

## Field Trips for the 17th Sinkhole Conference

### Field Trip 1

**Trip Leaders: Michael C. Alfieri, Sam B. Upchurch, Thomas M. Scott**

**Monday, March 27, 2023, all day trip, 8:00 am to 5:30 pm**

#### Florida's Karst Landscapes Field Trip

Florida is well known among karst scientists for its geologically young, eogenetic karst. On this field trip, we will examine and discuss Florida's karst features ranging from karren and microkarst to large collapse sinkholes, poljes, uvalas and springs. Participants will see numerous examples of karst geomorphology as the trip travels to the field stops and returns to the USF campus. During the drive, a discussion of the issues in Florida related to the impact of modern sinkhole development and insurance against sinkhole damage will be presented.

The field trip will begin at the USF campus and proceed north on I-75 to Gainesville. Along the route we will see large uvalas in the Brooksville Ridge and Paynes Prairie, a large polje. The first stop is at Devil's Millhopper Geological State Park north of Gainesville where participants can view the Devil's Millhopper, a large collapse sinkhole that penetrated from the Eocene Ocala Limestone through the Miocene Hawthorn Group and younger sediments.



Devil's Millhopper Geological State Park

The second stop is at Haile Quarry near Newberry west of Gainesville. Here, the Eocene Ocala Limestone is riddled with solution pipes, cavities and other dissolutional features. There will be fossil-collecting opportunities at the quarry.



Haile Quarry

The third stop will be at Rainbow Springs State Park near Dunellon approximately 105 miles north of the USF campus. The Rainbow Springs Group consists of numerous springs that create the Rainbow River. Our group will visit the head spring and discuss the issues surrounding springs in Florida, including current issues related to contamination and declines in discharge. These changes in water quality and discharge will be related to conditions in the springhead and sinkhole-related water sources. Along the entrance road to the park, we will visit an abandoned hard rock phosphate mine and discuss the origin of hard rock phosphate as a result of ancient sinkholes and swallet development.

The field trip will leave the USF campus at 8:00 am and return to the campus around 5:00 pm.



Rainbow Springs State Park

**PLEASE NOTE:** Hard hats, good field boots and safety vests are required to participate in the trip. Conference organizers cannot provide the necessary safety items. Bring rock hammers and sample collection bags as desired.

## About the Trip Leaders:

**Michael (Mike) C. Alfieri** - A professionally licensed geologist in thirteen states and a nationally certified/registered hydrogeologist with twenty-five years of experience, Mr. Alfieri manages hydrogeological/water resource engineering teams in the evaluation, planning design, testing, permitting, and construction of wells for potable supply, deep injection, and managed aquifer recharge for Water Science Associates. He is currently Vice Chair of the Florida Board of Professional Geologists, a position he previously held along with a Chair of the Board; the Chairman of ASTM Sub-Committee D18.21.03: Well Design, Maintenance & Construction, Voting Member of ASTM Sub-Committee D18.27: Karst, and is a member of the National Groundwater Association's Managed Aquifer Recharge work group.

Over his professional career, Mr. Alfieri managed and completed numerous large and small-scale geologic, hydrogeologic, and karst science project investigations across the U.S. He has also provided third-party review and professional geologic opinions regarding a wide breadth of geologic projects completed by others. Mr. Alfieri is a published lead and/or co-author to numerous peer-reviewed journal articles, conference proceedings, and an academic textbook, [The Karst Systems of Florida: Understanding Karst in a Geologically Young Terrain](#).

**Sam B. Upchurch, Ph.D., P.G.** – Sam Upchurch is a karst geoscientist with expertise in geochemistry, statistics, and carbonate sedimentology. He studied geology at Vanderbilt University (BA) and Northwestern University (MS, Ph.D.). He worked for the Tennessee Division of Geology and the Corps of Engineers Great Lakes Research Center; taught at Michigan State University and the University of South Florida, where he served as Professor and Chairman of Geology; and served as a shareholder and Principal at Environmental Resources Management and SDII Global Corporation. He is a Senior Fellow of the Geological Society of America, the recipient of several awards for public and professional service, and the author of over 200 publications. He is senior author of *Karst Systems of Florida*, which was published by Springer in 2019.

**Thomas (Tom) M. Scott** Education - BA, University of South Florida (1971); MS, Eastern Kentucky University (1973); PhD, Florida State University (1986). Florida Geological Survey 1974-2009; Assistant State Geologist for Geological Investigations, Florida Geological Survey 1985-2009. Senior Principal Geologist, SDII Global Corporation, Tampa, FL 2009 – present (mostly retired). Assistant State Geologist Emeritus, Florida Geological Survey 2018 – present. Research interests: Cenozoic lithostratigraphy, geologic history, karst geology and hydrogeology. Professional interests: Sinkhole activity insurance claims and litigation. Licensed professional geologist (Florida #99), Certified Professional Geologist

(American Institute of Professional Geologists #4950). More than 150 publications, maps, abstracts including the 2001 geological map of Florida, the 2004 Bulletin 66 *Springs of Florida* and is a co-author of the 2019 *Karst Systems of Florida*.

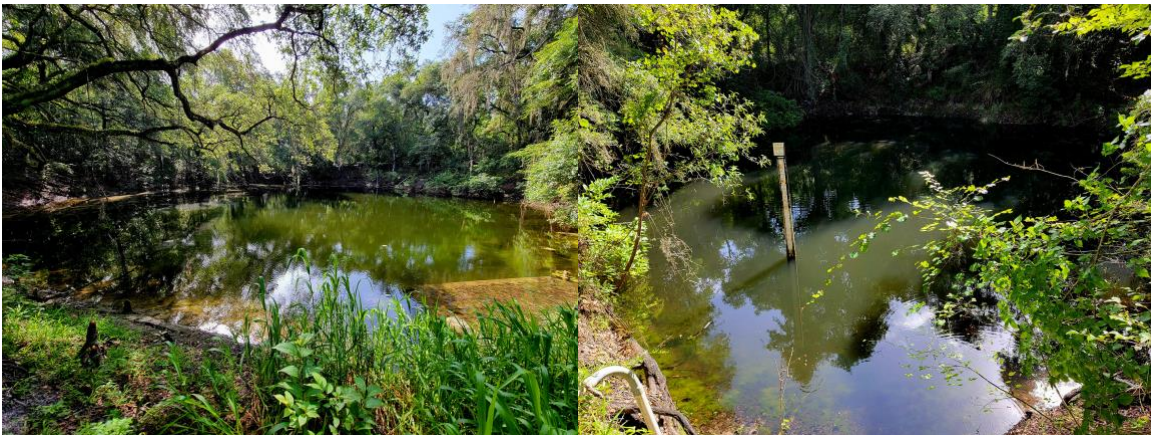
## **Field Trip 2**

**Trip Leaders: David J. DeWitt, Jason LaRoche, Robin Speidel**

**Friday, March 31, 2023, afternoon trip, 1:30 pm to 6:00 pm**

**Morris Bridge Sink, Hillsborough County Fl.**

The Morris Bridge Sinks complex is located at the Flatwoods Park associated with the Lower Hillsborough River Flood Detention Area north of Tampa; Fl. Morris Bridge Sink is a classic Florida karst window into the Upper Floridan aquifer. The sink has been studied as a potential source of water for environmental augmentation of the lower Hillsborough River during periods of protracted drought. A discussion on the history of Morris Bridge area, flood control and water supply management in metropolitan Tampa and the greater Tampa Bay region will highlight complexities of managing water resources in an urban setting.



Morris Bridge Sinks complex

**Peck Sink Preserve, Hernando County, Fl.**

Peck Sink is a large drainage feature located south of the City of Brooksville in Hernando County, Fl. A series of sinkholes at Peck Sink Preserve occur as a central terminus for drainage over a 17 square mile watershed into the Upper Floridan aquifer. Peck Sink is on the western margin of the Brooksville Ridge, a prominent landform in west-central Florida, that provides the geologic setting and topographic relief for karst development and contains

many closed depressions, sinkhole lakes that dominate the internal drainage features found on the Ridge.



Peck Sink

### **About the Trip Leaders:**

**David J. DeWitt, P.G.** Chief Professional Geologist (retired) at the Southwest Florida Water Management District. He has over 30 years' experience working on groundwater resource in Florida, including aquifer delineation and groundwater characterization through test drilling and hydrogeologic data collection, monitor well design and construction. He has also conducted water quality research on springs in west-central Florida with the District's Water Quality Monitoring Program. Dave is geosciences graduate from the University of South Florida and has been a licensed Professional Geologist in Florida since 1994.

**Jason LaRoche** is a Senior Professional Geologist in the Geohydrologic Data Section of the Southwest Florida Water Management District. He earned a Bachelor's degree in Geology and a Master's degree in Hydrogeology from the University of South Florida in 1996 and 2007, respectively. As a project geologist in the Regional Observation and Monitor-well Program (ROMP) since 1999, he oversees deep exploration, well construction, and aquifer testing for District monitor-well sites and special investigations. He specializes in aquifer performance test (APT) analyses and mapping the hydrostratigraphic framework of peninsular Florida. Born and raised in Florida, Jason is also a long-time volunteer advocate for conservation and restoration of natural Florida and has served over 18 years on the board of the Florida Native Plant Society, Hernando County Chapter.

**Robin Speidel** is an Environmental Data Project Manager with the Water Quality Monitoring Program at the Southwest Florida Water Management District. He oversees projects associated with the data collection of both groundwater and springs throughout the District's 16 counties. He also chairs the Florida Water Resources Monitoring Council's Continuous Monitoring Workgroup as well as the Aquifer Storage and Recovery workgroup. He is Vice Chair, and Symposium Chair for the Geology Alumni Society at

the University of South Florida. Having been born and raised in Florida he understands the importance of the state's most valuable resource, water.