

Passing the Baton

Carol R. Collier was sworn in on September 9, 1998, as the Commission's new executive director, succeeding Gerald M. Hansler who retired after 21 years of dedicated service.

Ms. Collier becomes the Commission's third executive director in the agency's 37-year history. Her appointment marks the first time a woman has been named head of an interstate-federal compact agency.

Before joining the Commission, Ms. Collier served as executive director of Pennsylvania's 21st Century Environment

Commission, established to set the Commonwealth's future environmental priorities. Prior to that she was director of the Pennsylvania Department of Environmental Protection's (DEP's) Southeast Region, which takes in much of the lower Delaware River Watershed.

Jeffrey Featherstone, a 16-year veteran of the Commission, has been appointed to

continued on page 6



Carol R. Collier

Delaware River Fisheries Bounce Back Toxics Still a Problem

Fish populations in the lower Delaware River and Bay have shown a sharp increase in recent years, due in large part to a significant improvement in overall water quality.

These findings are contained in a Commission report prepared in cooperation with the Delaware Estuary Program, a project set up in 1988 to protect estuarine systems of national significance.

Fisheries on the rebound include American shad, weakfish, striped bass, Atlantic croaker, Atlantic silversides, bay anchovy, black drum, hogchoker, northern kingfish, and American eel, according to the report, released in August.

Within the past decade, the striped bass fishery has shown a remarkable recovery and the number of weakfish, the bay's most economically important fishery, is also on the rise, the report notes. Both

fisheries pump millions of dollars into local cash registers.

On the downside, Atlantic sturgeon populations appear to be on the decline, as do the number of horseshoe crabs in Delaware Bay. Blue crab populations increased during the 1990s, but sampling surveys indicate their numbers have tapered off in the past two years, the report states.

The improved water quality that brought the fish back is tied to sharp increases in dissolved oxygen in the river. Annual average oxygen levels today range from 3.5 to 4.0 milligrams per liter (mg/l) at Delaware River and Bay monitoring stations, meeting or exceeding on a yearly average the required minimum DRBC and federal standards.

In the meantime, bacterial levels have dropped off with mean levels of fecal

continued on page 5

John Flomo of Newark, N.J., displays a three-foot, six-inch catfish he recently caught in the Delaware River at Trenton. Bottom feeders, catfish are susceptible to toxic contaminants found in river bed sediment.



LESLIE BARBARO, THE TRENTONIAN

INSIDE

- The Commission 2
- Commissioners' Corner 2
- Cooperative River Study Underway 3
- Commission Hosts Workshop 4
- The "Hit" Parade 4
- Name That Beast 8

New Jersey

Gov. Christine Todd Whitman
Chair

Robert C. Shinn, Jr.
Alternate

Robert Tudor
Second Alternate

New York

Gov. George E. Pataki
Vice Chair

N.G. Kaul
Alternate

John L. Middelkoop
Second Alternate

Warren T. Lavery
Third Alternate

Joel A. Miele, Sr.
Advisor

Delaware

Gov. Thomas R. Carper
Second Vice Chair

Christophe A.G. Tulou
Alternate

Dr. Sergio Huerta
Second Alternate

Dr. Harry W. Otto
Third Alternate

United States

Maj. Gen. Jerry L. Sinn
Member

Lt. Col. Debra M. Lewis
Advisor

Pennsylvania

Gov. Tom Ridge
Member

Irene B. Brooks
Alternate

William A. Gast
Second Alternate

Kumar Kishinchand
Advisor

*As of November 6, 1998

DRBCurrents is published by the Delaware River Basin Commission, an interstate/federal agency that manages the water resources within the 13,539-square-mile basin.

DRBC Executive Director: Carol R. Collier

DRBCurrents Editor: Christopher M. Roberts

Phone 609-883-9500 ext. 205

Fax: 609-883-9522

E-mail: croboters@drbc.state.nj.us

Printed on recycled paper with soy inks



Commissioners' Corner:

Watershed Management: Cutting Edge in 1961 ... and 1998

By Robert Tudor

Sometimes you need to take a step back to see the forest for the trees. New Jersey, like its sister states, has made substantial progress since the 1970s in its efforts to restore water quality sullied by a variety of human assaults. Early efforts were largely focused on the more obvious sources of pollution, those which entered directly into waterways through pipes. Not only were these point sources easy to identify, they could be regulated. More than that, they could be viewed as "they," requiring little of "us" except perhaps marginal increases in the cost of some goods and services.

Despite the success of these efforts, our waters have not fully rebounded. By now, of

course, we know that numerous other activities impact our waterways, many of which involve how we live on the land. Nonpoint sources of pollution such as fertilizers and pesticides on our lawns and farms, failing septic systems, metals carried by rain washing our streets, and particulates in the air, all enter our waters. In turn, estuaries and lakes become eutrophic, pathogens limit recreational activities, and toxics contaminate the water we drink and fish we eat.

With the realization that every action we take on the land eventually affects our waters came the recognition that a comprehensive approach was needed. That is why the New Jersey Department of Environmental Protection (NJDEP) has initiated a statewide watershed management program to protect its water resources today and well into the future. Watersheds are the areas of land that drain to surface water bodies. A watershed



Mr. Tudor represents New Jersey Governor Christine Todd Whitman on the DRBC.

management approach for the first time matches the scope of the solution to the scope of the problem. For those of us newly enthusiastic about watershed management and its comprehensive approach to water resources—the USEPA, various states—a pleasant surprise awaits.

Watershed management works. In fact, it's been working and working quite well in the four-state Delaware River Basin since 1961 under the able guidance of the Delaware River Basin Commission. The Commission predated the federal and state pollution control agencies by at least a decade. Its programs are watershed-based.

More than that, the Commission has led the way in bringing often divergent interests together by seeking participation of all affected parties in the development of water-related policies which will affect them all. It is this unique aspect—integrating affected stakeholders early in the process—which sets the water management approach apart from prior top-down, site-specific regulatory approaches. Watershed management will also for the first time integrate ground and surface water issues, point and nonpoint sources, and land, water, and air contributions to water quality problems.

One of the exciting outgrowths of the Commission's recent reexamination of its mission and programs is the high priority placed on providing more direct technical assistance at the watershed level. With this in mind, we (at the NJDEP) look forward to working closely with the Commission in the Musconetcong Watershed Characterization and Assessment Study and trust that this collaboration will form the basis for similar partnering elsewhere in New Jersey and the Delaware River Basin.

A watershed management approach matches the scope of the solution to the scope of the problem.

Cooperative River Study Underway

The Commission and the Delaware Riverkeeper Network have completed the first year of a pilot water quality monitoring program that initially focused on an eight-mile reach of the Delaware River and nine tributary streams from Washington Crossing, Pa., to the head of tide at Trenton, N.J.

Working under the auspices of the Delaware River Greenway Partnership, DRBC and Riverkeeper staff, along with citizen volunteers, gathered water quality and aquatic plant data in an effort to fulfill a plateful of goals:

- increase the long-term monitoring coverage of the Lower Delaware, a need recognized in the National Park Service's Lower Delaware River Management Plan;
- statistically define existing water quality as a baseline for detection of future change;
- develop pollution abatement priorities for both point and nonpoint sources of pollution;
- prioritize Delaware River tributaries for monitoring and watershed planning purposes;
- safeguard the health and safety of the river-using public.

In addition to the Delaware mainstem, monitoring was conducted on these tributaries: Pidcock, Jericho, Houghs, Dyer, and Buck/Brock creeks in Pennsylvania; and Moore, Fiddler, Jacobs, and Gold Run creeks in New Jersey.

As the high streamflows of spring gave way to low flows in late summer and early fall, several impacts on water quality were detected in tributary streams: low dissolved oxygen levels, high nutrient concentrations, habitat degradation, and eroded streambanks and channel disturbances, which contribute to increased sediment loads.

During July, a 24-hour (diel) study was conducted at three locations on the Delaware to measure total aquatic community productivity. Monitoring took place day and night from the Washington Crossing Bridge, the Yardley Pa. Access Area, and Trenton's Calhoun Street Bridge. Readings for water and air temperature, dissolved oxygen, pH, and conductivity were taken

hourly in an effort to capture a snapshot of the river's "breathing" and productivity.

The data from this and other studies on the river and the nine tributaries are being analyzed as part of the Lower Delaware Cooperative Monitoring Program.

The results will be published at a later date in a report that also will contain summary descriptions of biological sampling, using aquatic insects as indicators of water quality. Tributary flow data, which is used to calculate pollutant loads to the Delaware River, also will be presented along with climatic data for the survey period.

In coming years the program, subject to available funding, hopefully will be expanded to cover the Delaware from the Delaware Water Gap to Trenton, including these tributaries—the Lehigh, the Musconetcong, the Tohickon, the Pequest, the Bushkill, the Brodhead, and the Paulinskill.

As the high streamflows of spring gave way to low flows in late summer and early fall, several impacts on water quality were detected in tributary streams.

Using a flashlight to illuminate their equipment, three DRBC staffers measure dissolved oxygen concentrations as part of the 24-hour diel study. Left to right: Rick Fromuth, Jason Tsai, and Greg Cavallo.



Commission Hosts Workshops

The Commission sponsored two workshops in September on its Special Protection Waters regulations in an effort to get stakeholders more involved in the implementation process.

The workshops were held in Matamoras, Pa., and addressed two subjects:

- an explanation of the project review criteria that triggers the regulations, with hypothetical project cases presented by DRBC staff; and
- identification and ranking of criteria for prioritization of Special Protection Waters' watersheds.

About 100 people attended the workshops, including federal, state, and local

officials; representatives of watershed associations; and members of the regulated community.

The DRBC regulations, crafted in cooperation with the National Park Service, were sparked by increasing development in the northern tier of the basin, especially in the Pocono Mountain region. They are designed to protect the high water quality in the 125-mile reach of the Delaware River from Hancock, N.Y., to the southern boundary of the Delaware Water Gap, including portions of some tributary streams.



Upper Delaware Council members Phil Chase, left, and Bruce Selneck discuss the Special Protection Waters regulations during a workshop break.

The "Hit" Parade

The Commission's Web Site continues to grow with the introduction of some new items that have proved quite popular.

The DRBC's regulations are now posted in a downloadable format and are receiving lots of attention. And we've added draft dockets that are slated for Commission action.

Two popular water quality reports also are featured and are getting an abundance of "hits": *Delaware Estuary Monitoring Report*, and *Study of the Loadings of Polychlorinated Biphenyls (PCBs) from Tributaries and Point Sources Discharging to the Tidal Delaware River*.

Other new items:

- location maps to help travelers locate the DRBC office;
- fresh summaries on the Commission, the basin, the Commission's Toxics

Management Program, the Special Protection Waters Program, and the Southeastern Pennsylvania Protected Area; and

- two new pages under *Hydrologic Conditions*—with charts and text detailing the Commission's basinwide and lower basin drought criteria and operating plans.

We're always looking for new and creative ways to hone our Web Site into a more effective public outreach tool. Please send ideas to Chris Roberts, the Commission's public information officer. Phone: 609-883-9500 ext. 205; e-mail: <croberts@drbc.state.nj.us>. The Commission's Web Site address is <www.state.nj.us/drbc/>.



coliform averaging consistently below the federal standards for primary contact recreation in the tidal river and bay. Sampling indicates enterococcus levels likewise are in compliance with these standards.

Toxics: A Lingering Problem

While water quality in the Delaware has shown remarkable improvement since the days when the lower river was little more than an open sewer, there are still problems that need remedies. The presence of toxics in the river is one of them.

In 1989, fish consumption advisories were issued for striped bass, white perch, and catfish by the states of New Jersey and Pennsylvania, and later Delaware, because of the presence of polychlorinated biphenyls (PCBs) and chlorinated pesticides in the Delaware's water column and sediment. The advisories were prompted by DRBC toxic studies.

The studies documented that in addition to PCBs and chlorinated pesticides, there are other elevated levels of toxics in the river. These include polynuclear aromatic hydrocarbons (PAHs), DDT-related pesticides, and heavy metals, such as chromium, copper, lead, mercury, and zinc.

The highest concentrations of these toxic pollutants occur in a 14-mile, heavily urbanized portion of the river between the old Philadelphia Navy Yard upstream to the Tacony–Palmyra Bridge. Sources include natural phenomena, discharges from industrial and municipal wastewater treatment plants, nonpoint sources such as storm water runoff, and atmospheric inputs.

In June of 1998 the Commission released a report documenting current and historic sources of PCBs that are contributing to toxic fish contamination.

The report indicates that the current problem cannot be attributed solely or predominantly to historic sediment contamination, as many scientists have believed. Instead, the active loadings entering the estuary from sewage treatment plants, combined sewer overflows (CSOs), and tributary streams are sufficient, independent of PCBs already present, to cause water quality problems.

These sources, however, are not themselves generators of PCBs. Rather, they are merely conduits for PCBs that have been inadvertently or deliberately introduced into

sewage collection systems, carried in erosion from contaminated upland sites, or transported from tributary watersheds.

Sewage treatment plants, in fact, significantly reduce the amount of PCBs entering the estuary, as evidenced by much lower concentrations of PCBs in the water discharged from the treatment plants compared to that in the untreated wastewater entering the plants.

In releasing the report, the Commission hopes to increase public awareness that PCBs are a current and not a historical threat to the health of the biota and to users of the estuary, and to encourage proper disposal of electrical equipment containing PCBs.

The study that generated the report was jointly funded by the U.S. Environmental Protection Agency and the Commission.

Regulations Adopted

As a result of this and other studies, the DRBC now has on the books regulations governing the discharge of toxic pollutants from wastewater treatment plants to the tidal Delaware River.

The regulations, which took effect Jan. 1, 1997, set uniform water quality criteria for the pollutants for the 85-mile reach of the river from the head of tide at Trenton, N.J., downstream to the Delaware Bay, including tidal portions of tributary streams. They also establish procedures for setting wasteload allocations and effluent limitations where required for 78 riverbank treatment plants.

The water quality criteria are designed to address the effects of acute and chronic toxicity to aquatic life and the potential for harmful effects on humans through ingestion of untreated river water and/or the consumption of resident fish and shellfish. The wasteload allocation program limits the amount of pollutants that can be discharged by individual treatment plants to achieve the criteria.

The regulations were crafted in response to 1987 amendments to the federal Clean Water Act, which required states to adopt water quality criteria for toxic pollutants and identify those stretches of waterways where the criteria were being exceeded.

In an effort to meet the federal mandate, Delaware, Pennsylvania, and New Jer-

sey independently developed criteria for the tidal reach of the Delaware, which serves as the states' common border.

Problems inherent in this splintered approach soon became apparent and in 1989, at the request of the three states, the Commission established the Delaware Estuary Toxics Management Program, which drafted the new regulations.

They were developed with scientific and policy input from the Commission's Water Quality Advisory Committee, which includes representatives from the state environmental agencies in Delaware, New Jersey, Pennsylvania, and New York; from the U.S. Environmental Protection Agency (Regions II and III); and from the University of Rhode Island and the Academy of Natural Sciences in Philadelphia.

A second group, the DRBC-DELEP Toxics Advisory Committee, also provided input. This committee is charged with developing recommendations for the management of toxic substances found in waters throughout the entire Delaware River Basin.

The Commission's toxics management program at first focused only on toxic pollutants found in point-source (end-of-pipe) discharges to the river from both industrial and municipal wastewater treatment plants.

The Commission embarked on the next phase of the program in 1996: to identify and control nonpoint sources of PCBs and

While water quality in the Delaware has shown remarkable improvement, there are still problems that need remedies, such as the presence of toxics.

chlorinated pesticides. A study of the loadings of PCBs from ten Delaware River tributaries (plus six additional point sources) was initiated. Commission staff also is identifying other suspected nonpoint sources, including Superfund sites and landfills.

The two reports on which this article is based are: *Delaware Estuary Monitoring Report and Study of the Loadings of Polychlorinated Biphenyls (PCBs) from Tributaries and Point Sources Discharging to the Tidal Delaware River*. Both can be downloaded from the Commission's Web Site: <www.state.nj.us/drbc/>.

the newly created post of DRBC deputy executive director. As the Commission's chief policy analyst, he was a leader in the "Retreat" process that redefined the DRBC's mission and goals.

He also has spearheaded the Commission's water conservation programs, establishing the DRBC as a leader in the international water conservation arena.

Mr. Featherstone has spent his entire career in environmental and water-related areas. Prior to joining the DRBC, he was planning director for the Upper Mississippi River Basin Commission and a planner and hydrologist with the Minnesota Department of Natural Resources.

He holds a bachelor of arts degree in geography from the University of Minnesota, a masters of arts degree in public administration from Rider University, and is a Ph.D candidate in public administration at Temple University.

Collier: A Senior Ecologist

Before joining Pennsylvania's DEP, Ms. Collier worked 19 years with BCM Environmental Engineers, Inc., beginning as a student intern and ultimately becoming vice president of environmental planning, science, and risk.

A native of Monmouth County, N.J., she holds a bachelor of arts degree in environmental biology from Smith College

and a masters in regional planning from the University of Pennsylvania. She is a professional planner licensed in New Jersey, a member of the American

Institute of Certified Planners, and is a senior ecologist as certified by the Ecological Society of America.

Ms. Collier won the 1998 Women of Distinction Award presented by the Philadelphia Business Journal and other organizations to honor the career and community contributions made by women in the Greater Philadelphia Region. A year earlier she received the Touchstone Award

from the Society of Women Environmental Professionals. She has published widely on environmental and water-related topics, and is a frequent lecturer on a variety of environmental issues.

"Carol Collier is an outstanding choice for this position," noted Irene Brooks, Pennsylvania's DRBC commissioner. "Her background and experience, both in private industry and the public sector, make her eminently qualified for this assignment. She will be a great asset to the Commission as it enters the new century."

Hansler: A Lasting Legacy

Jerry Hansler joined the Commission as executive director in 1977 after an exemplary career with the U.S. Environmental Protection Agency.

At the time of his retirement he was saluted by the DRBC's five present and numerous former commissioners, friends, and co-workers, and was commended in a Commission resolution that read in part:

"Gerald M. Hansler has skillfully advocated on behalf of the Commission and has provided unmatched leadership which has culminated in a myriad of major accomplishments. (His) watershed management policies ... have served as a model for watersheds across the country and around the world. He has been a true friend of the Delaware River ... and has left a lasting legacy in the Delaware River Basin and in the lives of all who know him."

New Commissioners

Maj. Gen. Jerry L. Sinn has been appointed by President Clinton to serve as the Commission's new federal representative.

A career soldier, he assumed command of the North Atlantic Division of the U.S. Army Corps of Engineers in July of 1997.

The division is one of eight supervisory regional offices reporting to the Corps' headquarters in Washington, D.C. It is responsible for federal water resource projects and military construction in the Mid-Atlantic and New England states, the District of Columbia, and overseas.

Carol Collier is an outstanding choice for this position.... She will be a great asset to the Commission as it enters the new century.

Gen. Sinn enlisted in the Army in 1968. As a lieutenant he served as a "tunnel rat" in Viet Nam and later held command positions in Korea and Southeast Asia.

A graduate of the University of Missouri, the Command and General Staff College, and the U.S. Army War College, he also has taught mathematics at the U.S. Military Academy at West Point. His military decorations include the Legion of Merit, Bronze Star, Purple Heart, and Army Commendation Medal.

Gen. Sinn succeeds **Vincent P. D'Anna** as the DRBC's federal commissioner. Mr. D'Anna served in the post for roughly four years and is remembered warmly for his tenacity in helping to forge Commission policy.

William A. Gast, chief of the Division of Water Use Planning in Pennsylvania's Department of Environmental Protection, has been appointed the Commonwealth's second alternate commissioner to the DRBC.

He joined the division in 1969 and during the 1970s worked actively in developing data management systems for Pennsylvania's State Water Plan. He was named chief of the division in 1980 and in that capacity has managed the division's surface water allocation, water planning, and data management programs.

Mr. Gast holds a bachelor of science degree in civil engineering from Lehigh University and is a licensed professional engineer in Pennsylvania.

New Advisor

Lt. Col. Debra M. Lewis is the Commission's new federal advisor. She was sworn in in August of 1998 as the U.S. Army Corps of Engineers' 50th commander of the Philadelphia District.

She graduated from the United States Military Academy in 1980 and holds a master's in business administration from Harvard. She then served as a faculty member at West Point.

Prior to becoming the Philadelphia District's first woman commander, Col. Lewis served as a company commander

and in other leadership posts in North Carolina, Hawaii, and Washington, D.C.

Thanks, You're Missed

Gerard L. Esposito, who served the Commission as alternate to Delaware Governors Michael Castle and Thomas Carper since 1987, has left the Delaware Department of Natural Resources and Environmental Control to accept a position as executive vice president with Tide-water Utilities. While at the Commission, he provided skillful leadership, including his guidance of the "Retreat" process which laid the groundwork for charting the DRBC's future.

Steven A. Runkle, who served as Commission alternate to Pennsylvania Governor Tom Ridge since June of 1995, has joined the Susquehanna River Basin Commission as a consultant. Mr. Runkle was instrumental in the development of the Commission's drought operating plan and played key roles in the crafting of its ground water and water conservation programs.

Stephen P. Nieswand, Commission alternate to New Jersey Governors Jim Florio and Christine Todd Whitman since 1991, has left New Jersey's Department of Environmental Protection to accept a position with the U.S. Geological Survey. Mr. Nieswand chaired the Commission's Flow Management Technical Advisory Committee, displaying inspirational leadership qualities in guiding the basin through three drought periods in the 1990s. Under his leadership, the committee also developed a proposal for a major flow needs study for the Delaware River and two major tributaries.



Maj. Gen. Jerry L. Sinn



William A. Gast



Lt. Col. Debra Lewis

[Gerald Hansler's] watershed management policies ... have served as a model for watersheds across the country and around the world.

Name That Beast

The Loch Ness Monster is affectionately known as "Nessie." What name, pray tell, shall we bestow on this Delaware River creature?

The photograph was taken at 5 p.m. on October 24, 1998, by DRBC staffer Robert C. Kausch. It was shot with 35mm Kodak 100 Gold film from the New Jersey shore of the Delaware just downstream from the

Bulls Island Bridge. The photo has not been retouched.

The first reported sighting of "Nessie," the world's most famous monster, was by a holy saint, St. Columba, in the year 565 A.D. Later alleged sightings were numerous, including one in December of 1933 by big game hunter M.A. Wetherall, fellow of the London Zoological Society. He described the monster

this way: "It is a four-fingered beast and it has feet or pads of eight inches across. I judge it to be a powerful soft-footed animal about 20 feet in length. I am convinced that it can breathe like a hippopotamus or crocodile with just one nostril out of the water."

The sighting turned out to be a hoax: Wetherall helped his story by creating footprints on the shore with a stuffed and mounted foot of a hippopotamus he had borrowed from the Zoological Society.

Mr. Kausch, a biologist but no saint, swears he left no footprints. Nor, he says, did he shoot the photo through a lens sprinkled with pixie dust.

We believe him.

So Scotland's got "Nessie" and we now have _____. Fill in the blank with a name you feel is befitting the Delaware's "monster" and mail, fax, or e-mail it to Chris Roberts, *DRBCurrents* editor. Address: P.O. Box 7360, West Trenton, N.J. 08628; fax: 609-883-9522; e-mail: <croberts@drbc.state.nj.us>.

The winner, to receive a Delaware River Monster T-shirt, will be announced in the *DRBCurrents'* next edition.



P.O. Box 7360
25 State Police Dr.
West Trenton, NJ 08620

BULK RATE
POSTAGE & FEES PAID
DELAWARE RIVER
BASIN COMMISSION
PERMIT NO. 1522