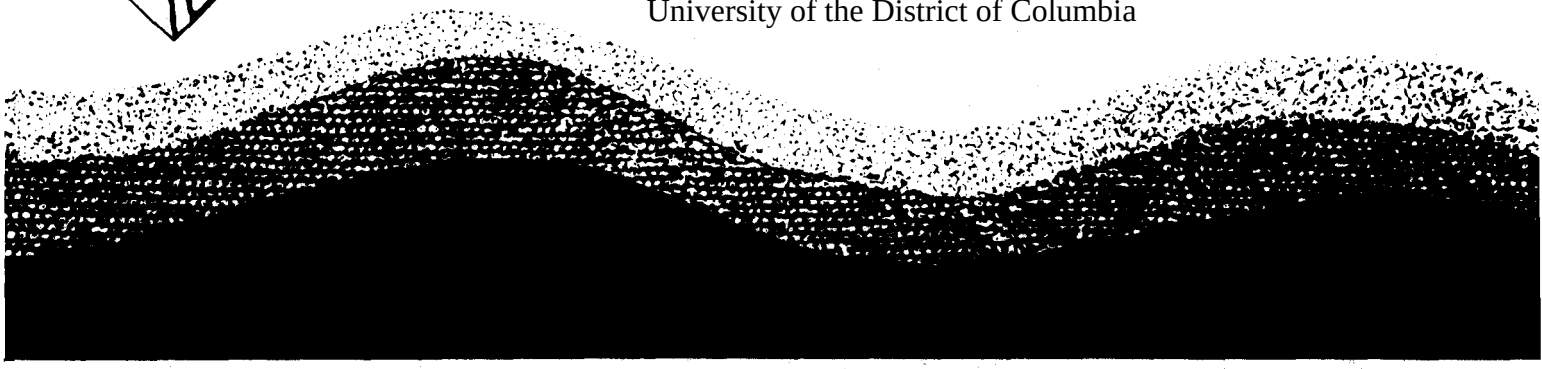
WATER HIGHLIGHTS

D.C. Water Resources Research Center, Washington, D.C.
College of Life Sciences
University of the District of Columbia



SEPTEMBER/OCTOBER 1989 VOLUME IX No. 3

GROUNDWATER GRANT AWARDED

Mr. Donald G. Murray, Director of the D.C. Department of Consumer Regulatory Affairs recently announced an award to the D.C. Water Resources Research Center of a grant for the assessment of the groundwater resources of the District.

The project entitled 'Groundwater Assessment Research Grant Agreement Between the District of Columbia and the D.C. Water Resources Research Center of the District of Columbia' is a phased three-year undertaking, which entails a jointly coordinated effort by a consortium of local universities.

The goal of the groundwater assessment is to collect enough data of sufficient quality that will enable the District to achieve its goal of better protecting and managing the groundwater resources of the District. The following objectives are to be met in order to achieve the District's goal of groundwater protection and management:

o Assess the current groundwater status of the District;
o Predict the Impact of the District's groundwater on the regional aquifer system, including groundwaters of the surrounding counties of Maryland and Virginia and vice versa, if any;
o Evaluate the hydrologic connection between groundwaters and surface waters in the District's;' o Identify sensitive areas within the District with respect to groundwater contamination; and when necessary, predict the environmental impact on groundwater from different sources of pollution, using calibrated and verified techniques.

D.C. WRRC Director, Dr. H.M. Watt, is the project Coordinator of the groundwater assessment and will be assisted by science and engineering faculty from The Catholic University of America, The George Washington University, Howard University and The University of the District of Columbia.

Water Highlights will report on the progress and developments relating to the groundwater assessment in future editions.

D.C. PROFESSOR OF THE YEAR NAMED

Dr. Benedict T. DeCicco, a Catholic University professor and a former D.C. WRRC principal investigator and a member of its Technical Committee, is this year's District of Columbia Pro

I N S I D E

fessor of the Year in the Council for the Advancement and Support of Education's annual competition and is also one of seven silver medalists chosen nationally.

Dr. DeCicco is a Catholic University biology professor and department chairman. He teaches both undergraduate and graduate courses in molecular biology and microbiology. He also directs Catholic University's Microbial Applications Laboratory, which studies the role of microorganisms in the contamination of health care and pharmaceutical products, including cosmetics, cold medicines and contact lens solutions. Dr. DeCicco' recent work under D.C. WRRC sponsorship was entitled 'Development of an Improved Test for the Determination of Biochemical Oxygen Demand'.

Editors note Water Highlights will feature contributions of other former DC WRRC professional Investigators in future editions.

ASPA MEETING HELD IN NEW JERSEY

Dr. H.M. Watt, D.C. WRRC Director, was the moderator of the Interstate Coastal Agreements session of the American Society of Public Administrators (ASPA) conference held on September 19, 1989, in Atlantic City, New Jersey. The panelists included Mr. L. Zeni, Executive Director of the Interstate Commission on the Potomac River Basin; Mr. D. Murray, Director of the D.C. Department of Consumer and Regulatory Affairs; Mr. W White, Executive Director a the Milwaukee Metropolitan Sewage District; Ms. S. Anderson, Assistant Administrator of the Chesapeake Bay and Coastal Programs of the Commonwealth of Virginia; and Mr. W. Nelson, Administrator of the Department of Consumer and Regulatory Affairs. Discussions focused on interjurisdictional approaches to water quality improvement with particular emphasis on the Chesapeake Bay Agreement, the Anacostia Watershed
Restoration Agreement, and the Great Lakes. A video cassette of the session was produced.

D.C. FISH CONTAMINATED*

A health advisory has been issued by the District of Columbia warning of elevated levels of toxic substances in certain fish species.

The D.C. Public Health Commission issued the advisory after a series of tests over three years revealed elevated levels of polychlorinated biphenyls (PCBs) and chlordane, a, pesticide, in channel catfish, in the District's waters. Although they were not part of the test samples, eels and carp were included in the advisory because they share the same bottom-type habitats and feeding habits. Tests in Maryland have shown a correlation between PCB levels in these species.

The advisory, issued by D.C. Commissioner of Public Health Dr. Reed V. Tuckson, stated that the commission 'Recommends that individuals consume not more than one meal (one-half pound) per week of channel catfish, carp, or eels captured in portions of the Potomac and Anacostia Rivers within the boundaries of the District of Columbia'.

'Since PCBs and pesticides tend to be stored in the fat of fish, it is further recommended that the fish be prepared as boneless, skinless fillets for cooking. This includes removing the fat layer along the belly flap and the midpoint of the back'.

"Women of childbearing age, nursing mothers, and pre-school age children should be discouraged from eating any of the above fish from these waters'.

The District portions of the Potomac and Anacostia Rivers, along with a stretch of the Shenandoah River In Virginia, are now suffering with restrictions from PCBs, although the levels recorded in the District are much lower. The advisory resulted from a regional study coordinated by the Interstate Commission on the Potomac River Basin at the request of the District of Columbia Department of Consumer and Regulatory Affairs. The study was undertaken after the substances were detected during routine sampling. The District of Columbia, Maryland, Virginia, and the Potomac River Fisheries Commission as cooperated in the survey.

Work toward finding a source or cause for the contaminated fish will be pursued by the District. Sediments of the Potomac and Anacostia Rivers will be analyzed for PCBs and chlordane, as well as other toxics. Additional fish will be collected as well, including carp and other species not previously examined. Researchers also will keep an eye on the toxics levels of the fish to find whether they are increasing, decreasing, or remaining the same. Dr. H. McDowell and Dr. C. Wade, ban UDC chemistry professors, have received a grant from the D.C. WRRC to undertake a project entitled: A Survey of Aqueous Sediments and Resident Fish of the Anacostia River for Polychlorinated Biphenyls (PCBs)'.

'Excerpted from the Potomac Basin Reporter, Vol.45 no. 7, August 1969

ICPRB OFFICERS ELECTED

Phyllis Cole of West Virginia and Donald Murray of the District of Columbia have been elected Chairperson and Vice Chairperson, respectively of the Interstate Commission on the Potomac River Basin QCPRB). Ms. Cole is a Petersburg, West Virginia, business person. Mr. Murray is the Director of the D.C. Department of Consumer and Regulatory Affairs.

WRRC congratulates Phyllis and Don on their election to the top ICPRB leadership positions and looks forward to working closely with them in addressing the many challenging

problems and issues in the Potomac River Basin.

BLACK CONTRIBUTORS TO ENVIRONMENTALSCIENCEAN DTECHNOLOGY*

Dr. James S. Burton

Dr. James S. Burton, a former D.C. Water Resources Research Center Director, holds now the position of Director, National Water Data Exchange (NAWDEX) in the U.S. Geological Survey of the Department of the Interior. NAWDEX is a national confederation of water-related organization is working together to improve access to data. Its primary objective is to assist users of water data in the identification, location, and acquisition of needed data. Prior to this position, Dr. Burton held the position of Water Research Program Manager in the Office of the Assistant Chief Hydrologist for Research and External Coordination at the Geological Survey.

Dr. Burton has served as a staff assistant for research in various offices and bureaus of the-Department of the interior from 1979to 1985, including the Office of Water Policy, the Bureau of Reclamation, and the Office of Assistant Secretary for Land and Water Resources.

From 1975to 1977, Dr. Burton served as the Assistant Director-Research, Office of Water Research and Technology (OWRT). OWRT was the managing unit of the Department of the Interior which coordinated the work of the state water institutes.

From 1969 to 1974, Dr. Burton held professional positions with the MITRE Corporation. He was a technical staff member in the Environmental Systems Department, where he dealt with a broad range of environmental programs. In 1974, Dr. Burton was Director of the MITRE Solar Energy Laboratory.

Dr. Burton served as Senior Chemist for Melpar Inc. from 1963 to 1966. During this period, Dr. Burton was responsible for work on the application of reverse osmosis to the conversion of wastewater to potable water.

Dr. Burton's academic background includes an A.B. degree in Chemistry from Berea College; an M.S. degree in Physical Chemistry and a Ph.D. in Physical Chemistry from Howard University.

Dr. Burton is the author and co-author of numerous technical papers and reports published in peer journals and presented at conferences and meetings of national environmental science organizations.

Dr. Burton and his wife, the former Ophelia Weaver, are the parents of one child, and the family resides in Reston, Virginia.

'Editor's note. Water Highlights will continue to feature briefs on Black professionals in the environmental science fields in coming editions.

D.C. WRRC NOTES

o The following papers were presented at a research seminar jointly sponsored by the Agricultural Experiment Station and the Environmental Science Department of the College of Life Sciences on June 23, 1989:

Trace Metal Content of Lettuce and Kale Grown in Soils Treated With Sludge Compost' by Dr. Freddie Dixon, Biology Department.

"Potential Agronomic Solutions for Municipal Wastes In The Northeast' by Dr. Ahmed N. Abdi, Environmental Science Department.

o A reprint of a WRRC sponsored research paper entitled ^{4}6 Nonionic Surfactants in Perspective' by Drs. M.M. Varlna, Howard University School of Engineering, and Dakshesh Patel of Roy F. Weston, Inc., West Chester, Pennsylvania, was reprinted in the Journal of Environmental Systems, Vol. 18 (1),1988-89.

o The Chesapeake Bay Research Planning Committee, formed late last year, is developing a Bay Research Directory that will index researchers throughout the region, cataloguing information on them and their work. For more information on the PRC directory project, contact Rids Reynolds at (804) 642-7147.

STATE OF THE ANACOSTIA REPORT*

Time Metropolitan Washington Council of Governments (COG) announced production for the Anacostia Watershed ~ Restoration Committee of The State of the Anacostia: 1988 Status Report' which provides information on the Anacostia River's current condition and tracks ongoing restoration efforts.

Water quality conditions within the Anacostia basin have changed little during the past few years. Examination of recently collected monitoring data indicates that the Anacostia system still suffers from a variety of serious water quality problems. Most of these problems can be attributed to uncontrolled stormwater runoff from older, urbanized areas, combined sever overflow (CSO) discharges into the tidal river, and

surface runoff from construction sites, new developments, active and abandoned surface mines, and industrial operations. The tributary portion of the Anacostia watershed suffers from elevated stream temperatures, high bacterial levels, heavy sedimentation, and elevated nitrate condition. The most significant water quality problems in the tidal river are low dissolved oxygen concentrations and poor water clarity. The degraded condition of the tidal river can be attributed, in large part, to the high sediment and organic loads from both the upstream tributaries and the CSO discharges.

Restoration efforts in the Anacostia basin have continued to gain momentum since the signing of the 1987 Anacostia Watershed Restoration Agreement by various state and local agencies. An expanded Anacostia fish survey `has been performed to determine the extent and health of living resources within the basin. A water quality model, the Tidal Anacostia Model (TAM), was developed to aid in future management efforts. Innovative stormwater management practices are currently being implemented in the basin. CSO discharges to the tidal Anacostia are being alleviated through the construction of the new swirl concentrator facility. Inventories of more than 200 potential water quality and aquatic habitat improvement projects have been conducted in booth Montgomery and Prince George's Counties. Two newsletters were distributed by the Interstate Commission on the Potomac River Basin (ICPRB) to more than 4,500 area residents in order to increase the public's participation, interest and awareness of the restoration efforts.

The State of the Anacostia: 1988 Status Report presents several recommendations for strengthening the restoration effort. These recommendations include:

o Participation in the restoration activities by federal agencies owning land in the basin;

o Implementation of storm monitoring to further examine non-point pollution in the basin;

o Development of a basin-wide urban retrofit strategy; and

o Implementation of a fisheries restoration plan.

• Excerpted from Waterline, Vol.1, Summer, 1969. COG.

WHAT HAPPENS to YOUR WATER MONEY

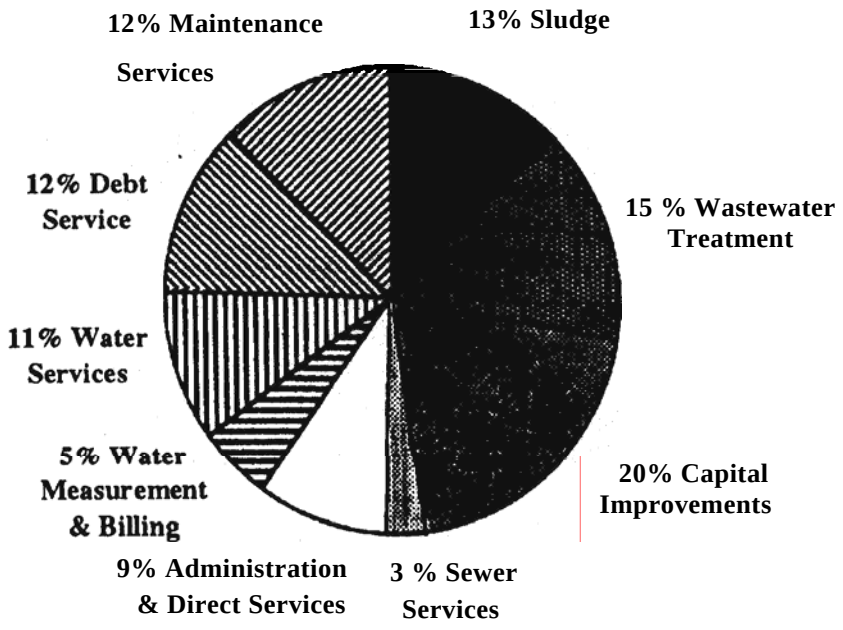
District of Columbia citizens received the following message along with their water and sewage bills recently: The bill total includes:

1. The amount of water that was delivered to your building; and

2. The cost of delivering the water, removing used water from your premises and of treating the wastewater before returning it to the Potomac River.

The water used by your building is delivered to the Blue Plains Wastewater Treatment Plant in southwest Washington. This plant is one of the most advanced in the country, and it meets the highest U.S. Environmental Protection Agency standards in the nation. We must continue to build and maintain our facilities. Our environment is an important resource that we cant afford to neglect. The chart below shows how your water and sewer payment is used.

How the Water $Dollar is Spent



- Government of the District of Columbia - Marion Barry Jr., Mayor

Department of Public Works John E. Touchstone, Director

MEETINGS

February 5-8, 1990. Fourth International Symposium on Biological and Environmental Reference Materials, Orlando, Florida Contact: Dr. Wayne R. Wolf, BERM-4, Office of Standard Reference Materials, B311 Chemistry Building, National Institute of Standards and Technology, Gaithersburg, MD 20899.

February 28-March 1, 1990. Groundwater Engineering and Management Conference, Denver, Colorado. For all general information, contact: Janet Lee Montera, Manager, Civil Engineering Conferences Section, Colorado State University, Fort Collins, CO 80523. Telephone (303) 491-7425.

May 14-17, 1990. Fourth National Outdoor Action Con4erence on Aquifer Restoration, Groundwater Monitoring and Geophysical Methods. The Association of Groundwater Scientists and Engineers, division of NWWA Las Vegas, Nevada. For information, contact: National Water Well Association, 6375 Riverside Dr., Dublin, Ohio 43017. Telephone (614) 7611711.

VACANCY ANNOUNCEMENTS

The DC Department of Consumer and Regulatory Affairs has announced vacancies for Fisheries Biologists as follows: One (1) Supervisory Fisheries Biologist, DS-*13*, Two (2) *Fisheries* Biologists (Research), DS-09; and, One (1) *Fisher*ies Biologists, *DS* 07. For information, contact: Jim Sweeney, (202) 783

3181.

PUBLICATIONS RECEIVED

Turco, R.F., and Konopka, A.E. Contributions of Subsoil and Aquifer Microorganisms to Groundwater Quality. Water Resources Research Center. Purdue University, West Lafayette, Indiana June 1989.

Shelton, M. L and Lacey, R.J. Evaluation of the Impact of Small Hydroelectric Facilities on the Visual Resources of Free-Flowing Streams in the Sierra Nevada. California Water Resources Center. University of California, Riverside, California 92521. Contribution No. 198. April 1989.

Mink, J.F., and Lau, L.S. Aquifer Identification and Classification for O'ahu: Groundwater Protection Strategy for Hawaii. Water Resources Research Center. University of Hawaii at Manoa Honolulu, Hawaii 96822 Technical Report No. 179.

Liu, C.C.K., and Feng, J.S. Chemical Residuals Transport in aggregated Soils: Mathematical Simulation by the Linear System Approach. Water Resources Research Center. University of Hawaii at Manoa, Honolulu, Hawaii 96822. Technical Report No. 176.

Daniels, D.P., Fritz, S.J., and Leap, D.I. Measurement of *Recharge* Rates Through an Unsaturated Glacial Till by Tritium Analyses. Water Resources Research Center. Purdue University, West Lafayette, Indiana. June 1989.

Murdock, P.A., and Daniels, R.E. Wyoming Water Research Center Publications Listing. Wyoming Water Research Center. University of Wyoming, Laramie, Wyoming 82071. July 1989.

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Dr. M. H. Watt, Director; J. Hannaham, A. Cisse' and M. Fronza contributing staff; T. Kelly, contributing editor.

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University of the District of Columbia
D.C. Water Resources Research Center, MB5004
4200 Connecticut Avenue, N.W.
Washington, D.C. 20008

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