

# **Independent Scientific Review of Everglades Restoration Progress VI & VII**

## **Committee**

### **William G. Boggess**

#### **Chair**

William G. Boggess is professor and Executive Associate Dean of the College of Agricultural Sciences at Oregon State University (OSU). He previously served as the president of the OSU Faculty Senate. Prior to joining OSU, Dr. Boggess spent 16 years on the faculty at the University of Florida in the Food and Resource Economics Department where he was involved with Everglades work. His research interests include interactions between agriculture and the environment (e.g., water allocation, groundwater contamination, surface-water pollution, sustainable systems, water and environmental policy); economic dimensions and indicators of ecosystem health; and applications of real options to environmental and natural resources. Dr. Boggess previously served on the Oregon Governor's Council of Economic Advisors, the Board of Directors of the American Agricultural Economics Association, the Food Alliance, and currently serves on the Board of the Oregon Environmental Council. He served on the State of Oregon Environment Report Science Panel and has been active in the design and assessment of the Oregon Conservation Reserve Enhancement Program. Dr. Boggess served as a member of the NRC Committee on the Use of Treated Municipal Wastewater Effluents and Sludge in the Production of Crops for Human Consumption, and on the second and third Committees on Independent Scientific Review of Everglades Restoration Progress. He received his Ph.D. from Iowa State University in 1979.

### **Mary Jane Angelo**

#### **Member**

Mary Jane Angelo is professor of law at the University of Florida's Levin College of Law. Her research areas focus on environmental law; water law; administrative law; biotechnology law; dispute resolution; pesticides law; law and science; and legal ethics. Prior to joining the faculty, Ms. Angelo served as an attorney in the U.S. Environmental Protection Agency's Office of General Counsel, and as senior assistant general counsel for the St. Johns River Water Management District. She received her B.S. degree in biological sciences from Rutgers University and her M.S. and J.D. degrees from the University of Florida.

## **Charles T. Driscoll, Jr.**

### **Member**

Charles T. Driscoll (NAE) is university professor in the Department of Civil and Environmental Engineering at Syracuse University where he also serves as the director of the Center for Environmental Systems Engineering. His teaching and research interests are in the area of environmental chemistry, biogeochemistry, and environmental quality modeling. A principal research focus has been the response of forest, aquatic, and coastal ecosystems to disturbance, including air pollution, land use change, and elevated inputs of nutrients and mercury. Dr. Driscoll is currently a principal investigator of the National Science Foundation's Long Term Ecological Research Network's project at the Hubbard Brook Experimental Forest in New Hampshire. He is a member of the National Academy of Engineering and was a member of the NRC's Panel on Process of Lake Acidification, the Committees on Air Quality Management in the U.S. and the Collaborative Large-scale Engineering Analysis Network for Environmental Research (CLEANER), and the second and third Committees on Independent Scientific Review of Everglades Restoration Progress. Dr. Driscoll received his B.S. in civil engineering from the University of Maine and his M.S. and Ph.D. in environmental engineering from Cornell University.

## **M. S. Fennessy**

### **Member**

M. Siobhan Fennessy is an associate professor of biology, and the director of the Environmental Studies Program at Kenyon College. Her areas of expertise are in the fields of aquatic ecology, wetland plant community dynamics, and landscape ecology. Dr. Fennessy's primary areas of research are freshwater ecosystems, their plant communities and restoration, how ecosystems respond to human impacts, and the role of temperate wetlands in the global carbon cycle. She previously served on the faculty of the Geography Department of University College London and held a joint appointment at the Station Biologique du la Tour du Valat (located in southern France) where she conducted research on human impacts to Mediterranean wetlands. She recently co-authored book on the ecology of wetland plants. Dr. Fennessy is a 2001 recipient of the Robert J. Tomsich Science Award for excellence in scientific research. She is a member of the NRC's Water Science and Technology Board. She received her B.S. degree in botany and Ph.D. degree in environmental science from the Ohio State University.

## **Wendy D. Graham**

### **Member**

Wendy D. Graham is the Carl S. Swisher Eminent Scholar in Water Resources in the Department of Agricultural and Biological Engineering and Director of the Water Institute at the University of Florida, Gainesville. Her research focuses on integrated hydrologic modeling; groundwater resources evaluation and remediation; evaluation of impacts of agricultural production on surface and groundwater quality; evaluation of impacts of climate variability and climate change on hydrologic systems; and stochastic modeling and data assimilation. In her role as Director of the UF Water Institute she coordinates campus-wide interdisciplinary research, education and outreach programs designed to develop and share new knowledge, and to develop and encourage the implementation of new technology and policy solutions needed to ensure a sustainable water future. She has a B.S. in environmental engineering from the University of Florida, and a Ph.D. from the Massachusetts Institute of Technology.

## **Karl E. Havens**

### **Member**

Karl E. Havens is professor and director of Florida Sea Grant at the University of Florida. He has worked with Florida aquatic ecosystems and the use of objective science in their management for the past 23 years. His areas of expertise are in the fields of the response of aquatic ecosystems to natural and human-caused stressors, including hurricanes, drought, climate change, eutrophication, invasive species and toxic materials, with particular attention to Florida's lakes and estuaries. Before coming to the University of Florida, Havens was the chief environmental scientist at the South Florida Water Management District. He received his B.A. degree from SUNY Buffalo, and his M.S. degree and Ph.D. degree from West Virginia University.

## **Fernando R. Miralles-Wilhelm**

### **Member**

Fernando R. Miralles-Wilhelm is the executive director of the Cooperative Institute for Climate and Satellites, a cooperative institute between the University of Maryland and the National Oceanic and Atmospheric Administration, and a professor in the Department of Atmospheric and Oceanic Science at the University of Maryland. Dr. Miralles-Wilhelm specializes in hydrology and water resources engineering, with a particular focus on hydrology and climate interactions in the Everglades' vegetative ecosystems, which he has been studying for the past decade. Previously, he served on the faculty of Florida International University and the University of Miami. He received a mechanical engineering diploma from Universidad Simón Bolívar in Venezuela, an M.S. degree in engineering from the University of California-Irvine, and a Ph.D. degree in civil and environmental engineering from the Massachusetts Institute of Technology.

## **David H. Moreau**

### **Member**

David H. Moreau is chair of the curriculum and research professor in the Curriculum for the Environment and Ecology at the University of North Carolina at Chapel Hill. His research interests include analysis, planning, financing, and evaluation of water resource and related environmental programs. Dr. Moreau is engaged in water resources planning at the local, state, and national levels. He has served on several NRC committees, including the Committee on New Orleans Regional Hurricane Protection Projects, the Committee to Review the Lake Ontario-St. Lawrence River Studies, and the second and third Committees on Independent Scientific Review of Everglades Restoration Progress, and he is a current member of the Water Science and Technology Board. Dr. Moreau serves as a member of the North Carolina Environmental Management Commission, the state's regulatory commission for water quality, air quality, and water allocation. He received his B.S. and M.S. from Mississippi State University and North Carolina State University, respectively, and his Ph.D. degree from Harvard University.

## **Gordon H. Orians**

### **Member**

Gordon H. Orians (NAS) is professor emeritus of biology at the University of Washington. Most of Dr. Orians's research has focused on behavioral ecology of birds and has dealt primarily with problems of habitat selection, mate selection and mating systems, selection of prey and foraging patches, and the relationship between ecology and social organization. Recently, his research has focused on environmental aesthetics and the evolutionary roots of strong emotional responses to components of the environment, such as landscapes, flowers, sunsets, and sounds. Dr. Orians has served on the Science Advisory Board of the U.S. Environmental Protection Agency and on boards of such environmental organizations as the World Wildlife Fund and the Nature Conservancy. He has also served on many National Academies committees, including the first Committee on Independent Scientific Review of Everglades Restoration Progress, the Committee on Cumulative Environmental Effects of Alaskan North Slope Oil and Gas Activities, and the Board on Environmental Studies and Toxicology. He is a member of the National Academy of Sciences and the American Academy of Arts and Sciences. Dr. Orians earned his B.S. degree in zoology from the University of Wisconsin and his PhD in zoology from the University of California, Berkeley.

## **Denise J. Reed**

### **Member**

Denise J. Reed is chief scientist at the Water Institute of the Gulf. She is a nationally and internationally recognized expert in coastal marsh sustainability and the role of human activities in modifying coastal systems with over 30 years of experience studying coastal issues in the United States and abroad. Prior to joining the Water Institute, Dr. Reed served as Interim Director of the Pontchartrain Institute for Environmental Sciences and as a professor in the University of New Orleans' Department of Earth and Environmental Sciences. She has served on numerous boards and panels addressing the effects of human alterations on coastal environments and the role of science in guiding restoration, including the NRC Committee on Sustainable Water and Environmental Management in the California Bay-Delta, and has been a member of the USACE Environmental Advisory Board and the Ecosystems Sciences and Management Working Group of the NOAA Science Advisory Board. Dr. Reed received her B.S. degree in Geography from Sidney Sussex College, and her M.S. and Ph.D. degrees from University of Cambridge.

## **James Saiers**

### **Member**

James E. Saiers is professor of hydrology, Associate Dean of Academic Affairs, and professor of chemical engineering at the Yale School of Forestry and Environmental Studies. Dr. Saiers studies the circulation of water and the movement of waterborne chemicals in surface and subsurface environments. One element of his research centers on quantifying the effects that interactions between hydrological and geochemical processes have on the migration of contaminants in groundwater. Another focus is on the dynamics of surface water and groundwater flow in wetlands and the response of fluid flow characteristics to changes in climate and water management practices. His work couples field observations and laboratory-scale experimentation with mathematical modeling. He earned his B.S. in geology from the Indiana University of Pennsylvania and his M.S. and Ph.D. degrees in environmental sciences from the University of Virginia.

## **Eric P. Smith**

### **Member**

Eric P. Smith is a professor in the Department of Statistics at the Virginia Polytechnic Institute and State University. Dr. Smith research focuses on multivariate analysis, multivariate graphics, biological sampling and modeling, ecotoxicology, data analytics, and visualization. He teaches courses in Biological Statistics, Biometry, Consulting, Data Mining, and Multivariate Methods. His courses focus on extracting information from large data sets, and on analyzing and solving problems through fast algorithms, accurate models, evolving statistical methodology, and quantification of uncertainty. He is the former Director of the Computational Modeling and Data Analytics Program, a He is a He earned his B.S. degree from the University of Georgia, and his M.S. and Ph.D. degrees from the University of Washington.

## **Denice H. Wardrop**

### **Member**

Denice H. Wardrop is a Senior Scientist at The Pennsylvania State University. She also serves as the Director of its Sustainability Institute and as Assistant Director of Penn State Institutes of Energy and the Environment. Her research focuses on theoretical ecology, anthropogenic disturbance and impacts on aquatic ecosystem function, ecological indicators, and ecosystem condition monitoring and assessment. Dr. Wardrop is the Pennsylvania Governor's Appointee to the Chesapeake Bay Program's Science and Technical Advisory Committee and previously served as its chair. She also directs the Mid-Atlantic Wetlands Workgroup. She has a B.S. degree in systems engineering from the University of Virginia, a M.S. degree in environmental sciences from the University of Virginia, and a Ph.D. degree in ecology from the Pennsylvania State University.

## **Greg D. Woodside**

### **Member**

Greg D. Woodside is the Executive Director of Planning and Natural Resources at Orange County Water District. Mr. Woodside has 25 years of experience in water resources management and hydrogeology. He is a registered geologist and certified hydrogeologist in California, and oversees the Planning and Watershed Management Department and the Natural Resources Department at the Orange County Water District. Staff in these departments prepare the District's environmental documents, permit applications, groundwater management plan, and long-term facilities plan, and conduct the District's natural resource management, watershed planning, and recharge planning. In particular, he has evaluated conjunctive use and aquifer storage and recovery projects in the Orange County Groundwater Basin, Central Basin and San Gabriel Basins, including projects that would recharge up to 50,000 acre-feet per year of recycled and imported water. Mr. Woodside previously served on the National Academies' Committee to Review the Edwards Aquifer Habitat Conservation Plan. He holds a B.S. in geological sciences from California State University, Fullerton, and an M.S. in hydrology from the New Mexico Institute of Mining and Technology.