Who is Participating?

Approximately 70 researchers are interested in establishing a Hydrologic Observatory in the Suwannee River Basin. These researchers are affiliated with University of Florida, Florida State University, University of South Florida, University of Central Florida, University of North Florida, Florida International University, Florida A & M University, Suwannee River Water Management District, Florida Department of Environmental Protection, Florida Geological Survey, University of Georgia, Princeton University, Ohio State University, University of New Hampshire, USDA (Tifton, Georgia), USGS, NOAA, NRL and NASA.

How will Observatories be Selected?

Observatories will be selected by NSF using their proposal peer review system. Important considerations include:

- The strength of the science hypotheses
- The design of the data observation network
- The innovative use of models with measurements
- The degree of leveraging with existing data and programs
- The degree of university, state, local and stakeholder support
- Plans for education and outreach

Photo courtesy of Wes Skiles

Http://suwanneeho.ifas.ufl.edu

Contact:

Jon Martin, Associate Professor
University of Florida
Department of Geologic Sciences
PO Box 112120
Gainesville, Fl 32611-2120

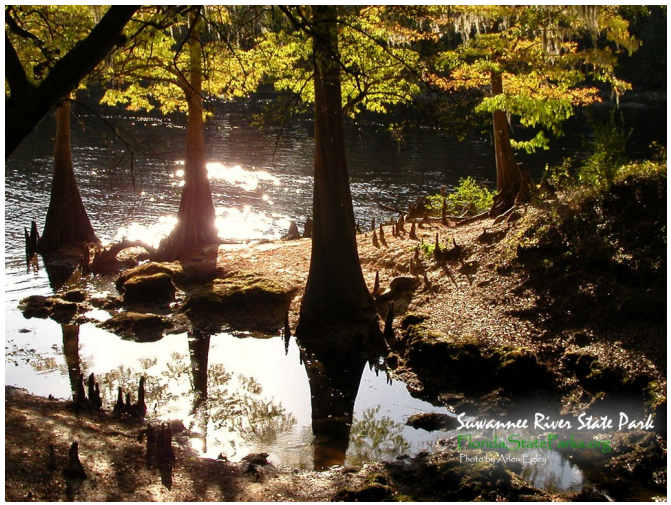
Phone (352) 392-6219
FAX (352) 392-9294

email: jmartin@geology.ufl.edu

Suwannee River Hydrologic Observatory

At Risk
and
In Transition

http://suwanneeho.ifas.ufl.edu



What is a Hydrologic Observatory?

Hydrologic observatories (HOs) are conceived to be large-scale instrumented river basins (10,000 to 30,000 square kilometers) that will provide a coherent, multi-disciplinary, multi-scale characterization of the landscape. They will address major environmental challenges such as eutrophication from non-point source pollution, as well as long-standing hydrologic science questions such as estimating evapotranspiration, groundwater recharge, or groundwater discharge to estuaries over spatially complex terrains.

Why the Suwannee River?

The Suwannee is ideal for an observatory for both pure scientific reasons as well as practical environmental applications. It is one of the last largely unregulated rivers in the U.S. The basin, currently with good water quality, could represent a relatively unimpacted watershed for comparison with highly impacted and urbanized watersheds. Current land use is fairly low impact but is in transition to more intense agricultural use and higher density population. This change in land use could impact water quality and quantity within the basin.

What are the Goals?

The overall goal for the Suwannee Hydrologic Observatory is to provide science-based answers related to the hydrologic carrying capacity of the basin.

- What is the hydrologic carrying capacity to maintain water quality and ecological integrity of groundwaters, springs, rivers, wetlands and the estuary?
- What are the socioeconomic trade-offs of exceeding it?
- How does it vary among hydrologic regions?
- How will it be affected by hydrologic extremes and climate change?

This will be accomplished through:

- Characterization of the stores, fluxes, flow paths and residence times of water, nutrients, sediments, and energy throughout the watershed
- Characterization of the hydrology, water quality and ecosystem response to perturbations (human and natural) to the system
- Characterization of the socioeconomic response to perturbations in the system
- Merging measurements and predictions of hydrologic, water quality, ecosystem, and socioeconomic response in a coupled watershed-scale operational/predictive model

When and Where?

The call for proposals is scheduled to be released by the National Science Foundation in early 2005. Proposals will be due in April-May. Initiation of the observatory would be late 2005 to early 2006 and run for 5 years with evaluation for renewal at 5 year intervals.

Source: USGS

The observatory will include the entire Suwannee River watershed (~25,000 km²). The structure of the observatory is still being developed, but primary points of operation will probably be at universities and satellite field facilities within Florida and Georgia.

The observatory will study the transition between three distinct but linked hydrologic regimes:

- ***Upper Suwannee***: Interacts with the surficial aquifer. Surface water dominates.
- ***Lower Suwannee***: Interacts with karst Floridan Aquifer.
- ***Deltaic Estuary***: Contributed to by the lower Suwannee River along with substantial submarine groundwater discharge.