



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

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SFWMD Computer Modeling Presented on an International Stage
Students from around the world participated in a workshop highlighting the District's cutting-edge work



Students enrolled at the UNESCO-IHE Institute for Water Education in the Netherlands visited SFWMD headquarters in West Palm Beach for a workshop on computer modeling.

West Palm Beach, FL — Improving water quality in the Everglades is calculated to the parts per billion.

Water flowing up to 2,000 cubic feet per second is directed after considering environmental needs such as the location of low-lying bird nests.

This is work done at the South Florida Water Management District (SFWMD) through the agency's extensive computer modeling efforts. Modeling capabilities at the District are considered cutting-edge, and they were on display last month for a workshop provided for students and faculty in a master's degree program with UNESCO's Institute for Infrastructural, Hydraulic and Environmental Engineering (UNESCO-IHE). The prestigious UNESCO-IHE Institute for Water Education is organized through the United Nations and based in Delft, the Netherlands.

Students from around the world, who aim to become leaders in their respective countries in water resource planning, spent four days with District staff learning about the application of computer models for integrated water management. Modeling staff

from several different bureaus provided lectures and hands-on computer modeling sessions to teach international students how modeling can help to address complex water resource issues.

“In South Florida, water is managed through a system of flood control canals, pumps, structures and natural ecosystems. Modeling is a tool that provides information to help the District make management decisions in balancing flood protection, water supply and environmental protection,” said Terrie Bates, SFWMD Director of Water Resources. “The many applications of modeling here at the District can benefit water managers around the world as they address similar challenges.”

The 32 students represented 23 countries including Ireland, Afghanistan, Egypt, China, Rwanda, Albania and Ethiopia.

Among the modeling accomplishments highlighted at the four-day seminar:

- SFWMD recently started using the Natural System Regional System Model (NSRSM) to simulate water levels and flows in a natural system. This system incorporates long-term climatic data, landcover, topography, pre-channelized rivers and other refined data sources to provide simulations of pre-drainage hydrology in South Florida.
- SFWMD Principal Engineer Dr. Alaa Ali developed the “iModel,” which is an innovative tool that allows water managers to analyze water movement through the system in near real-time. The iModel is also being taught as part of the engineering curriculum at Columbia University, and it is being used to support hydrology education for a National Science Foundation initiative.
- SFWMD Principal Hydrologic Modeler Dr. Naiming Wang developed modeling protocols for reservoir operations and water releases for flow equalization basins. This work provided fundamental information to develop the Restoration Strategies projects to improve Everglades water quality.

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About the South Florida Water Management District

The South Florida Water Management District is a regional, governmental agency that oversees the water resources in the southern half of the state – 16 counties from Orlando to the Keys. It is the oldest and largest of the state’s five water management districts. The agency mission is to manage and protect water resources of the region by balancing and improving water quality, flood control, natural systems and water supply. A key initiative is cleanup and restoration of the Everglades.