

units in the nation. The Environmental Protection Agency targets more funding to the Chesapeake Bay cleanup than to any other body of water in the country. The U.S. Army Corps of Engineers is engaged in extensive restoration programs in the Anacostia River, Poplar Island and many other locales where dredging issues are important. As another measure of its relative importance, three different regional offices of the Corps are involved in the Bay.

The U.S. Forest Service has used the Chesapeake as the crucible to forge nationwide programs to restore forest buffers and to work with owners to cooperatively manage privately owned forest lands for water quality benefits. The first USDA Conservation Reserve Programs were here in the watershed. The Park Service has developed a unique program of Chesapeake Gateways to help water-side institutions of all types to provide access and education, an approach with real potential for use in many other parts of the country. Now, there is an effort to establish the nation's first Historic Water Trail. Designed to follow the paddle path of Captain John Smith, it will expose the traveler to all the splendor and history that Bay country has to offer.

The list goes on. The important conclusion is that the large Federal presence in the Bay has led to both local stewardship responsibilities and to innovative approaches with nationwide applicability. With the signing of the Chesapeake Bay agreements of 1983, 1987 and 2000, the Chesapeake Bay cleanup became the most advanced example of state/Federal partnership in the country. Bolstered by efforts of more than 700 local organizations and philanthropic groups, it is an effort with

Proposed Presidential Executive Order Regarding the Chesapeake Bay

- Recognize the Chesapeake Bay as a national treasure, an extraordinary ecological, cultural, economic and recreational resource.
- Acknowledge that although EPA is a signatory to the Bay agreements, the Federal commitment to aid in the Bay's restoration extends beyond one agency.
- Affirm that all Federal agencies involved in Bay restoration will work to achieve the commitments contained in the *Chesapeake 2000* Agreement (C2K).
- Instruct all involved Federal agencies to pursue targeted and sequential restoration efforts through better coordination in their programs and their budget initiatives and to coordinate their work with the states of Maryland, Pennsylvania and Virginia and the District of Columbia to best utilize Federal resources in implementing the jurisdictions' tributary strategies.
- Encourage all involved Federal agencies, beginning in FY 2005, to pursue the financial resources necessary to fulfill the Federal commitments made in C2K and to identify and develop effective, innovative ideas that reduce the costs of healthier water quality and habitat.
- Establish an annual briefing by all involved Federal agencies to the Intergovernmental Affairs Office of the White House on actions taken pursuant to this Executive Order.

Proposed by the Chesapeake Bay Commission
May 6, 2004

no rivals. With local communities and states resolutely engaged, the Federal government has a large responsibility to support efforts to restore the Chesapeake.

Persuading a Nation

On May 6th, 2004, the members of the Chesapeake Bay Commission arrived in Washington with a letter to the President seeking issuance of an Executive Order that would reaffirm the Federal govern-

ment's commitment to the Bay restoration effort and designate the Bay as a national treasure.

At a meeting in the Eisenhower Executive Office Building, CBC members met with the Chair of the President's Council on Environmental Quality, the Assistant Administrator of the U.S. Environmental Protection Agency and the President's White House Special Assistant on Intergovernmental Affairs.

A key message was the need for a dramatic increase in funding from all levels of government, based on data from the Commission's *Cost of a Clean Bay* report. Members cited the EPA's National Coastal Conditions Report which graded the Northeast Region, including the Chesapeake, "poor" for three out of five environmental indicators, the lowest ranking in any part of the country.

The discussion then focused on key elements of the proposed Executive Order. With 22 Federal agencies playing a role in the Chesapeake clean up, the Executive Order would compel agencies to examine their current budgets as well as their spending priorities, and to better coordinate, target and fund the actions needed to fulfill the Federal commitments to the Bay restoration. On an annual basis, all involved Federal agencies would brief the White House on actions taken pursuant to the Executive Order.

Following this meeting, CBC members met with the Bay Congressional delegations. Members voiced their support for the letter sent to President Bush requesting \$1 billion in the FY 2005 budget for reducing nutrient pollution in the Bay.

Next Steps

While a response from the President was not forthcoming, the commitment of the Chesapeake Bay Commission remains strong. At the time of this writing, the Commission's 2005 meeting in Washington is being planned. The case for national treasure designation will be raised again in the halls of Congress and in the offices of the Executive Branch. The governors of the Bay states must be effective in persuading the President to consider and approve this request. The Chesapeake Bay remains worthy of such a title and worthy of a strengthened Federal commitment.



pressure

IN DECEMBER 2004, THE COMMISSION PUBLISHED A REPORT that generated much discussion among key players in the Bay initiative. The report, *Cost-Effective Strategies for the Bay: Smart Investments for Nutrient and Sediment Reduction*, effectively capped four years of intensive work by the Commission and its partners to estimate the financial cost of reaching Bay goals, identify available sources of funding, and prioritize, to the best of our abilities, the actions that would put these much-needed funds to good use. This chapter summarizes the strategies, beginning with a look at how this effort evolved.

Background

The *Chesapeake 2000* agreement, signed by the Chesapeake Executive Council in June of that year, set out a far-reaching agenda and goals for the Bay cleanup, extending through the decade and beyond. As a member of the Council, the Commission played a key role in drafting the agreement and in assuring its acceptance by Council members. A major impetus to the agreement was the commitment to

de-list the Chesapeake from the Federal “Impaired Waters” list by 2010. It would take innovation, money and time.

Soon after, the Commission began a series of analyses, often working with the states and others, to estimate the costs of achieving many of the key goals set out in the agreement. During the course of 2001 and 2002, in particular, the Commission worked to develop cost estimates for water quality and land preservation goals. Much of this was accomplished by the “Lego Workgroup,” a cooperative effort of Bay Program leaders that focused on the building blocks of successful Bay restoration. It was chaired by the Commission.

In January 2003, these analyses led to the publication of the Commission’s report, *The Cost of a Clean Bay*, a comprehensive fiscal analysis of the cost to fully implement *Chesapeake 2000* for the rest of the decade. The report found that the projected funding needs for the decade were \$18.7 billion, with the major portions going to achieving the water quality (\$11.5B) and land preservation (\$4.2B) goals. Of the total needs, only \$5.9 billion were covered by current or anticipated programs, leaving a funding gap of \$12.8 billion. The report created a stir in the community; never before had anyone placed the full price tag for restoration before the public of the Chesapeake region.

Further debate was generated by the publication in early 2003 of the long-awaited report of the Bay Program’s Scientific and Technical Advisory Committee, *Chesapeake Futures: Choices for the 21st Century*. Taking a longer view to 2030, this report presented three alternative scenarios: recent trends (essentially the status quo); current objectives (taking

current agreements like *Chesapeake 2000* into account); and feasible alternatives (using innovative technologies and aggressive approaches). While the report did not deal directly with costs, it gave the clear message that a restored Bay would require achieving all goals of *Chesapeake 2000* and probably a lot more. By implication, it signaled that there could be no backing away from the levels of investment called for in *The Cost of a Clean Bay*.

Taking all these developments into account, in December 2003 the Chesapeake Executive Council called for the establishment of a Chesapeake Bay Watershed Blue Ribbon Finance Panel to consider funding sources to achieve the goals of *Chesapeake 2000* and to make recommendations in a report due by October 2004. The Panel was chaired by former Virginia Governor Gerald L. Baliles and included 15 distinguished representatives of the public and private sectors appointed by the governors of all six states in the watershed (including Delaware, New York and West Virginia), the Mayor of the District of Columbia, the Chair of the Commission and the Administrator of EPA. Delegate Jim Hubbard (Maryland) represented the Commission on the Panel, providing keen insights into both the Federal and state political process.

The report of the Blue Ribbon Finance Panel, *Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay*, noted the difficulty of estimating the full costs of Bay restoration, while at the same time recognizing the immediacy of the need to put programs in place to meet the 2010 Bay water quality goals. The report also called for simplicity, efficiency and cost-effectiveness in the programs developed to meet the goals. While the

new estimated cost of achieving all parts of the nutrient and sediment reduction goals was estimated at \$28 billion, the Panel concluded that the most important actions to benefit the Bay in the current decade would cost about \$15 billion plus an additional \$2.7 billion in recurring annual costs. The annual cost for capital and recurring costs for the remainder of the decade were calculated at \$4.8 billion each year, far exceeding the current level of effort. The Panel recommended formation of a Chesapeake Bay Regional Financing Authority, to be capitalized by both Federal and state governments.

Taking the Next Steps

Anticipating the cost estimates under development by the Blue Ribbon Panel, as well as the call of the Panel to find the most cost-effective measures, the Commission decided to pursue the answer to a fundamental question: With limited dollars available and 2010 approaching, where should we focus available funds to achieve the most efficient use of taxpayer dollars? The Commission recognized the immediate need to identify cost-effective programs and build a compelling case for their funding.

The result was the Chesapeake Bay Commission Report, *Cost-Effective Strategies for the Bay: Smart Investments for Nutrient and Sediment Reduction*, released in December 2004. The featured cost-effective practices are widely applicable throughout the watershed. Even under conservative assumptions of their combined effectiveness, the six practices can achieve about three-quarters of the nitrogen reduction goal for 2010 for about \$623 million per year, or about 13 percent of the annual costs of the cleanup estimated by the Blue Ribbon Panel.

Achieving three-quarters of the phosphorus goal would cost an additional \$322 million per year.

Cost-Effective Strategies for the Bay focuses on the 2010 water quality goal to remove the Bay from the list of impaired waters under the Clean Water Act. While an ideal approach might be to deal with the health and recovery of the living resources of the Bay, the means and measures to do that are subject to high levels of speculation and debate. Water quality, on the other hand, is a necessary pre-condition for recovery of the living resources of the Bay, as well as a measure of the effectiveness of upstream and land-based actions. In addition, the water quality goal is the basis of the state tributary strategies, which set out the actions to be taken to reach the goal. They are therefore tied to clear targets, measurable and capable of being modeled with respect to actions taken.

The water quality goals are tied to oxygen levels, clarity of Bay waters and chlorophyll levels. But the goals are reached by reducing the loadings of nitrogen, phosphorus (jointly called nutrients) and sediment entering the Bay. These reductions, in turn, are measured by estimating the effects of various management practices. These management practices and their effectiveness in reducing loadings of nutrients and sediment are the focus of *Cost-Effective Strategies for the Bay*.

The Commission's efforts to select the most cost-effective practices were both controversial and contributory. Controversial because, for the first time, a subset of the full suite of commonly applied pollution control measures were selected for priority implementation and funding. Contributory because, with limited

taxpayer funds available, decisions must be made to target new dollars in order to maximize environmental gains. Where could we get the biggest bang for the buck?

It was also controversial because five of the six practices selected focused on a single sector — agriculture. This presented a possible, and certainly unintentional, suggestion that only farmers should be required to make substantial sacrifices for the Bay. In fact, the Commission was suggesting where the least taxpayer investment could yield the greatest water quality improvement. With 2010 quickly approaching, where should we focus new and available funds to achieve the most efficient use of taxpayer dollars?

As with any analysis, there are strengths and weaknesses. The strength is the report's clear identification of six practices that could, if fully implemented, get us most of the way toward restoration. However, by directing attention to the 2010 water quality goal, the report does have the effect of down-playing some practices which have delayed benefits, but are quite cost-effective in the long run. Chief among these is the restoration of forest buffers along streams in both urban and rural areas, and the improved management of growth. While trees planted along streams are too slow-growing to provide much benefit by 2010 and changes in growth patterns will have a long-term, cumulative effect, the study is not intended to discourage such beneficial practices as part of the solution for the enduring health of the Bay.

Summary of Results

The Commission examined a total of 34 defined practices with measurable benefits capable of being modeled for effective-

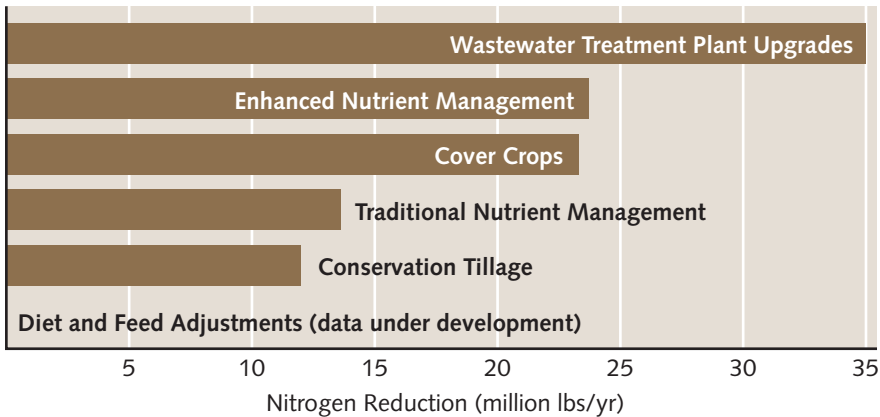
ness. Three parameters influenced the selection process: 1) the efficiency of the practice; 2) the cost of the practice per pound of reduction; and 3) the applicability of the practice watershed-wide. Preference was given to those practices that prevented or reduced pollution rather than cleaning it up once it was released into the environment. In some cases, such as air pollution controls, inadequate data and limited tools to model transport and effects made it difficult to assess both the effectiveness of reduction technologies and their cost.

Despite these limitations, the analysis was able to isolate six key practices that are widely applicable throughout the watershed and are cost-effective under a wide range of conditions.

1. Wastewater Treatment Plant Upgrades
2. Diet and Feed Adjustments
3. Traditional Nutrient Management
4. Enhanced Nutrient Management
5. Conservation Tillage
6. Cover Crops

1. Wastewater Treatment Plant Upgrades have the potential to reduce nitrogen by 35 million pounds per year, or about one-third of the total Baywide reduction goal of 103 million pounds, at an average cost of \$8.56 per pound. They can also contribute 3 million pounds of phosphorus reduction to the overall phosphorus reduction goal of 6.7 million pounds per year at \$74 per pound. These figures include both capital and operating and maintenance costs, amortized over 20 years. While they are higher than the costs of other preferred practices, the effectiveness of the reduction is the most reliable

Baywide Nitrogen Reduction Potential For the Six Most Cost-Effective Control Practices*



*All of the practices and associated percentages have been analyzed at their maximum feasible implementation levels, based on a 2002 baseline. The reductions attributed to each practice may be less when combined with other practices. All reductions except Wastewater Treatment Plant Upgrades and Diet and Feed Adjustments are estimated for the edge of the field, and experts suggest they should be reduced to accurately reflect loads delivered to the Bay, which is the basis for the 103m lb. reduction goal.

and immediate. And the costs can be spread over a wide user base.

2. Diet and Feed Adjustments generally reduce both manure production and the nutrient content of manure, offering both water quality improvements and economic savings for farmers. Excellent results have been achieved in the poultry industry for phosphorus reduction at essentially no cost. The change there involved the addition of the enzyme phytase, which has reduced average phosphorus concentrations in litter by 16 percent across the basin. The potential for expanded use in poultry, as well as application of the concept to other livestock is under investigation. The combination of changes in the constituents of feed as well as reducing overfeeding of livestock have a potential reduction benefit of 30-50 percent for

nitrogen and 40-60 percent for phosphorus, according to recent research studies.

3. Traditional Nutrient Management plans prescribe the amount and timing of nutrients applied to cropland as manure or commercial fertilizer. They are intended to reduce or eliminate excess application while assuring no loss of yield. Nutrient management plans have already been written for about 85 percent of the cropland in Maryland, 45 percent in Pennsylvania and 40 percent in Virginia. Completing them for remaining cropland and carrying them out would reduce nitrogen loadings by an additional 13.6 million pounds per year for only \$1.66 per pound, and an additional 0.8 million pounds of phosphorus for \$28.26 per pound.

4. Enhanced Nutrient Management calls for a further 15 percent reduction in nutri-

ents applied to cropland beyond traditional nutrient management. Incentive and insurance payments provide a “safety net” for farmers who may be reluctant to employ the practice for fear of lower yields. The overall result in the watershed would be to reduce nitrogen loadings by an additional 23.7 million pounds per year at a cost of \$4.41 per pound. Phosphorus would be reduced an additional 0.8 million pounds at a cost of \$95.79 per pound. Despite the large potential benefits, the infrastructure to support widespread enhanced nutrient management does not now exist, and would take some time to put in place. Higher payments in the early years may be needed to overcome farmer resistance to the lower nutrient levels and potential risk to yields.

5. Conservation Tillage is a set of planting practices that minimize soil cultivation to reduce erosion and nutrient runoff. Although in widespread use in the watershed, its expansion to all feasible areas would reduce nitrogen loadings an additional 12 million pounds per year at a cost per pound of \$1.57. Even more important, remarkable reductions would occur in phosphorus and sediment loadings from this practice at no additional cost. Phosphorus would be reduced by 2.59 million pounds — accounting for almost 40 percent of the total Baywide reduction goal. And the potential sediment reduction of 1.68 million tons per year from conservation tillage is 187 percent of the Baywide sediment goal.

6. Cover Crops are small grains planted in the fall to absorb leftover nutrients. Unlike winter grain crops, they are not fertilized and are turned under in the spring. Late cover crops are in use in some areas of the watershed; they are

planted after row crop harvest, up to 14 days after the average first frost date. Early cover crops are a newer concept; they are sown by air or similar dispersal before row crops are harvested and more than seven days before the frost date. As such, they have a longer time to establish their root structure and absorb the leftover nutrients. Use of cover crops in the report assumes a maximum of 50 percent of acreage is available each year due to traditional crop sequencing in the region. Nevertheless, late row crops have the potential to reduce nitrogen loadings by 15.2 million pounds for \$3.50 per pound; early row crops can bring a further reduction of 8.1 million pounds at \$2.33 per pound. Small reductions of phosphorus and sediment loadings would result at no additional charge under each practice.

As can be seen, the list of the most cost-effective alternatives includes a number of well-established and broadly accepted measures. It also includes the area of diet and feed management, where more research is needed, as well as enhanced nutrient management, where supportive programs do not currently exist. With 2010 closely approaching, a strategy to apply these measures requires both fast action and full funding of the already accepted practices and strong efforts to bring on line the new practices as expeditiously as possible.

The report makes a number of additional points related to the potential nutrient and sediment reductions. First, if more than one practice is carried out on the same acreage, the reductions are not necessarily additive; that is, if one practice results in fewer nutrients placed on the land, a subsequent practice to reduce nutrient runoff will be less effective since it will have fewer nutrients to work

with. The report used the Chesapeake Bay Program model to calculate these interactions in order to avoid over-counting the effectiveness of multiple measures on the same acreage. If all practices were simply added, the potential reductions would be 72.6 million pounds of nitrogen and 4.85 million pounds of phosphorus. Using the model, and conservative assumptions, reduced these numbers to 53.6 million and 2.93 million pounds, respectively. Still, the reductions represent an extraordinary opportunity for clean water.

Second, a section in the report deals with the issue of use of excess animal manures. Since many of the identified cost-effective management measures result in less placement of manure, the need to develop and market alternative uses becomes a priority. The report evaluates the current state of technology and emerging alternative uses.

Third, the Commission added a center section to the final report to explain the difficulties of estimating the cost-effectiveness of management practices to deal with urban stormwater runoff. These are of concern because urban and suburban areas continue to grow, and remain the only land uses where nutrient and sediment loadings are on the increase. Even where cost and effectiveness measures can be pinned down, despite the complex and variable conditions, the

costs of remediation are extremely high and the effectiveness hard to measure. The primary exception is the placement of forest buffers along urban streams, but as noted, these will provide little benefit by the 2010 water quality deadline.

In Conclusion

The report serves multiple purposes. It lays out the rationale for selecting the most cost-effective measures to improve the Bay's water quality. It articulates the obstacles and opportunities for their widespread adoption and funding. It provides food for thought to the states as they develop and refine their tributary strategies for nutrient and sediment reduction. And it serves the Commission members as they seek General Assembly and Congressional support for, among other things, the point source and agricultural initiatives identified in the report.

Most of our agricultural funding is provided by the Federal government. The Congress will reauthorize the Farm Bill in 2007. Funding associated with this program represents millions of dollars for our region. The conservation provisions of the Farm Bill were firmly established in its reauthorization in 2002 and with proper guidance can grow. The Commission will work to ensure that the agricultural measures and issues identified in our report are addressed in Farm Bill proposals for the Chesapeake region.

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ANNAPOLIS, MD

January 8 & 9

THURSDAY, JANUARY 8

Call to Order

Roll Call

Approval of Agenda

Adoption of November 2003 minutes

Welcoming Remarks

HONORABLE MICHAEL E. BUSCH
Speaker, Maryland House of Delegates

Chairman's Update

Executive Council Meeting

**MOVING FORWARD ON NUTRIENT
REDUCTION INITIATIVES:
TRANSLATING SCIENTIFIC ADVICE
TO ACTION**

The November 2003 Commission meeting involved some of the region's top scientists and practitioners in a two-day discussion of how best to accelerate progress in capturing the nutrient load and restoring the living resources.

- **Building Accountability on a Tributary Scale: Chesapeake Waterways Report Cards**
DR. BILL DENNISON
University of Maryland Center for Environmental Science
- **Refining Nutrient Reduction Efficiencies**
TOM SIMPSON
*University of Maryland
Chairman, Chesapeake Bay Program
Nutrient Subcommittee*
- **Reducing Nutrients Through Partnerships**
A Rural Effort: Lessons Learned in Building Support for Water Quality Improvements
J.D. WILKINS
North Fork Watershed Association

An Urban Effort: Local Support for Financing Stormwater Nutrient Reduction

PHIL DAVENPORT
Virginia Beach Department of Public Works

A Regional Effort: The Metropolitan Washington Council of Governments (COG)

BRUCE R. WILLIAMS
Chairman, COG Chesapeake Bay Policy Committee; Mayor Pro Tem, City of Takoma Park, Maryland
PENELOPE A. GROSS
Past Chairman, COG Chesapeake Bay Policy Committee; Member, Fairfax Board of Supervisors

- **Addressing Point Source Pollution**
GOV. ROBERT L. EHRLICH
Governor Ehrlich joined with Commission members to unveil his proposal to raise \$1 billion to fund advanced nutrient removal at Maryland's wastewater treatment plants.

FRIDAY, JANUARY 9

Breakfast Delegation Meetings

Legislative 2004 General Assembly Sessions
Virginia

DELEGATE ROBERT BLOXOM
SENATOR EMMETT HANGER

Maryland

SENATOR LOWELL STOLTZFUS
DELEGATE JOHN WOOD, JR.

Pennsylvania

REPRESENTATIVE RUSS FAIRCHILD
SENATOR NOAH WENGER

A CONTINUATION OF THE PREVIOUS DAY'S DISCUSSIONS ON NUTRIENT REDUCTION INITIATIVES

- **Nutrient Limitations in Wastewater Discharge Permits: The Chesapeake Bay**

Foundation's Petition to EPA

THERESA PIERNO

*Vice President, Environmental
Protection & Restoration, Chesapeake
Bay Foundation*

ROY HOAGLAND

*Virginia Director, Chesapeake Bay
Foundation*

- **How a Petition Works**

BOB KORONCAI

*Region III, U.S. Environmental
Protection Agency*

**Forging a Consensus on the Blue Plains
Wastewater Treatment Plant: A Dialogue
Among Stakeholders**

TOM SIMPSON

*University of Maryland
Chairman, Chesapeake Bay Program
Nutrient Subcommittee*

DAVID W. LAKE

*Montgomery County Department of
Environmental Protection; D.C. Water
and Sewer Authority (WASA) Board of
Directors*

ALLISON WIEDEMAN

*Technology Coordinator, EPA Chesapeake
Bay Program*

Election of the 2004 Commission Officers

Outgoing 2003 Chairman's Remarks

DELEGATE ROBERT S. BLOXOM (VA.)

Incoming 2004 Chairman's Remarks

SENATOR J. LOWELL STOLTZFUS (MD.)

New Business

WASHINGTON, DC

May 6 & 7

THURSDAY, MAY 6

The Commission met in Washington, D.C., with White House officials to present a letter to President George W. Bush, signed by all members, seeking issuance of an Executive Order to reaffirm the Federal government's commitment to the Bay restoration effort and recognize the Bay as a "national treasure."

The Commissioners also met with their Congressional colleagues in the Chesapeake Bay watershed region to both provide and seek information.

FRIDAY, MAY 7

Breakfast Delegation Meetings

Call to Order

Roll Call

Approval of Agenda

Adoption of January 2004 Minutes

**Review of Congressional Delegation and
White House Briefings**

Chairman's Updates

- Status: *Crassostrea ariakensis*
- Tributary Strategies

Each of the states provided an update on the development and progress of their Tributary Strategies

Reports From the General Assemblies

Legislation and Budget Impacts

Pennsylvania: SENATOR MICHAEL WAUGH

Virginia: SENATOR EMMETT HANGER, JR.

Maryland: SENATOR J. LOWELL STOLTZFUS

**REDUCING AIR-BORNE NITROGEN
DEPOSITION**

- Nitrogen oxide emissions from power plants and motor vehicles and ammonia emissions from agriculture and urban sources.

MAGGIE KERCHNER

*Air Coordinator, National Oceanic
and Atmospheric Administration;
Chesapeake Bay Program Office*

- A description of how the Clean Smokestack Act caps nitrogen oxide and sulfur dioxide emissions to achieve about 75 percent reduction by 2013.

BROCK M. NICHOLSON

*Deputy Director, North Carolina
Division of Air Quality; N.C.
Department of Environment and
Natural Resources*

New Business

HARRISBURG, PENNSYLVANIA

September 9 & 10

THURSDAY, SEPTEMBER 9

Welcoming Remarks

SENATOR MIKE WAUGH

Chairman's Welcome

Call to Order

Roll Call

Approval of Agenda

Adoption of November 2004 Minutes

COST- EFFECTIVENESS REPORT

A Review of the Draft Report,
Smart Investments for a Clean Bay
How can you get the largest nutrient and sediment reductions for the least cost?
The Commission members reviewed the analytical process and data used to select 5-8 practices as the most cost-effective nutrient control strategies.

Drafters Panel

MELANIE DAVENPORT

BOB HOYT

Contractor: Ecologix Group

BILL MATUSZESKI

Contractor: Funded by Keith Campbell Foundation

PAT STUNTZ

ANN SWANSON

The Commission called for modifications and further review before publication and distribution. A subcommittee was established to finalize the report for re-consideration at the November meeting.

FRIDAY, SEPTEMBER 10

Delegation Breakfast Meetings

Chairman's Update

- Presidential Executive Order
- Blue Ribbon Panel update
- Blue Crab Technical Advisory Committee Report
- 2005 Meeting Schedule
- Announcements by Commission members

Welcoming Remarks

THE HONORABLE EDWARD G. RENDELL
Governor of Pennsylvania

LIVING RESOURCES: CURRENT SPECIES IN DISCUSSION

I. THE NATIVE

Atlantic Menhaden: *Brevoortia tyrannus*

BOB WOOD, PH.D.

Acting Branch Chief, Cooperative Oxford Laboratory; National Oceanic and Atmospheric Administration

II. THE INVADERS

Zebra Mussel: *Dreissena polymorpha*

TONY SHAW

Water Pollution Biologist, Pennsylvania Department of Environmental Protection

Snakehead: *Channa argus*

STEVE EARLY

Assistant Director, Fisheries Service. Maryland Department of Natural Resources

III. THE INTRODUCED

Asian Oyster: *Crassostrea ariakensis*

JAMIE KING, PH.D.

Associate Research Scientist, University of Maryland; Non-native Oyster Rep., National Oceanic and Atmospheric Administration

PETE JENSEN

Associate Deputy Secretary, Maryland Department of Natural Resources

New Business

Adjourn

RICHMOND, VA

November 4 & 5

THURSDAY, NOVEMBER 4

CALL TO ORDER

Roll Call

Approval of Agenda

Adoption of September 2004 Minutes

CHAIRMAN'S WELCOME

WELCOMING REMARKS

THE HONORABLE MARK R. WARNER
Governor of Virginia

TRIBUTARY STRATEGIES: The Most Significant Practices, Their Cost and New Policy Needs

- What are the top several nutrient control measures on which their strategies rely?
- What practices are in their tributary strategies in addition to those practices accepted by the Bay Program model?
- What new local, state or Federal policies would help ensure implementation?
- What legislative and/or funding initiatives will be proposed in 2005?

Overview

MELANIE A. DAVENPORT

*Chair, Tributary Strategies Workgroup,
Nutrient Subcommittee, Chesapeake Bay
Program*

Virginia

RUSSELL W. BAXTER

*Assistant Secretary of Natural Resources,
Virginia Office of the Secretary of Natural
Resources*

Maryland

MARK BUNDY

*Assistant Secretary, Maryland Department
of Natural Resources*

Pennsylvania

CATHY CURRAN MYERS

*Deputy Secretary, Office of Water
Management, Pennsylvania Department
of Environmental Protection*

FRIDAY, NOVEMBER 5TH

Delegation Breakfast Meetings

Call to Order

Chairman's Update

COST-EFFECTIVE STRATEGIES FOR THE BAY: Identifying Smart Investments for Nutrient Reduction

Cost-Effectiveness Report Subcommittee
Chair Senator Emmett Hanger reviewed the
revisions to the cost effectiveness report and
recommended approval. The report was
endorsed unanimously, thereby authorizing
its printing and distribution.

- **Recommendations Of The Blue Ribbon
Finance Panel**

THE HON. GERALD L. BALILES

*Former Governor of Virginia and
Chairman, Blue Ribbon Panel*

- **Innovative Practices to Reduce Urban
Nutrient Pollution**

A presentation of the various engineer-
ing options for incorporating low-impact
development designs in urban and suburban
construction.

JOHN TIPPETT

*Executive Director, Friends of the
Rappahannock*

Member Announcements and New Business

Adjourn

**Chesapeake Bay Commission***Policy for the Bay · www.chesbay.state.va.us*

May 6, 2004

President George W. Bush
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

Dear Mr. President:

We write to you today requesting your support for the restoration of the Chesapeake Bay and ask that you make it a top environmental priority. In order to further our potential for success in restoring the Bay, we respectfully ask that you consider issuing an Executive Order that identifies the Chesapeake as a national treasure and directs federal agencies to better coordinate, target and fund the actions needed to fulfill the federal commitments to Bay restoration. We have attached a number of key elements that could be included in such an order.

The Chesapeake Bay is widely recognized as the largest and most productive estuary in the United States. Due to its estuarine nature, the Bay has historically been a remarkably fertile ecosystem and a huge economic engine for the mid-Atlantic region of the country. But the Bay remains seriously impaired. In fact, during the summer of 2003, scientists reported that the volume of oxygen-depleted water in the Bay, known as the "dead zone," had reached the highest levels seen in the last twenty years. Just last month, the EPA released a draft of its second National Coastal Condition Report. Of the five environmental indicators used to assess the health of our nation's estuaries, the Northeast Region, which includes the Chesapeake Bay, received a rating of Poor for three of the five indicators, more than any other part of the country.

For the last 20 years, the citizens, legislatures and Governors of Maryland, Pennsylvania and Virginia, along with the District of Columbia and the U.S. Environmental Protection Agency, have joined forces with the federal government to advance the Bay cleanup. While we cannot ignore our successes, there remain much larger and more critical challenges ahead. More than anything else, the Bay partnership needs dramatic increases in funding from all levels in order to restore this historic resource. Last year, the Chesapeake Bay Commission released a report on what it will cost to clean up the Bay. Our estimate is that between now and 2010, it will take approximately \$19 billion. Only about \$6.3 billion will be available under current funding scenarios. For these reasons, we also join our federal colleagues in urging you to commit the funds necessary to restore the Bay's water quality.


Headquarters & Maryland Office 60 WEST STREET, SUITE 406 · ANNAPOLIS, MD 21401 · PHONE 410.263.3420 · FAX 410.263.9338

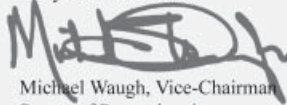
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We stand ready to provide whatever assistance you may need in making an Executive Order a reality. Thank you for your kind attention.


Sincerely,



J. Lowell Stoltzfus, Chairman
Maryland State Senate



Michael Vaughn, Vice-Chairman
Senate of Pennsylvania



Thelma Drake
Virginia House of Delegates

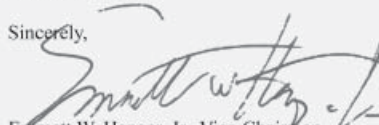

Bernie Fowler
Maryland Citizen Representative


Brian E. Frosh
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Secretary of Environmental Protection,
Pennsylvania



Albert C. Pollard, Jr.
Virginia House of Delegates

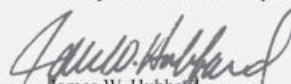

Emmett W. Hanger, Jr., Vice-Chairman
Senate of Virginia

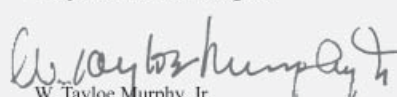

Bill Bolling
Senate of Virginia

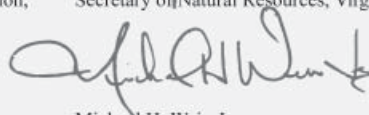

Russ Fairchild
Pennsylvania House of Representatives


C. Ronald Franks
Secretary of Natural Resources, Maryland

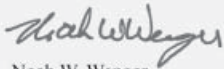

Arthur D. Hershey
Pennsylvania House of Representatives


James W. Hubbard
Maryland House of Delegates

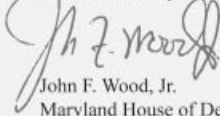

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Secretary of Natural Resources, Virginia


Michael H. Weir, Jr.
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Senate of Pennsylvania



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ABOUT THE PHOTOGRAPHER

Dave Harp is no stranger to the outdoors. A native Marylander, he saved to acquire his first camera at the age of 12 and has been taking pictures ever since. In a photographic career that has taken him from the wilds of Alaska to the reefs of Australia, the Chesapeake Bay remains Harp's favorite subject. He has produced three books on the Bay and is widely known for his support of protection and restoration initiatives.



This report was printed on recycled paper.

CHESAPEAKE BAY COMMISSION

The Chesapeake Bay Commission is a policy leader in the restoration of the Chesapeake Bay. As a tri-state legislative assembly representing Maryland, Virginia and Pennsylvania, its mission is to identify critical environmental needs, evaluate public concerns and ensure state and Federal actions to sustain the living resources of the Chesapeake Bay.

The Commission maintains offices in Maryland, Virginia and Pennsylvania. Commission staff are available to assist any member of the general assembly of any signatory state on matters pertaining to the Chesapeake Bay and the Chesapeake Bay Program.

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