PROGRAM

January 29-30, 2004 – Washington, DC
Ronald Reagan Building and International Trade Center

The Conference

The 4th National Conference on Science, Policy and the Environment will explore the role of science in achieving sustainable relationships among water, people, and the environment.

This unique event will bring together a diverse group of stakeholders—both specialists and non-specialists in water resources—united by their common concern over issues of water sustainability.

Highlights

Presentations by prominent scientists and policymakers

Symposia on critical water issues

Breakout Sessions to develop strategies for advancing water sustainability

Exhibition on innovative water resource programs, products and technologies

Posters on topics at the interface between water science and water policy

Participatory Sessions with opportunities for discussion and networking

Craig Schiffries, Conference Chair
National Council for Science and the Environment

4th National Conference on Science, Policy and the Environment

Water for a Sustainable and Secure Future

Agenda

Thursday, January 29, 2004
Ronald Reagan Building and International Trade Center
1300 Pennsylvania Avenue, NW

8:00 am–9:00 am **Registration and Continental Breakfast**
Amphitheater Foyer

9:00 am–9:15 am **Welcome**
Amphitheater
Amb. Richard Benedick, President, National Council for Science and the Environment

9:15 am–10:00 am **Keynote Address**
Amphitheater
William K. Reilly, President and CEO, Aqua International Partners; Chairman, World Wildlife Fund; Former Administrator, U.S. Environmental Protection Agency

10:00 am–10:45 am **Roundtable--Sustainable Water Use: Overcoming Barriers to Change**
Amphitheater
Moderator: ***Amb. Richard Benedick***, President, National Council for Science and the Environment
Speakers:
Bruce Babbitt, Former Secretary of the Interior; Former Governor of Arizona
Mohamed El-Ashry, CEO and Chairman Emeritus, Global Environment Facility
Barbara Sheen Todd, Commissioner, Board of Commissioners, Pinellas County, Florida; Past President, National Association of Counties

10:45 am–12:15 pm **Roundtable--Managing Water in the 21st Century: Towards a Comprehensive Water Vision**
Amphitheater
Moderator: ***Jerry Delli Priscoli***, Senior Policy Analyst, Army Corps of Engineers
Speakers and Respondents:
Gen. Gerald Galloway, Vice President, Titan Corp.; Chair, National Water Policy Dialogue
Peter Gleick, President, Pacific Institute for Studies in Development, Environment and Security
William Graf, University Professor, University of South Carolina; Past President, Association of American Geographers
Robert Hirsch, Associate Director for Water, U.S. Geological Survey; Co-Chair, National Science and Technology Council Subcommittee on Water Availability and Quality
Harry Ott, Director for Environment and Water, The Coca-Cola Company; Co-Chair, Water Sustainability Working Group, Global Environmental Management Initiative
Jane Valentine, President, American Water Resources Association; Associate Professor, UCLA

12:15 pm- **Lunch** (on your own)
1:30 pm

1:30 pm- **Breakout Sessions –** 17 Concurrent Sessions
5:00 pm

	Meeting Rooms
<u>Sessions on Sustainable Water Management & Institutions</u>	
1. Allocating water between people and ecosystems	*Hemisphere A*
2. Integrating surface and ground water management	*Meridian C*
3. Water sustainability indicators	*Hemisphere B*
4. Managing demand for water: improving efficiency & conservation	*Horizon B*
5. Economics of sustainable water use	*Meridian E*
<u>Sessions on Water Quality and Sanitation</u>	
6. Water, sanitation and human health	*Polaris A*
7. Water infrastructure needs for the 21st century	*Oceanic B*
8. Control of non-point source pollution	*Oceanic A*
9. Community-based watershed restoration	*Continental B*
10. Research and data needs for better decisionmaking	*Continental C*
<u>Sessions on Water Technologies</u>	
11. Technologies for water monitoring and homeland security	*Continental A*
12. Desalination and other water purification technologies	*Meridian D*
13. Sustainable irrigation and agriculture	*Polaris C*
14. Small scale, packaged water systems	*Meridian D*
<u>Sessions on Estuaries and Coastal Resources</u>	
15. Addressing coastal pollution at the watershed level	*Polaris B*
16. Protecting and restoring estuaries	*Horizon A*
17. Coastal ecosystems and fisheries	*Meridian B*

5:30 pm **Reception**
Atrium

7:00 pm **4th John H. Chafee Memorial Lecture on Science and the Environment**
Amphitheater

Introduction

Stephen P. Hubbell, Chairman, National Council for Science and the Environment; Professor, University of Georgia

Reflections

Hon. Lincoln D. Chafee, United States Senator

Lessons from Environmental Collapses of Past Societies

Jared Diamond, Professor, University of California at Los Angelis; Pulitzer Prize-winning author of the national bestseller *Guns, Germs and Steel: The Fates of Human Societies*; recipient of the National Medal of Science

Friday, January 30, 2004
Ronald Reagan Building and International Trade Center
1300 Pennsylvania Avenue, NW

8:00 am-
9:00 am **Continental Breakfast**
Amphitheater Foyer
Film Screening (Amphitheater, 8:15- 8:45), *Journey to Planet Earth: Hot Zones*, a documentary that explores links among environmental change, water and human health

9:00 am-
10:00 am **Plenary Address**
Amphitheater
Introduction
Amb. Richard Benedick, President, National Council for Science and the Environment
Plenary Lecture
Klaus Toepfer, Executive Director, United Nations Environment Program

10:00 am-
12:00 pm **Symposia-** 4 concurrent sessions
Ronald Reagan Building and International Trade Center Meeting Rooms

Sustainable Water Management and Institutions *(room: Amphitheater)*
How can we make watershed management work? How can we better align water policy with water science?
Peter Gleick, President, Pacific Institute for Studies in Development, Environment and Security, ***William Graf***, Professor, University of South Carolina; ***Brian Richter***, Director, Freshwater Initiative, The Nature Conservancy; ***Ethan T. Smith***, Coordinator, Sustainable Water Resources Roundtable

Water Quality and Sanitation *(room: Horizon)*
Have we turned the corner on water pollution? How safe is our water? How should priorities be set, and who should set them?
Marcia Brewster, Task Manager, United Nations Interagency Gender & Water Task Force; ***Tracy Mehan***, former EPA Assistant Administrator for Water; ***Eric Olson***, Senior Attorney, Natural Resources Defense Council; ***Harry Ott***, Director for Environment and Water, The Coca-Cola Company; ***Robbi Savage***, Executive Director, Association of State and Interstate Water Pollution Control Administrators

Water Technologies *(room: Hemisphere A)*
How can technology help meet U.S. and international water supply and sanitation needs? How can we bring new water technologies to the marketplace?
Shannon Cunniff, Director of Research and Development, U.S. Bureau of Reclamation; ***A. Judson Hill***, Aqua International Partners; ***Allan Hoffman***, Winrock International; ***Tom Spears***, President, Valmont Irrigation; ***David Zoldoske***, Director, CSU Fresno Center for Irrigation Technology

Estuaries and Coastal Resources *(room: Polaris)*
How can we manage estuaries and coastal resources more comprehensively?
Darrell Brown, Chief, U.S. EPA Coastal Management Branch; ***Mark Castro***, University of Maryland Center for Environmental Science; ***Barry Costa-Pierce***, University of Rhode Island; ***Chris Dionigi***, Assistant Director, Interagency Invasive Species Council; ***Mark Van Putten***, ConservationStrategies, Past President, National Wildlife Federation

12:00 pm- **Buffet Lunch**
1:30 pm Atrium and Exhibition Area

1:30 pm- **Awards Ceremony**
2:00 pm Amphitheater

Lifetime Achievement Award

Presented to ***M. Gordon "Reds" Wolman***, B. Howell Griswold Jr. Professor of Geography and International Affairs, The Johns Hopkins University

Lifetime Achievement Award

Presented to ***Ruth Patrick***, Francis Boyer Chair of Limnology, Academy of Natural Sciences

2:00 pm- **Roundtable—Learning from Experience: Designing Water Policy for the Future**
3:30 pm Amphitheater

Questions: Why have past water policies succeeded or failed? Is water policy too important to leave to the experts alone?

Moderator: ***Thomas E. Lovejoy***, President, The John H. Heinz III Center for Science, Economics and the Environment

Speakers:

Thomas F. Caver, Deputy Director of Civil Works, U.S. Army Corps of Engineers
Robert Glennon, Morris K. Udall Professor of Law and Public Policy, University of Arizona
Benjamin Grumbles, Acting Assistant Administrator for Water, U.S. EPA
Karin Krchnak, Senior Associate, World Resources Institute; Co-Chair, UN Commission on Sustainable Development Water Caucus
Jeremy Pelczer, President, American Water; Deputy CEO, RWE Thames Water

3:30 pm **Adjourn**

Breakout Sessions –Thursday, January 29, from 1:30 pm- 5:00 pm

Sessions on Sustainable Water Management and Institutions

1. **Allocating water between people and ecosystems**
   Room: Hemisphere A

   Session Co-Chair: ***Robert Hirsch***, U.S. Geological Survey
   Session Co-Chair: ***Brian Richter***, The Nature Conservancy

   This session will address conflicts between human and ecosystem water needs. How can we better balance human demands with the water needs of rivers? Discussion will include the importance of biodiversity, the economic value of ecosystem services, restoration of natural river flow patterns, and construction of dams and reservoirs. How can an ecosystem and watershed-based approach help resolve conflicts among water users? What can river managers and other local leaders do?

2. **Integrating surface and ground water management**
   Room: Meridian C

   Session Chair: ***Robert Glennon***, University of Arizona, James E. Rogers College of Law
   Panelist: ***Glen Patterson***, U.S. Geological Survey

   Though surface and ground water issues are interconnected in nature, these water resources are often managed separately. This session will explore ways of ensuring that water is managed holistically, as a finite resource. Sample questions may be: How can surface and underground water sources be developed in tandem? How can the institutions charged with managing our water resources facilitate an integrated approach to water management? Do these institutions need to be changed, and how? How can water management be integrated into the larger economic and social policy framework?

3. **Water sustainability indicators**
   Room: Hemisphere B

   Session Chair: ***Ethan Smith***, Sustainable Water Resources Roundtable
   Panelists: ***Karl Fennessey***, Dow Chemical Company; ***Ted Heintz***, White House Council on Environmental Quality; ***Robin O'Malley***, Heinz Center for Science, Economics and the Environment; ***Daniel Tunstall***, World Resources Institute

   This session will explore water sustainability indicators and how they might help us assess and improve our management of water resources. Participants will discuss questions such as: How would indicators be helpful? What indicators would be most useful to determine the degree to which we are on a sustainable course in our use and management of water resources? What information and statistics are needed to develop indicators, and what sources of data should be considered? What indicators do others use? What technical problems need to be addressed?

4. **Managing demand for water: improving efficiency and conservation**
Room: Horizon B

Session Chair: ***Bonnie Kranzer***, Consultant and former Executive Director of the Florida Governor's Commission for a Sustainable South Florida

This session will focus on managing the demand for water to bring water needs closer to the available water supply. A range of issues across business and municipal sectors will be covered, including efficiency of water use, water conservation, and water recycling. Questions may include: How do we implement policies and programs that promote conservation practices? Who should take responsibility for encouraging efficient water use? What institutional and cultural barriers stand in the way of specific conservation practices, such as water reuse/recycling? How can we eliminate these barriers? How can we encourage the development of new ideas for water conservation?

5. **Economics of sustainable water use**
Room: Meridian E

Session Chair: ***Eugene Z. Stakhiv***, U.S. Army Corps of Engineers
Panelists: ***Audrey Chapman***, Science and Human Rights Program, American Association for the Advancement of Science; ***Sylvia Tognetti***, Consultant; other panelists to be announced

Water has an ambiguous status—priced and traded as a commodity in some cases, considered a universal right in others. This session will explore how water fits into the economy, and how water can be managed as both a social and economic good. Potential questions include: Are market-based strategies a realistic route to sustainable water use? What role could exhaustive cost/benefit analyses and other quantitative tools play? What are the limitations of such tools? What institutions should be involved in managing water as a social and economic good?

<u>Sessions on Water Quality and Sanitation</u>

6. **Water, sanitation and human health: what are the priorities and who should set them?**
Room: Polaris A

Session Co-Chair: ***Eric Olson***, Natural Resources Defense Council
Panelists: ***Aiah Gbakima***, Morgan State; ***Victor Ibeanusi***, Spelman College

Most Americans have ready access to an adequate supply of water. But problems remain. Infrastructure for water delivery is aging, allowing toxins to leech into the water supply. Water purification systems do not remove all contaminants. Outbreaks of water-borne disease still occur. This session will examine how water quality affects human health in the United States, identify the health issues most in need of attention, and develop strategies for addressing these issues. Sample questions may include: How can we ensure that groundwater sources are treated systematically? How can we treat newly identified categories of contaminants? How should point-of-use treatments be used? How should we balance water source protection and water purification treatment?

7. **Water infrastructure needs for the 21st century**
Room: Oceanic B

Session Chair: ***Gen. Gerald Galloway*** (ret.), Titan Corporation
Panelists: ***Linda Eichmiller***, Association of State and Interstate Water Pollution Control Administrators; ***Stephen Gasteyer***, Rural Community Assistance Program; ***Brian Pallasch***, American Society of Civil Engineers

The water treatment systems, dams, and water transportation infrastructure of the United States are deteriorating. This session will discuss the most pressing water infrastructure needs for the 21st century. Question may include: How should rehabilitation and replacement needs be met? How should projects be prioritized? How could public-private partnerships and privatization contribute? What alternative technologies should be incorporated as our water infrastructure is updated?

8. **Control of non-point source pollution**
Room: Oceanic A

Session Chair: ***Dov Weitman***, U.S. EPA Non-point Source Control Branch
Panelists: ***Gary Margheim***, U.S. Department of Agriculture; ***Tamim Younos***, Virginia Tech

Non-point source (diffuse) water pollution comes from a variety of sources—particularly agricultural and urban runoff. This session will discuss the factors that contribute to non-point source pollution, and develop strategies for minimizing its harmful effects. Questions may include: Where should we direct efforts to treat non-source pollution? What legal and technological tools are available for preventing or cleaning up non-point source pollution? What can state and local leaders do?

9. **Community-based watershed restoration: the role of forests and wetlands**
Room: Continental B

Session Chair: ***Karen Prestegaard***, University of Maryland
Panelists: ***Robert Boon***, Anacostia Watershed Society; ***J. Charles Fox***, Chesapeake Bay Foundation

Community-based watershed restoration projects are important for improving water quality and maintaining ecological integrity. This session will examine how such efforts can be most effective, considering the roles forests, wetlands, and riparian areas specifically. Local watershed organizations and partnerships will also be discussed. Questions may include: Where have community-based watershed restorations been successful? What factors have contributed to their success? Are there institutional and technical barriers to protecting and restoring watersheds? How can these be overcome?

10. **Research and data needs for better decisionmaking on water quality**
Room: Continental C

Session Chair: ***Stephen Parker***, National Research Council
Panelists: ***Michael Haire***, U.S. EPA; ***Will Logan***, National Research Council; ***Timothy Miller***, U.S. Geological Survey; ***Leslie Shoemaker***, Tetratech

People who develop water policy must draw on research from a variety of disciplines, including environmental science, health science, behavioral science, and economics. This session will discuss the areas in which research and data are lacking, and develop strategies for filling these gaps. Possible questions include: How can we tailor research and data collection to state and local users' needs? How is existing information shared between scientists and decisionmakers, and between federal, state and local decisionmakers? How can we improve this process? Who should undertake the research and data collection efforts? Could institutions be modified to better facilitate this effort?

Sessions on Water Technology

11. **Technologies for water monitoring and homeland security**
Room: Continental A

Session Co-Chair: ***Janet Jensen***, U.S. Army Soldier and Biological Chemical Command
Session Co-Chair: ***Eugene Rice***, U.S. EPA
Panelist: ***Lisa Olsen***, U.S. Geological Survey

Secure water sources are critical components of a secure homeland. This session will discuss methods for protecting and monitoring our nation's water supply, from a homeland security perspective. Questions may include: Which parts of the water supply are most vulnerable to agents of bioterrorism? How can we address these vulnerabilities? Where should we implement strategies to enhance physical security of water supplies, and where should we use monitoring strategies to detect introduced substances? Can water testing for homeland security also serve the needs of science?

12. **Desalination and other water purification technologies** and
Small scale, packaged water systems (formerly session 14)
Room: Meridian D

Session Co-Chair: ***Shannon Cunniff***, Bureau of Reclamation
Session Co-Chair: ***A. Judson Hill***, Aqua International Partners, LP
Panelists: ***Debra Coy***, Charles Schwab; ***Chuck Martz***, Dow Chemical Company

Desalination allows communities to utilize sea and brackish water sources to supplement fresh water reserves. This session will review the state of desalination technology and explore the issues involved in putting it to use. Questions may include: Is desalination a solution to water scarcity? Where should we use desalination and where should we develop other methods for obtaining fresh water? What can we learn from desalination efforts already underway? How can we promote the development of new technologies? What institutions should support desalination?

13. **Irrigation and agriculture**
Room: Polaris C

Session Chair: ***David Zoldoske***, CSU Fresno Center for Irrigation Technology
Panelists: ***Adam Skolnik***, Senninger Irrigation; ***Tom Spears***, Valmont Irrigation

Irrigation accounts for 70 percent of water use in the United States. For this reason, irrigation must be a focus of any program for water sustainability. This session will discuss how agricultural practices and irrigation techniques affect water availability and water quality. Potential questions include: What technologies are available to improve irrigation efficiency? How can we disseminate these technologies more widely? How do we encourage innovation and introduce new technologies to the market?

Sessions on Estuaries and Coastal Resources

15. **Addressing coastal pollution at the watershed level**
Room: Polaris B

Session Chair: ***Mark Castro***, University of Maryland Center for Environmental Science
Panelists: ***Barry Burgan***, Office of Water, U.S. EPA; ***Dan Walker***, National Research Council

Coastal pollution problems such as nutrient over-enrichment, "dead zones," and toxic contamination are increasingly attributed to diffuse sources far inland from coastal environments. Therefore, effective solutions to these issues must be holistic, entering at the watershed level. This session will discuss particular strategies for addressing coastal pollution at the watershed level. Potential questions include: How can we connect coastal pollution with inland sources? What institutional partnerships are necessary for this to happen?

16. **Protecting and restoring estuaries**
Room: Horizon A

Session Chair: ***Chris Dionigi***, Interagency Invasive Species Council
Panelists: ***Gregory Colianni***, Office of Water, U.S. EPA; ***Barbara Sheen Todd***, Board of Commissioners, Pinellas County, Florida; ***James T. Willie***, Earth Conservation Corps

Estuaries, areas where fresh water mixes with salt water from the ocean, serve as important habitats for fish and provide unique ecosystem services. This session will discuss strategies for protecting and restoring estuaries that have been damaged by human activity. Questions may include: What particular issues require attention today? Which problems are being addressed? How can community efforts, as well as government-sponsored initiatives best contribute?

17. **Coastal ecosystems and fisheries**
Room: Meridian B

Session Chair: ***Barry Costa-Pierce***, Rhode Island Sea Grant, University of Rhode Island
Panelists: ***Ronald Baird***, Sea Grant College Program; ***Robert Brock***, National Oceanic and Atmospheric Administration; ***Dieter Busch***, National Oceanic and Atmospheric Administration; ***Kristen Fletcher***, Roger Williams University School of Law; ***Elaine Hoagland***, Council on Undergraduate Research; ***Alan Thornhill***, Society for Conservation Biology

Fisheries represent the largest extractive use of wildlife in the world. Worldwide, fish is the primary source of protein for some 950 million people worldwide, and the value of fishery production in 1999 was approximately US$ 125 billion. About 200 million people depend directly upon ocean fishing for their livelihoods. World production of fish, crustaceans, mollusks and plants reached 142 million tons in 2001. Marine and freshwater fish are also an increasingly important recreational resource for anglers, tourists, sports divers and nature-lovers. The session will explore the relationships between coastal ecosystems, fisheries and aquaculture, and will discuss the following questions: How do inland watershed decisions affect coastal fisheries and aquaculture? What types of pollutants pose the most serious threats to fisheries and aquaculture? How serious is habitat destruction and pollution by coastal fisheries and aquaculture? Can restored habitats replace native ones? Can aquaculture replace capture fisheries? How can new, innovative partnerships between the public sector, universities and industry address current trends and future challenges? How could these efforts be strengthened?

Biographies of Plenary Speakers

Bruce Babbitt

Bruce Babbitt is currently Of Counsel at the law firm of Latham & Watkins, where his practice focuses on environmental and natural resources matters. Mr. Babbitt was Secretary of the Interior during the Clinton Administration. During his tenure as Interior Secretary he drafted plans to restore the Florida Everglades, helped enact the massive California Desert Protection Act, and negotiated the largest land swap in the history of the lower 48 states in order to protect the new Grand-Staircase monument and other parks in Utah.

Mr. Babbitt was Governor of Arizona from 1978 to 1987 and Attorney General of Arizona from 1975 to 1978. He was appointed by President Carter to investigate the Three-Mile Island nuclear power plant accident and served as a consultant to President Carter on other national issues. Before that he practiced law in Arizona.

Mr. Babbitt earned a bachelors degree from Notre Dame University where he majored in geology and was elected student body president. Appointed a Marshall Scholar to the University of Newcastle, England, he earned a master's degree in geophysics. He earned his J.D. degree at Harvard University's Law School in 1965.

Richard E. Benedick

Ambassador Richard Benedick has played a major role in global environmental affairs as chief U.S. negotiator and a principal architect of the historic Montreal Protocol on protecting the ozone layer, and as Special Advisor to Secretaries-General of the 1992 UN Conference on Environment and Development (Rio de Janeiro) and the 1994 Conference on Population and Development (Cairo). He has been President of the National Council for Science and the Environment since 1994, while concurrently holding senior posts at the Joint Global Change Research Institute of Pacific Northwest National Laboratory and at Wissenschaftszentrum Berlin. His acclaimed book *Ozone Diplomacy* was selected by McGraw-Hill for an anthology of twentieth-century environmental classics.

A career diplomat, Dr. Benedick served at embassies abroad, was Deputy Assistant Secretary of State for Environment and Health, and headed divisions responsible for population affairs and for economic assistance and multilateral finance. He has led many international delegations, testified before Congress and foreign parliaments, and presided over international conferences and negotiations on environment, development, population, and science policy.

Dr. Benedick was elected in 1991 to the World Academy of Art and Science, and in 2002 to the American Academy of Diplomacy, an association of 100 former cabinet secretaries, ambassadors, and statesmen "who have made notable contributions to American foreign policy." Among other honors, he received the two highest Presidential career public service awards. Dr. Benedick graduated *summa cum laude* and Phi Beta Kappa from Columbia, holds advanced degrees from Yale and Harvard, and was Evans Fellow at Oxford University in metaphysical poetry. He is cited in *Who's Who in America* since 1980.

Thomas F. Caver, Jr.

Thomas F. Caver is Deputy Director of Civil Works of the U.S. Army Corps of Engineers. Mr. Caver assists the Director in managing and directing the programming, planning, design, construction, operations and maintenance, and dredging activities of the Army Civil Works $5 billion annual program. His responsibilities include directing the development and implementation of the Corps water resources and regulatory program, including policies and procedures to meet broad national objectives for providing the most beneficial use of water and related land resources.

Mr. Caver started his career in the Corps in 1969 as a civil engineer with the Vicksburg District, and advanced through a wide variety of design and project management assignments to become the Chief of Design for what was then the Corps largest Civil Works design program. He has been the recipient of numerous awards during his Federal career, including two Army Meritorious Civilian Service Awards, the Commander's Award for Civilian Service, and the Commander's Award for Outstanding Achievement in Equal Employment Opportunity.

Mr. Caver received a bachelor's degree in civil engineering from University of Texas at Arlington and completed additional graduate study in civil engineering at Mississippi State University.

Lincoln D. Chafee

Lincoln D. Chafee has represented Rhode Island as a United States Senator since 1999. Senator Chafee is a member of the Committee on Environment and Public Works and serves as Chairman of the Superfund Subcommittee. He is also a member of the Committee on Foreign Relations and serves as Chairman of the Subcommittee on Near Eastern and South Asian Affairs. In addition, he is a member of the Committee on Banking, Housing and Urban Affairs.

In November 1992, by a margin of 335 votes, Senator Chafee became the first Republican elected Mayor of the City of Warwick, Rhode Island in 32 years. He was reelected in 1994, 1996, and 1998, where he won with 58 percent of the vote and carried every ward in the city. As mayor, Senator Chafee had a strong record of fiscal management, environmental protection, open space acquisition, intergovernmental cooperation, economic development, labor relations, and significant increases in funding for schools. Senator Chafee began his political career in 1985, when he was elected a delegate to the Rhode Island Constitutional Convention. One year later, he was elected to the first of two successive terms on the Warwick City Council.

Senator Chafee earned a degree in Classics from Brown University. After Brown, Lincoln Chafee attended the Montana State University horseshoeing school in Bozeman. For the next seven years he worked as a blacksmith at harness racetracks in the United States and Canada. One of the horses he shod, Overburden, set the track record at Northlands Park in Edmonton, Alberta.

Jerome Delli Priscoli

Jerome Delli Priscoli is a senior advisor at the U.S. Army Corps of Engineers' Institute for Water Resources and is the Corps senior advisor on international water issues. Over the past 28 years, he has directed the Corps research, training and field assistance programs on social assessment techniques, public participation, and alternative dispute resolution. He is recognized as a world leader in conflict management, water resources and security. His lectures and training courses are highly acclaimed and are used in most US federal resource agencies and many international organizations.

Dr. Delli Priscoli recently facilitated the US National Water Policy dialog and has been a member of the US delegation to the CSD negotiations at the UN. He has worked with a variety of international organizations and has been involved in multilateral negotiations concerning water resources on every continent.

He is Editor in Chief of *Water Policy*, the official peer reviewed journal of the World Water Council published by Elsevier in Oxford, UK. He is the author of over 60 articles, books and training manuals. He has been a visiting Professor at Universities throughout the World and is currently adjunct Professor in the School of International water resources management at Colorado State.

Dr. Delli Priscoli holds bachelors degrees from Tufts University in Economics and Political Science, a Ph.D. from Georgetown University in Political Science, and has completed postgraduate work in theology and philosophy.

Jared M. Diamond

Jared M. Diamond is Professor of Geography, Environmental Health Sciences, and Physiology at the University of California, Los Angeles. An accomplished scientist, he devotes much of his time to popular science writing in order to help the general public understand important scientific issues. He has published 8 books, 2 monographs, and nearly 600 articles. He was awarded the Pulitzer Prize in 1998 for his book *Guns, Germs, and Steel: The Fates of Human Societies*, which was a national best seller.

Dr. Diamond has contributed to fundamental ecological research as well as public understanding of biodiversity and conservation practice. He is widely recognized for his pioneering work in the field of conservation biology, where his research has led to the recognition of a sub-field of community ecology based on assembly rules, competition and community dynamics. His novel theories relating species extinction rates to habitat size helped give birth to the discipline of conservation biology and have served as justification for large nature reserves. Dr. Diamond has led 19 expeditions to New Guinea and nearby islands, where he designed comprehensive national park plans.

He has received numerous awards for his research and writing, including the National Medal of Science and the Tyler Prize for Environmental Achievement. He is an elected member of the National Academy of Sciences, the American Philosophical Society, and the American Academy of Arts and Sciences. His book on human evolution, *The Third Chimpanzee*, won Britain's Science Book Prize and the Los Angeles Times Science Book Prize. Dr. Diamond serves on the Board of Directors of the World Wildlife Fund and is a contributing editor to *Discover Magazine*.

He earned his bachelor's degree at Harvard College, and his Ph.D. in physiology and membrane biophysics from the University of Cambridge, England. He was a Junior Fellow of the Society of Fellows at Harvard University from 1962-1966 and then joined the faculty of the UCLA Medical School, where he remains today.

Mohamed El-Ashry

Mohamed El-Ashry is the former Chairman and CEO of the Global Environmental Facility, which he led from 1991 to 2002. Under his leadership, GEF grew from a pilot program with less than 30 members to the largest single source of funding for the global environment with 173 member countries. During his tenure, the Global Environmental Facility allocated $4 billion in grants and leveraged $12 billion in additional financing for the environment, growing to include more than 1,000 projects in over 140 countries.

In October 2002, James D. Wolfensohn, President of the World Bank, said: "The GEF, as we know it today, is the product of Mohamed El-Ashry's vision, leadership, dedication, and hard work. He has made a significant contribution to the global environment and sustainable development."

Mr. El-Ashry came to the GEF from the World Bank, where he was the Chief Environmental Advisor to the President and Director of the Environment Department. Prior to joining the World Bank, he served as Senior Vice President of the World Resources Institute (WRI) and as Director of Environmental Quality with the Tennessee Valley Authority.

Mr. El-Ashry received his B.S. degree with honors in 1959 from Cairo University and Ph.D. degree in geology in 1966 from the University of Illinois. He has received numerous international awards and honors and is the author of three books and more than 200 papers.

Gerald Galloway

Gerald Galloway is currently Vice President of Titan Corp. Previously, he served as Secretary of the United States Section of the International Joint Commission in Washington, D.C, which prevents and resolves disputes between the United States and Canada under the 1909 Boundary Waters Treaty. A civil engineer, public administrator and geographer, Dr. Galloway has served as a consultant to the Executive Office of the President, and has assisted the U.S. Water Resources Council, World Bank, Organization of American States, Tennessee Valley Authority, U.S. Army Corps of Engineers and various other organizations in water resources related activities. From 1989-1990 Galloway was president of the Universities Council on Water Resources.

Dr. Galloway graduated from the U.S. Military Academy with a Bachelor of Science degree and was commissioned into the Army as a Second Lieutenant in the U.S. Army Corps of Engineers. During his 38-year career in the military, he served in various command and staff assignments in Germany, Southeast Asia and the United States. In 1979, he joined the faculty of the U.S. Military Academy at West Point, serving successively as Professor of Geography and Computer Science, and Professor and founding Head of the Department of Geography and Environmental Engineering. In 1990 he was promoted to Brigadier General and appointed the ninth Dean of the Academic Board (Chief Academic Officer) of the Military Academy. He retired from active duty in 1995.

Dr. Galloway holds master's degrees from Princeton, Penn State, and the U.S. Army Command and General Staff College. Dr. Galloway received his Ph.D. degree in geography from the University of North Carolina.

Peter H. Gleick

Peter H. Gleick is co-founder and President of the Pacific Institute for Studies in Development, Environment, and Security. Dr. Gleick is an internationally recognized expert on global freshwater resources, including the hydrologic impacts of climate change, sustainable water use, privatization and globalization, and international conflicts over water resources.

He serves on the boards of numerous journals and organizations and was elected an Academician of the International Water Academy, in Oslo, Norway, in 1999. In 2001 he was appointed to the Water Science and Technology Board of the National Academy of Sciences, Washington, DC. Dr. Gleick is the author of many scientific papers and four books, including the biennial water report The World's Water published by Island Press.

In 2003 Dr. Gleick was awarded a MacArthur Fellowship for his leadership and vision on global freshwater issues today. He received a B.S. from Yale University and an M.S. and Ph.D. in Energy and Resources from the University of California, Berkeley.

Robert Glennon

Robert Glennon is the Morris K. Udall Professor of Law and Public Policy at the James E. Rogers College of Law, The University of Arizona. He has taught law at the University of Arizona since 1985. In 1997, he was named the Morris K. Udall Professor of Law and Public Policy. He specializes in constitutional law, American legal history, and water law. In October 2002 his new book, *Water Follies: Groundwater Pumping and the Fate of America's Fresh Waters*, was published by Island Press.

Before joining the faculty at Arizona, Dr. Glennon taught law at the University of Minnesota, the University of Illinois, and Wayne State University. He received his J.D. from Boston College and an M.A. and Ph.D. in American History at Brandeis University. Dr. Glennon is a member of the bars of Arizona, Massachusetts, and Michigan.

William Graf

William L. Graf is Education Foundation University Professor and Professor of Geography at the University of South Carolina. His research interests focus on the physical forms and processes associated with rivers, and on policy for public land and water. He is best known for his field research in remote areas of the desert Southwestern United States. His present research emphasizes the physical environmental effects of large dams throughout the country. Dr. Graf is currently chairing the National Academy of Science study, "Endangered and Threatened Species in the Platte River Basin." In the area of public policy Graf has emphasized the interaction of science and decision-making, and resolution of the conflict between economic development and environmental preservation.

He is a past president of the Association of American Geographers, and has received numerous awards (including one in 2001 from Queen Elizabeth of Great Britain and the Royal Geographical Society) recognizing his research into river processes and ecosystems. Other awards have included a Guggenheim Foundation fellowship, the Honors Award from the Association of American Geographers, the Cole Award from the Geological Society of America, the ASU Graduate School Distinguished Research Award, and the 1994 Thomas B. Nolan Distinguished Lectureship of the U.S. Geological Survey.

He has received more than 50 grants and contracts, and has authored or edited 7 books and more than 100 papers and book chapters in the fields of geography, geology, hydrology, public policy, and environmental history.

Benjamin H. Grumbles

Benjamin Grumbles is currently the Acting Assistant Administrator Office of Water at the U.S. Environmental Protection Agency (EPA). Mr. Grumbles was appointed Deputy Assistant Administrator for the Office of Water at the EPA in February of 2002. Before arriving at EPA, Mr. Grumbles was Deputy Chief of Staff and Environmental Counsel for the House Science Committee. Prior to that, he was Senior Counsel for the Water Resources and Environment Subcommittee of the Transportation and Infrastructure Committee.

During his 15 years of service on the Transportation and Infrastructure Committee staff, Mr. Grumbles focused on programs and activities of the Environmental Protection Agency, the Army Corps of Engineers, the National Oceanic and Atmospheric Administration, the U.S. Department of Transportation, the Federal Emergency Management Agency and the Tennessee Valley Authority.

He is an adjunct professor of law at the George Washington University Law School, as well as a member of the faculty advisory board of the Environmental Law and Policy Program at the USDA/Graduate School. Mr. Grumbles has written numerous articles on water quality, wetlands, water resources management, oil spills, hazardous waste, and environmental policy. His degrees include a B.A., Wake Forest University; J.D., Emory University; and LL.M. in Environmental Law, the George Washington University Law School.

Robert Hirsch

Robert Hirsch serves as Associate Director for Water at the U.S. Geological Survey, a position he has held since 1999. In this capacity, Dr. Hirsch is responsible for all U.S. Geological Survey (USGS) water science programs. He represents the interests of the USGS in scientific, technical, and leadership aspects of hydrology and serves as the Director's principal advisor on water-related issues. In his capacity as spokesperson for the USGS and its water resources mission, he holds the title of Chief Hydrologist.

Dr. Hirsch began his USGS career in 1976 as a hydrologist and has conducted research on water supply, water quality, pollutant transport, and flood frequency analysis. His scientific leadership has contributed to the development of several USGS national water programs. Dr. Hirsch has held a number of leadership positions, including Acting Director during an interim period between Directors, Chief Hydrologist and head of the USGS Water Resources Division, Assistant Chief Hydrologist for Research and External Coordination, and Staff Assistant to the Assistant Secretary for Water and Science of the U.S. Department of the Interior.

Dr. Hirsch is co-author of the textbook *Statistical Methods in Water Resources*, is a Fellow of the American Association for the Advancement of Science, and is an active member of the American Geophysical Union and the American Water Resources Association.

He received his B.A. from Earlham College, M.S. in geology from the University of Washington, and Ph.D. in geography from The Johns Hopkins University.

Stephen P. Hubbell

Stephen P. Hubbell is a professor of Botany at the University of Georgia. Before joining the University of Georgia, Dr. Hubbell was a Butler Fellow and professor of ecology and evolutionary biology at Princeton University. Prior to joining the Princeton faculty in 1988, he was a faculty member at the University of Michigan and University of Iowa, and a staff scientist at the Smithsonian Tropical Research Institute. In 1992 he was on leave from Princeton as a senior research fellow of the Smithsonian Institution.

Dr. Hubbell was awarded a Guggenheim Fellowship in 1984 and was a Pew Scholar in Conservation and the Environment from 1990-1992. In 1992 he received the Distinguished National Service Award from the Society for Conservation Biology. He is a member of Phi Beta Kappa, Sigma Xi, and is a Fellow of the American Association for the Advancement of Science.

Dr. Hubbell's principal research concerns the ecology and management of tropical rain forests. His work focuses on long-term dynamics of tropical rain forests in the new and old world tropics, as well as the

implications of global change for the conservation and management of forests.

He received a Ph.D. in Zoology from the University of California at Berkeley in 1969, and a B.A. magna cum laude in Biology from Carleton College in 1963.

Karin Krchnak

Karin Krchnak is a Senior Associate in the Institutions and Governance Program at the World Resources Institute (WRI), where she is Director of The Access Initiative and the Partnership for Principle 10. Prior to joining WRI, Karin M. Krchnak worked at National Wildlife Federation. There, in addition to serving as Program Manager for the Population and Environment Program, Ms. Krchnak negotiated and lobbied for international environmental policies at international summits, including the International Conference on Freshwater, the World Summit on Sustainable Development, and the Third World Water Forum.

Previously, she was Country Director, Western Newly Independent States and Director of the Environmental Law Program for the American Bar Association Central and Eastern European Law Initiative. In addition, she has worked as an environmental attorney for Science Applications International Corporation and the Environmental Law Institute, and as an editor for the East Asian Legal Studies Program at the University of Maryland School of Law.

Ms. Krchnak received her bachelor's degree in Political Science from Duke University and her J.D. from the University of Maryland School of Law. She serves as Adjunct Faculty at the University of Maryland School of Law and has taught at universities overseas. She is Co-Chair of the UN CSD Freshwater Caucus.

Thomas E. Lovejoy

Thomas E. Lovejoy is President of the Heinz Center for Science, Economics and the Environment. Before assuming this role, Dr. Lovejoy was the World Bank's Chief Biodiversity Advisor, Lead Specialist for Environment for Latin America and the Caribbean, and Senior Advisor to the President of the United Nations Foundation. He has held science advisory positions at the Smithsonian Institution, the Department of the Interior, and the UN Environment Program, and was Executive Vice President of the World Wildlife Fund-US.

Dr. Lovejoy originated the concept of debt-for-nature swaps. Over one billion dollars in conservation funds has already been made available with this mechanism. He also founded the public television series *Nature*, and served as principal advisor to the series for many years. This program is the most popular long-term series on public television. He served on science and environmental councils and committees under the Reagan, Bush and Clinton Administrations.

In 2001 Dr. Lovejoy received the Tyler Prize for Environmental Achievement. He received his bachelor's degree and a Ph.D. in biology from Yale University.

Harry Ott

Harry Ott is Director of Global Environmental Assurance at The Coca-Cola Company and has over 30 years of experience in the environmental field. He is responsible for ensuring the development and implementation of effective environmental management systems worldwide for the company and directs

a group of professionals who have responsibility for environmental auditing, water and wastewater projects, due diligence assessments, training programs, communication materials, and new technology research.

He has served on several governmental and industrial environmental task forces in the past and recently served as chairman for the Global Environmental Management Initiative (GEMI) project *Environment: Value to Business and Creative Water Strategies; a Water Sustainability Tool*. For several years Mr. Ott has been a member of the Metro Atlanta Chamber of Commerce Environmental Policy Committee and Water Resources subcommittee. He also serves on the Environmental Science Technology advisory committee. Recently, at the request of the Administrator of the EPA he served on a National Water Infrastructure panel in Washington, D.C.

Mr. Ott received a Bachelor of Technical Science degree in Environmental Engineering from Texas State Technical College. He also completed policy development and environmental law courses toward a Masters Degree at the University of Denver. He currently holds a Grade A level certification in the state of Texas for operation of wastewater treatment facilities and has held certifications in the past for operation of water/wastewater treatment facilities in California, Colorado and Texas.

Ruth Patrick

Ruth Patrick is currently the Francis Boyer Chair of Limnology at the Academy of Natural Sciences in Philadelphia, and Adjunct Professor at the University of Pennsylvania. Dr. Patrick's illustrious career spans over seven decades, during which she has been a pioneer in the field of interdisciplinary environmental study.

While her early research focused specifically on enhancing our understanding of aquatic ecosystems, Dr. Patrick's work has profoundly influenced the entire field of ecology. She was the first person to use biodiversity as a measure of ecosystem health—a method that is now used to assess a wide variety of ecosystems. Dr. Patrick has written a number of books, including, most recently, a five volume series called *Rivers of the United States*. She is author of over 200 scientific papers. In 1970 Dr. Patrick became the 12th woman elected to the National Academy of Sciences, and has served on the Board of Directors for the Dupont and Pennsylvania Power and Light companies. She received the John and Alice Tyler Prize for Environmental Achievement in 1975 was awarded the National Medal of Science by President Bill Clinton in 1996. Dr. Patrick earned her bachelor's degree from Coker College in South Caroline and her Ph.D. from the University of Virginia. She has received 25 honorary degrees.

Jeremy Pelczer

Jeremy Pelczer is President of the American Water company and Deputy CEO of RWE Thames Water. Pelczer has 20 years of extensive experience in strategic acquisitions, operations management, finance, and accounting with a variety of defense and utility companies headquartered in the United Kingdom. In January 2003 American Water joined RWE Thames Water, which is the water division of international multi-utility RWE. RWE Thames Water is the third largest water and wastewater services company in the world.

Pelczer was appointed President of American Water and its Board, and Deputy CEO of RWE Thames Water in September 2003. As President, Pelczer is responsible for further developing the company's team-based, high performance culture that delivers results for customers, employees, and stakeholders. In the role of Deputy CEO of RWE Thames Water, he supports the drive of the water

business to higher standards of customer service and operational performance. Pelczer also directs the divisional Corporate Social Responsibility program, which further strengthens the company's ties and commitment to each community served.

Pelczer is a Member of the Institute of Chartered Accountants in England and Wales. Pelczer graduated in 1979 from the University of Kent in Canterbury, England where he studied Economics. He began his professional career as an accountant with a private firm and qualified as a Chartered Accountant in 1983. In 2002 Pelczer attended the Advance Management Program at Harvard Business School.

William K. Reilly

William Kane Reilly is President and Chief Executive Officer of Aqua International Partners, an investment group that finances the purification of water and wastewater in developing countries, and invests in projects and companies that serve the water sector. From 1989 to 1993, he served as the seventh Administrator of the U.S. Environmental Protection Agency.

Prior to becoming EPA Administrator, Mr. Reilly held a number of environment-related leadership positions over two decades. He was President of World Wildlife Fund and President of The Conservation Foundation, until those two organizations joined in 1985 at which time Mr. Reilly became President of both. He was Executive Director of the Rockefeller Task Force on Land Use and Urban Growth, a senior staff member of the President's Council on Environmental Quality, and Associate Director of the Urban Policy Center and the National Urban Coalition.

Mr. Reilly currently serves on the boards of Dupont, Eden Springs, Ltd., ConocoPhillips, Ionics, and Royal Caribbean International, and is a member of the Advisory Board of ERM CVS. His is Chairmanship of the Board of World Wildlife Fund and Chairman of the Board of Advisors of the Goldman School of Public Policy at the University of California, Berkeley.

An alumnus of Yale University, Reilly holds a law degree from Harvard University and a master's degree in urban planning from Columbia University. He served in the U.S. Army to the rank of Captain in 1966 and 1967.

Craig M. Schiffries

Craig M. Schiffries is Chairman of the 4th National Conference on Science, Policy and the Environment and Director of Science Policy at the National Council for Science and the Environment. He previously served as a Congressional Science Fellow on the staff of the United States Senate Judiciary Committee; Director of Government Affairs at the American Geological Institute; Director of the Board on Earth Sciences and Resources of the National Academy of Sciences / National Research Council; a visiting faculty member at Yale University; and a consultant with Monitor Company.

Dr. Schiffries is Co-Chairman of the USGS Coalition, an alliance of 55 organizations united by a commitment to the continued vitality of the unique combination of biological, geological, hydrological and mapping programs of the U.S. Geological Survey. He serves on the British Ambassador's Advisory Council for Marshall Scholarships and is Chairman of the Selection Committee in Washington, DC.

Dr. Schiffries simultaneously earned his B.S. and M.S. degrees from Yale University, where was he was elected to *Phi Beta Kappa*, graduated *summa cum laude,* and double-majored in Geology and Geophysics and in Economics and Political Science. He was a Marshall Scholar at Oxford University, where he earned an

honors B.A. in Philosophy, Politics, and Economics. He received a Ph.D. in Geology from Harvard University, where he held a fellowship from the Hertz Foundation.

Barbara Sheen Todd

Barbara Sheen Todd has served Pinellas County, FL for more than 20 years and has contributed to local as well as national politics in many issue areas. Ms. Todd was elected to the Pinellas County Commission in 1980 and has held leadership roles in many other organizations. She has worked with the Florida Association of Counties, and was president of both the National Association of Counties (NACo) and the state Board of Directors of the Florida League of Cities. She is currently the president of American International Consulting Services.

Three governors of Florida appointed Ms. Todd to represent county interests on more than a dozen state and national commissions and boards, including the Florida Growth Management Conflict Resolution Consortium and the Florida Advisory Council on Environmental Education. She has a long history of service with all types of civic and council activities with groups such as the Pinellas County Tourist Development Council, the Work and Gain Economic Self-Sufficiency Board, the Friends of Weedon Island and the Governor's Council for Sustainable Florida.

President George Bush appointed Ms. Todd to represent America's Counties on the U.S. Advisory Council on Intergovernmental Relations. She also served as a member of the Management Advisory Group which advised the Environmental Protection Agency on water policy issues. She is a member of the board of the National Council for Science and the Environment.

Ms. Todd has degrees in Spanish, Sociology and Psychology and earned both her bachelor's and master's degrees at Florida State University. She also studied foreign language education at the Instituo Technologico, in Monterrey Mexico.

Klaus Toepfer

Klaus Toepfer became Executive Director of the United Nations Environment Program (UNEP) and Director-General of the United Nations Office at Nairobi (UNON) in February 1998. He was Acting Executive Director of the United Nations Centre for Human Settlements (formerly UNCHS/Habitat, now UNHabitat) from July 1998 to August 2000.

Before joining the United Nations, Klaus Toepfer held several posts in the Federal Government of Germany. He was Federal Minister of Regional Planning, Building and Urban Development as well as Coordinator of the Transfer of Parliament and Federal Government to Berlin from 1994 to 1998. He held office as Federal Minister of the Environment, Nature Conservation and Nuclear Safety from 1987-1994. Prior to that, he was State Minister of Environment and Health of the Federal State of Rhineland-Palatinate and State Secretary at the Ministry of Social Affairs, Health and Environment for the same state.

Dr. Toepfer is the recipient of many honors including the Order of Merit of the Federal Republic of Germany, the Commander's Cross of the Order of Merit of the Federal Republic of Germany, the Grand Cross of the Order of Merit of the Federal Republic of Germany, and the Order of the Southern Cross from the Republic of Brazil (2003). In 1997 and 1998 he was bestowed Honorary Professor of Tongji University, Shanghai, People's Republic of China and Honorary Doctor of the Technical University of Brandenburg, Cottbus, Germany. In 2002 he became Honorary Doctor of the Free University of Berlin, the University of Essen and in 2003 of the University of Hannover. He is the winner of several awards,

among which are the TÜV Rheinland Pfalz Environment Award 2000, the Bruno H. Schubert Environment Prize 2002 and the German Environment Prize 2002 which is held to be the most prestigious such prize in Europe. He holds a doctorate in Philosophy and a degree in Economics.

Jane Valentine

Jane Valentine is President of the American Water Resources Association and Associate Professor of Water Quality at the University of California, Los Angeles. Dr. Valentine joined the Public Health faculty in Environmental Health Sciences in 1974.

Dr. Valentine currently serves as consultant to NIH and to the EPA Science Advisory Boards. In addition, she serves as a consultant to the Agency for Toxic Substances and Disease Registry (ATSDR). She is a member of the Editorial Board and Board of Directors of the International Society for Trace Element Research in Humans (ISTERH). Dr. Valentine's current research involves the association of arsenic exposure to reproductive effects in populations exposed to the element via drinking water, the study of drinking water intake estimates, and studies of excess selenium exposures in human populations. Included in these efforts are biological monitoring, environmental epidemiological surveys, and environmental and clinical laboratory determination of chemicals in such media as air, water, soil and biological tissues.

Dr. Valentine received a B.S. in Chemistry from Tennessee State University in 1967, an M.S. in Water Chemistry from the University of Wisconsin at Madison in 1970, and a Ph.D. in Environmental Health from the University of Texas at Houston in 1973.

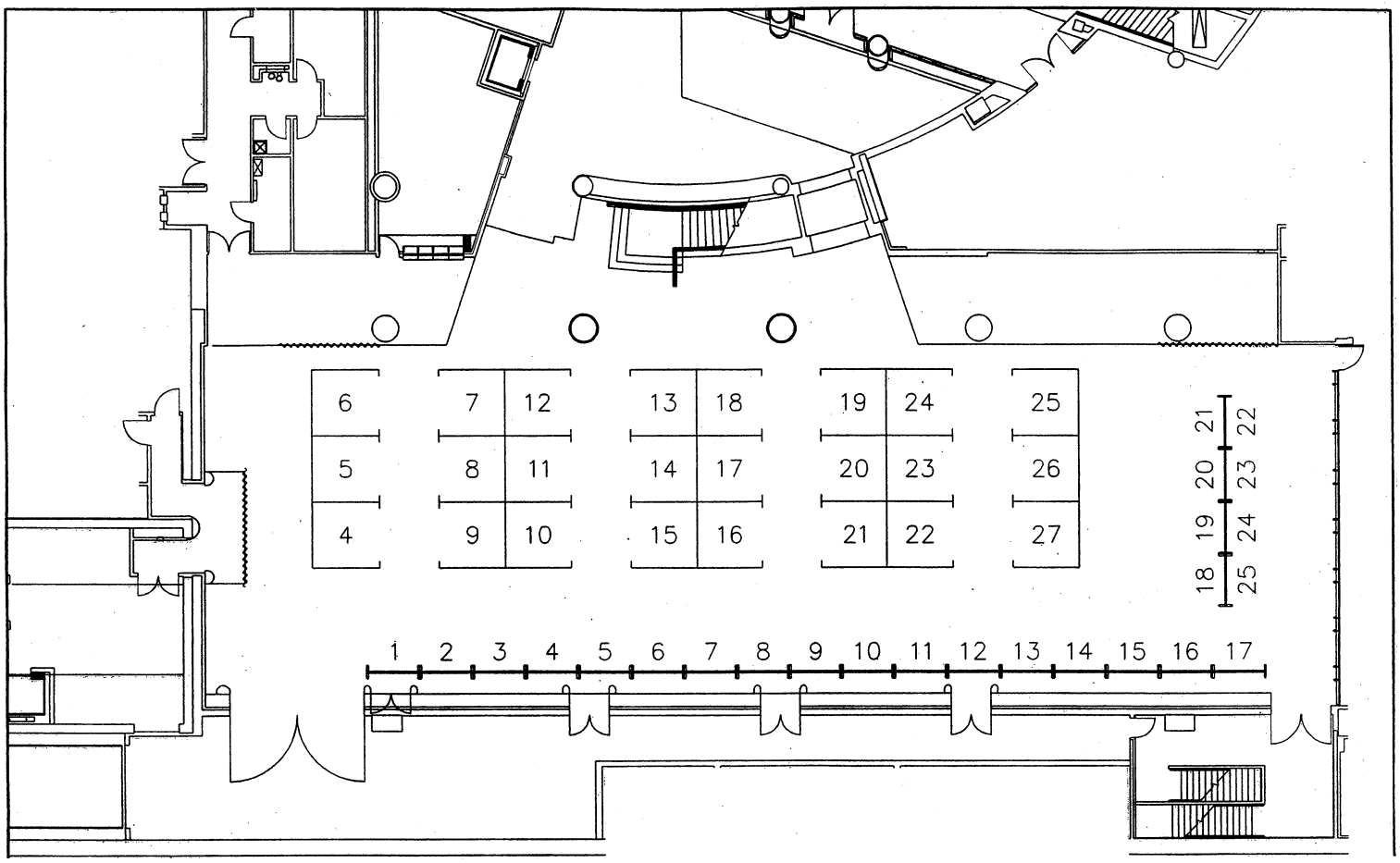
M. Gordon Wolman

M. Gordon "Reds" Wolman is B. Howell Griswold Jr. Professor of Geography and International Affairs at The Johns Hopkins University. Dr. Wolman's groundbreaking contributions to the study of watershed and river processes have helped structure international discussions on landscape evolution and sustainable development. He was among the first scientists to seriously consider how human activity combines with natural processes to affect the environment, and his work has been extremely valuable for informing policymakers. Dr. Wolman has also advanced water science through his remarkable teaching, which has inspired generations of students who have become leaders in the field.

Dr. Wolman was inducted into the National Academy of Sciences in 1988 and the National Academy of Engineering in 2002. He is Past President of the Geological Society of America, and Past President of the Hydrology Section of the American Geophysical Union. He has been recognized with numerous awards, including the 1989 John Wesley Powell Award from the U.S. Geological Survey, the 1993 Distinguished Career Award from the Association of American Geographers, the1997 Ian Campbell Medal from the American Geological Institute, and the 2000 Robert E. Horton Medal from the American Geophysical Union. Dr. Wolman has chaired many committees on water, geosciences, and public policy. His book *Fluvial Processes in Geomorphology*, which he co-authored with Luna Leopold and John P. Miller, remains a classic text in the field. Originally released in 1965, it was republished in 1995 and is required reading for a new generation of scientists.

Dr. Wolman received his bachelor's degree from The Johns Hopkins University and his Ph.D. in geology from Harvard University.

Map and List of Exhibitors



Booth	Exhibitor Name
4	USDA Forest Service
5	U.S. Geological Survey
6	Society for Conservation Biology
7	Consortium of Universities for the Advancement of Hydrologic Science, Inc.
8	National Oceanic and Atmospheric Administration
9	Environmental Literacy Council
10	U.S. EPA Office of Water
11	U.S. EPA Office of Research and Development
12	National Academies Press
13	Island Press
14	Ecological Society of America-*Frontiers in Ecology and the Environment*
15	USDA Cooperative State Research, Education, and Extension Service
16	Unilever

Booth	Exhibitor Name
17	Aldo Leopold Leadership Program
18	ESRI
19	UC-Santa Barbara-Donald Bren School of Environmental Science and Management
20	U. S. Agency for International Development
21	Yale School of Forestry and Environmental Studies
22	National Council for Science and the Environment
23	National Council for Science and the Environment
24	The Morris K. Udall Foundation
25	U.S. Department of the Interior/Bureau of Reclamation
26	2005 Solar World Congress – Bringing Water to the World
27	RFF Press/Resources for the Future

POSTER SESSION ABSTRACT TITLES & AUTHORS

1. ALBIETZ, JESSICA, T.M. CRONIN, G.L. WINGARD and D.A. WILLARD. U.S. Geological Survey. **Salinity Changes in Biscayne Bay, Florida: Human and Natural Influences.**

2. ALLENDER-HAGEDORN, SUSAN and CHARLES HAGEDORN. Virginia Polytechnic Institute and State University. **Bridging the Gap Between Water Quality Science and Policy: Environmental Detection News.**

3. BRIGGS, CHAD. California State University. **Science and Administrative Capacity in Water Regulation: a Case Study of Hungary.**

4. BROWN, LESLEY and LIZA AGUDELO. University of Maryland. **Reducing Nutrient Pollution at the Watershed-level: Decentralized Wastewater Treatment and Composition of Detergents.**

5. CZARNECKI, JOHN B., BRIAN R. CLARK, GREGORY P. STANTON and THOMAS B. REED. U.S. Geological Survey. **Optimization Modeling of the Mississippi River Valley Alluvial Aquifer in Arkansas.**

6. DENNISON, BILL, ADRIAN JONES, FRANCIS PANTUS and JANE THOMAS. University of Maryland. **Developing a Chesapeake Bay Report Card.**

7. DESLAURIERS, SARAH, MASAYUKI KANZAKI, AKSHAY KUMAR, GREGORY KEOLEIAN and JONATHAN BULKLEY. Center for Sustainable Systems, University of Michigan. **Life Cycle Assessment as a Decision Support Tool in the Water Industry.**

8. GBAKIMA, AIAH, MITCHEL GRAHAM and AISHA TURNBULL. Morgan State University. **Detection of Excherichia coli and E. coli 0157:H7 in Water Sources in Baltimore and Ghana.**

9. GRUDEN, CYNDEE,[1] P. ADRIAENS,[2] S.C. CHANG[2] and A. KHIJNIAK.[2] [1]University of Toledo; [2]University of Michigan. **Mico-Flow Cytometry Application for Microbial Assessment in Complex Matrices.**

10. HAGEDORN, CHARLES,[1] ANNIE CHAPMAN,[1] SUE HERBEIN[1] and PHILIP McCLELLAN.[2] [1]Virginia Polytechnic Institute and State University; [2]MapTech, Inc. **Microbial Source Tracking as a Technology for Identifying Sources of Fecal Pollution in Water.**

11. HEANEY, CHRISTOPHER D. Department of Environmental Sciences and Engineering. **Survey of Microbial Contamination in Ground and Surface Water Supplies in an Underserved African-American Community in Alamance and Orange Counties, North Carolina.**

12. HOWARI, FARES M. Southwest Earth and Environmental Services. **Hydrochemical Analyses and Management Options to Route Water from Elephant Butte Dam to El Paso del Norte region, U.S.-Mexico Border.**

13. LANG, MICAH. Thomas J. Watson Foundation. **World Water Scarcity: The Feedback Among Water, Culture, and the Environment.**

14. KESHAWARZ, M. SALEH[1]and SAYED SHARIF.[2] [1]University of Hartford; [2]FAO Afghanistan. **Water Security and Sustainability in Afghanistan.**

15. KING, STANLEY, XINGLONG XU and ISABEL ESCOBAR. University of Toledo. **Improving Desalination Through Membrane Modifications.**

16. KLAINE, STEPHEN J.,[1] M. SCHLAUTMAN,[1] R. ENGLISH,[2] J. HAYES,[3] T. KARANFIL,[4] S. TEMPLETON,[5] J. SMINK,[1] C. POST.[2] [1]Environmental Toxicology Program, Clemson University; [2]Department of Forestry and Natural Resources, Clemson University; [3]Public Service and Administration, Clemson University; [4]Department of Environmental Engineering and Science, Clemson University; [5]Department of Agricultural Economics, Clemson University. **A Watershed Approach to Characterize the Influence of Land Use Change on Aquatic Resources.**

17. KNOWLES, GRAHAM. National Environmental Services Center, West Virginia University. **Ensuring Sustainable Water Resources and Managing Growth: Putting Onsite Wastewater Management in the Mix.**

18. McPHERSON, WENDY. U.S. Geological Survey. **Monitoring Water Levels from Drought to Recovery in Maryland and Delaware.**

19. PIDLISNYUK, VALENTYNA[1] and Iryna Pidlisnyuk.[2] [1]University of Georgia; [2]Academy of Foreign Trade, Sustainable Development and Ecological Education Center. **Sustainable Use of Water Resources: Challenges for the Future.**

20. SEMPIER, STEPHEN H., KATY R. LLOYD, ROGER J. HARRIS and HILLARY S. EGNA. Aquaculture Collaborative Research Support Program, Oregon State University. **Sustainable International Aquaculture Research: A Focus on Low Food Chain Species.**

21. SUGIURA, SHOZO H. and RONALDO P. FERRARIS. New Jersey Medical School. **Aquaculture, Water Pollution, and Policy-Making: Better Technology or More Regulation?**

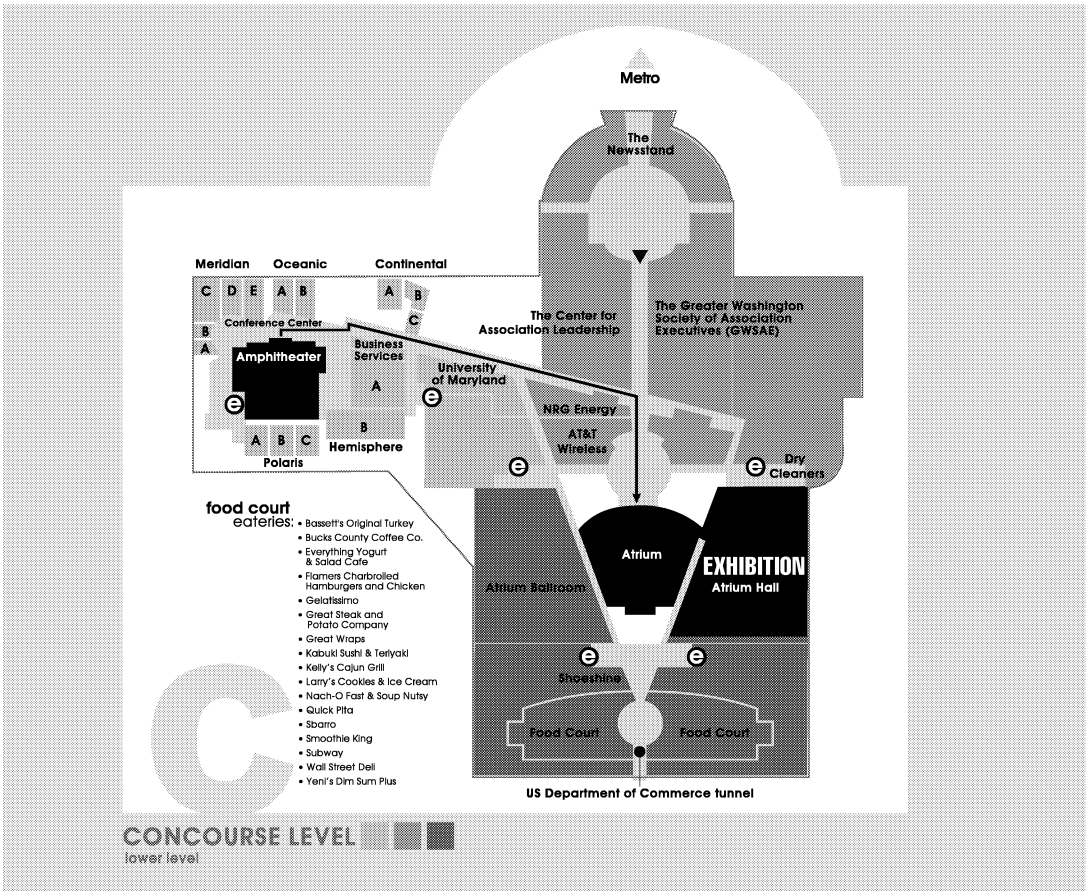
22. SUGIURA, SHOZO H. and RONALDO P. FERRARIS. New Jersey Medical School. **Effluent Profile of Rainbow Trout Aquaculture Fed Commercial Low-Phosphorus Feeds.**

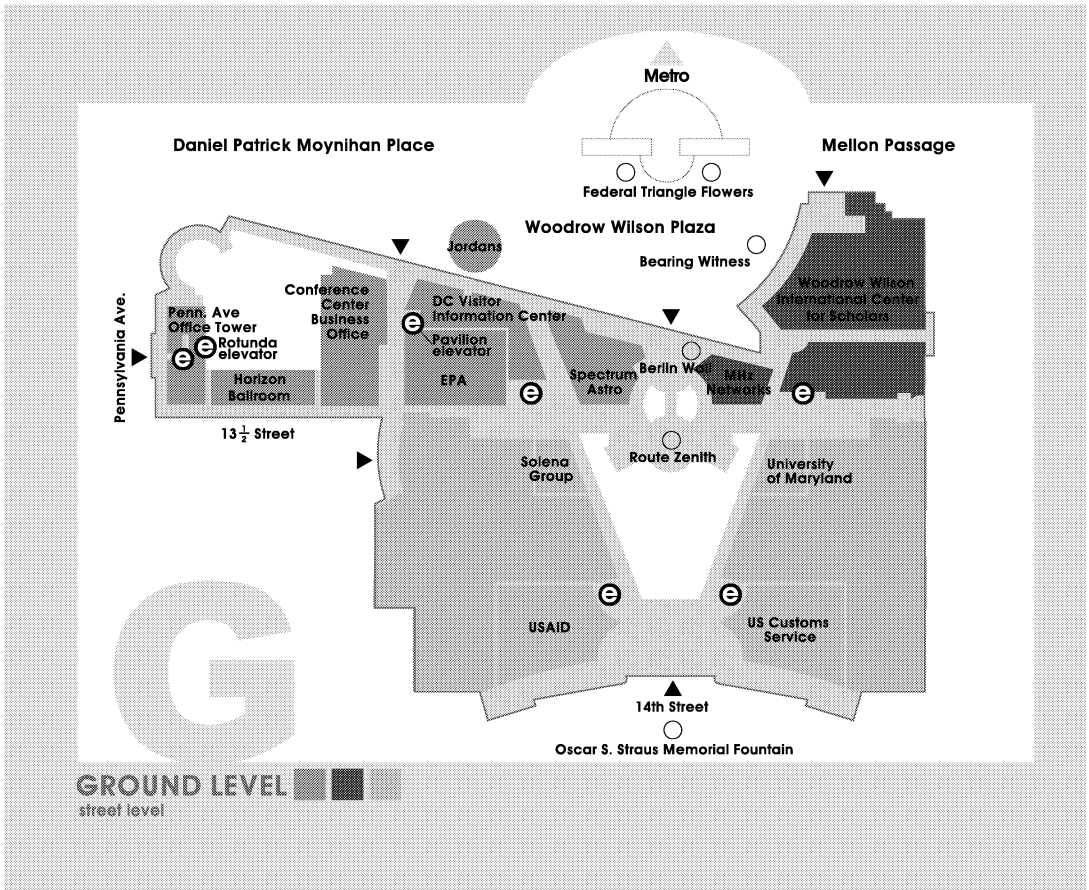
23. VAN WALSUM, PETER and ERIN DOYLE. Balor University. **Improving the Economic Incentive for Effective Manure Treatment: Removal of Phosphate Through MixAlco Conversion of Dairy Cattle Manure to Value-Added Fuels and Chemicals.**

24. WILDERMAN, CANDIE. Dickinson College. **The realization of a Pipe Dream: Effective Partnerships in Community-Based Urban Stream Restoration.**

25. WILDERMAN, CANDIE. Dickinson College. **Top Down or Bottom Up? Models for Community-Based Participatory Watershed Research, With a Discussion of Their Impacts on the Development of Sustainable Water Policy**

Ronald Reagan Building and International Trade Center





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