New water-depth evaluation system will aid Everglades research, study shows

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In this photo released by the University of Florida's Institute of Food and Agricultural Sciences, spatial ecologist Ikuko Fujisaki visits one of the more than 200 monitoring stations used in the Everglades Depth Information Network, or EDEN - Thursday, Sept. 10, 2009. The stations provide information that is available to scientists online, to aid research on organisms in the Everglades and the progress of restoration efforts. Fujisaki, with UF's Fort Lauderdale Research and Education Center, was part of the project team that developed EDEN.

(PhysOrg.com) -- When scientists discuss Everglades restoration, one phrase pops up again and again -- "getting the water right."

It refers to the importance of water depth -- making sure the proper areas are dry or marshy or submerged. For decades, experts had to take

their own water-depth measurements or get data from multiple agencies.

In March 2005, things got easier. A modeling system called the Everglades Depth Estimation Network, or EDEN, went online. Developed by the U.S. Geological Survey working with the University of Florida and Florida Atlantic University, the system provides daily estimates of water depth and other information for most of the Everglades.

Now, a UF study verifies that EDEN's estimates are accurate.

As reported in the current issue of Ecohydrology, researchers with UF, FAU, the University of Connecticut and the South Florida Natural Resources Center took water-depth measurements at 24 locations and compared them with EDEN's estimates. Most estimates matched the measurements within 2 inches.

Frank Mazzotti, an associate professor with UF's Institute of Food and Agricultural Sciences, says now that the system has been verified, he hopes it will gain popularity with scientists who assess the progress of Everglades restoration efforts, which aim to restore natural water flow throughout the region and support populations of indigenous animals and plants.

"We've never had a tool like this," said Mazzotti, one of the study authors. "The idea is to make it freely available."

Already, experts with UF and other Florida institutions have used EDEN to investigate populations of wading birds, invasive plants, fish and amphibians.

The system uses more than 200 monitoring stations throughout the Everglades that measure water depth. That information, along with geographic data, is then interpreted by computer software. The system generates water-depth estimates for the entire freshwater portion of the

greater Everglades, broken down into quadrants measuring about 1,300 feet by 1,300 feet.

Mazzotti says he's thrilled to have EDEN available, and is using it in a study that correlates alligators' body condition with water levels.
The system will receive upgrades in the near future to provide better modeling of topography below the water and better water surface estimates, said Pamela Telis, project team leader for the U.S. Geological Survey.

The system is the brainchild of Aaron Higer, a longtime USGS program manager and current UF employee, who first envisioned the idea in the 1960s.

The system is found at sofia.usgs.gov/eden/ .

Provided by University of Florida (news : web)