

## KARST FIELD TRIP IN WEST CENTRAL FLORIDA

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Like many carbonate terrains, the Florida Carbonate Platform is modified by dissolution processes resulting in karst. Karstification has developed significant tertiary porosity throughout the stratigraphic framework of the platform and is a dominant component of groundwater flow. The complex nature of conduit systems in the Floridan Aquifer is not well understood. This is primarily associated with the difficult nature of exploration of submerged conduits. Only in the recent past has SCUBA technology advanced to the point to which extended exploration is possible with limited danger to life.

Voids and conduits within the vadose zone do exist throughout the Floridan Carbonate Platform and are concentrated primarily in the uplands of the panhandle, along the Cody Scarp and the Ocala Uplift of West Central Florida. These dissolution features can be subdivided into two primary categories: those that form in vadose conditions and those that are a reflection of a prior phreatic surface. These latter voids may serve as a key to understanding present speleogenetic processes below the present water table and may also help link speleogenetic processes to sea level change.

In karst of the Floridan Carbonate Platform, conduit integration and morphology is potentially a reflection of the young diagenetic state of the host rock, mixing zone dissolution, biogeochemical processes, stratigraphic and tectonic variations in transmissivity, and glacio-eustatic overprinting. We will visit several examples of karst in West Central Florida that illustrate these various aspects of karst development in a partially exposed peninsular

carbonate platform, composed of near horizontal sequences of carbonates, evaporates, and clastics ranging in age from the Jurassic to the Holocene.

As the population of Florida grows at an ever increasing pace, stresses on karst aquifers and karst-obligate fauna will also grow. We will see several examples of management practices in karst terrains including watershed protection, water withdrawal regulations, urban land use practices, engineering design, and cave access policies.

### Sites Included:

- Sulphur Springs Karst Basin (Urban karst landscape management)
- Ybor City National Historic Landmark (Historic Cuban culture)
- Dames Cave Area, Withlacoochee State Forest (Vandal, Danger, Peace Sign Caves)
- Haile Limestone Quarry (Exposed epikarst and fossil collecting)
- Rose Creek and Sink (Groundwater recharge along the Cody Scarp)
- Ichetucknee Springs State Park (Classic Florida spring with clear cool waters)
- O'Leno State Park (Sinks of the Santa Fe River)
- Bat Cave, Santa Fe Community College, Geological Field Station (Long dry cave)
- University of South Florida GeoPark (Mantled karst terrain and geophysical studies)

**FIELD TRIP ROAD LOG**

Miles Cumulative Miles Description

**Day 1**

0	0	Field trip begins at parking lot immediately west of the Science Center, University of South Florida. Exit and turn left onto Laurel Drive.
0.1	0.1	Turn right onto Alumni Drive at stop sign.
0.4	0.5	Turn left onto Pine Drive at stop sign.
0.1	0.6	Turn right at stoplight (continues as Pine Drive).
0.15	0.75	Turn left onto Bruce B. Downs Blvd. at light
0.15	0.9	Turn right onto Fowler Ave. at light.
2	2.9	Continue on Fowler Ave. past Nebraska, under I-275, and through stoplight with Florida Ave. Name of street changes to Country Club Drive after intersection with Florida.
0.1	3	Turn left into parking lot of Schreuder Environmental, Inc. Day 1 Stop 1 – Curiosity Creek/Ewanoski Spring/Blue Sink Complex
0	3	Turn right onto Country Club Drive.
0.1	3.1	Turn right onto Florida Ave. at stoplight.
0.2	3.3	Turn right at 115th Ave. and park on side of road. Day 1 Stop 2 – Blue Sink pumping station
0	3.3	Turn right onto Florida Ave.
1.5	4.8	Turn left onto Busch Ave.
2	6.8	Turn right onto 30th (Bruce B. Downs).
0.3	7.1	Turn right onto Yukon Ave.
0.2	7.3	Bear left onto Riverhills Drive.
0.3	7.6	Turn left into Rowlett Park.
0.05	7.65	Turn left and proceed to Hillsboro River dam. Day 1 Stop 3 – Hillsboro River dam
0.05	7.7	Turn left onto Riverhills Drive (South)
0.3	8	Turn right onto Waters Ave. (West)
0.2	8.2	Continue on Waters Ave. through slight left shift in road at 12th Street.
0.1	8.3	Turn right onto Alaska Street (North). Day 1 Stop 4 – Alaska Sink
0.1	8.4	Continue on Alaska Street and turn left onto Fairbanks Street (West).
0.2	8.6	Turn right on Nebraska Ave. (North).
0.9	9.5	Continue on Nebraska Ave, through Busch and turn right onto Orchid Street (East). Day 1 Stop 5 – Orchid Sink
0.1	9.6	Turn left onto Jasmine Street (North).
0.2	9.8	Turn left onto Poinsettia Street (West).
0.05	9.85	Turn right onto Marigold Street and park (North) Day 1 Stop 6 – Poinsettia Sink

- 0.15 10 Continue on Marigold Street and turn left onto Bougainvillea Ave. (West)
- 0.1 10.1 Turn left onto Nebraska Ave. (South).
- 1.5 11.6 Turn right into the Sulphur Springs parking area just after the intersection with Bird St.  
Day 1 Stop 7 – Sulphur Springs  
(Schreuder and Reager, this volume)  
(Garman, 2002)
- 0 11.6 Turn right onto Nebraska Ave. (South).
- 3.8 15.4 Turn left onto Columbus Drive (East)
- 0.9 16.3 Turn right onto 21st Street (South)
- 0.4 16.7 Turn right onto 7th Street (La Sentima) and enter the Ybor City National Historic Landmark. Find parking.  
Day 1 Stop 8 – Ybor City
- 0 16.7 Turn left onto 22nd Street (North).
- 0.3 17 Turn left onto I-4 (West).
- 1 18 Exit right onto I-275 (North).
- 14 32 Merge onto I-75.
- 26 58 Exit onto US 98 (Brooksville Exit).
- 0.2 58.2 Turn left on US 98 (West).
- 11 69.2 Turn right at stoplight in Brooksville (Still US 98) (North).
- 6.7 75.9 Turn right onto Highway 491 (North).
- 4.5 80.4 Park on east side of 491 at the pull off for the Dames Cave Area.  
Day 1 Stop 9 – Dames Caves Area, Withlacoochee State Forest  
(Brinkmann, this volume)  
(Brinkmann and Reeder, 1994)
- 21 101.4 Continue north on 491. Cross US 41 and turn left onto Highway 200 (North).
- 14 115.4 Turn left onto I-75 on the outskirts of Ocala (North).
- 37 152.4 Exit at the Newberry Road Exit in Gainesville.
- 0.2 152.6 Turn left onto Newberry Road (East)
- 4.5 157.1 Day 1th field trip ends at intersection of Newberry and NW 13th.

**DAY 2**

- 0 0 Day 2th field trip begins at intersection of Newberry Road and NW 13th.
- 16.5 16.5 Turn right on Haile Road.
- 2.2 18.7 Turn left into Haile Quarry.
- 0.1 18.8 Proceed to parking area.  
Day 2 Stop 1 – Haile Quarry  
(Martin and Portell, 2002)  
(LaFrenz et al., this volume)
- 0.1 18.9 Turn right onto Haile Road.
- 2.2 21.1 Turn right onto Newberry Road.
- 0.6 21.7 Turn right onto US 27.

- 18 39.7 Turn left at stoplight in High Springs (still US 27).  
 10.5 50.2 Turn right onto Highway 47 in Ft. White.  
 11 61.2 Take Highway 47 North to intersection with Highway 240 in Columbia City.  
 Day 2 Stop 2 – Rose Sink  
 8.5 69.7 Take Highway 47 South to the north entrance road to Ichetucknee Springs  
 State Park and turn right.  
 3.8 73.5 Follow entrance road to parking.  
 Day 2 Stop 3 – Ichetucknee Springs State Park  
 3.8 77.3 Return to Highway 47 and turn right (South).  
 2.5 79.8 Follow Highway 47 to US 27 and turn left.  
 0.3 80.1 Turn left onto Highway 18 (East).  
 7 87.1 Turn right onto US 441 (South).  
 1.3 88.4 Turn left into O’Leno State Park  
 1.7 90.1 Follow entrance road to parking.  
 Day 2 Stop 4 – O’Leno State Park  
 (Smith et. al, 2002)  
 (Martin and Portell, 2002)  
 1.7 91.8 Return to US 441 and turn left (South).  
 12 103.8 Follow US 441 to I-75.  
 0.3 104.1 Turn left onto I-75 South.  
 12 116.1 Exit at Newberry Road.  
 0.2 116.3 Turn left onto Newberry Rd.  
 4.5 120.8 Day 2th field trip ends at intersection of Newberry and NW 13th.

**DAY 3**

- 0 0 Day 3th field trip begins at intersection of Newberry Road and NW 13th.  
 17.1 17.1 Follow Newberry Road to intersection with US 27 and turn right (North).  
 6 23.1 Turn left onto 76th Street (wide dirt road) (West).  
 1.5 24.6 Cross railroad track and turn right at sign for Santa Fe Community College  
 Geologic Field Station (North).  
 0.2 24.8 Follow dirt road to gated entrance to station.  
 Day 3 Stop 1 – Bat Cave  
 (Baxter, et. al, 1976)  
 0.2 25 Turn left onto 76th Street (East).  
 1.5 26.5 Turn right onto US 27 (South).  
 6 32.5 Turn left onto Newberry Road (East).  
 13.6 46.1 Turn right onto South I-75.  
 107 153.1 Follow I-75 to I-275 exit. Exit right onto I-275.  
 9 162.1 Exit at Fowler Ave.  
 0.2 162.3 Turn left onto Fowler Ave. at stoplight (East).  
 1.8 164.1 Turn left onto Bruce B. Downs Blvd. at stoplight (North).  
 0.15 164.3 Turn right onto Pine Drive at stoplight (East).  
 0.15 164.4 Bear left at stoplight (still Pine Drive) (North).

- 0.1 164.5 Turn right onto Alumni Drive (East).  
 0.2 164.7 Turn left onto Magnolia Drive (North).  
 0.2 164.9 Turn left into Moffitt Cancer Center parking lot (West).  
 Day 3 Stop 2 - University of South Florida GeoPark  
 (Stewart, this volume  
 (Stewart and Parker, 1992)

### End of Field Trip Road Log

Cumulative Travel Distance = 442.8 miles

### REFERENCES

- Baxter, J., Benlon, C., Dahlgren, G., Redmond, S., Smith, P., 1976, (map) Bat Cave, Newberry, Alachua County, Florida.
- Brinkmann, R., Reeder, P., 1994, The Influence of Sea-Level Change and Geologic Structure on Cave Development in West-Central Florida, *Physical Geography*, vol. 15, no. 1, pp. 52-61.
- Garman, K. M., 2002, Biodiversity Associated with Anoxic, Sulfidic Environments in West Central Florida Cave Systems, *In Hydrogeology and Biology of Post Paleozoic Karst Aquifers* (Martin, J. B., Wicks, C. M., Sasowsky, I. D., eds), *Karst Frontiers, Proceedings of the Karst Waters Institute Symposium*, pp. 64-65.
- Martin, J. B., Portell, R. W., 2002, Field Trip Guide: A Brief Introduction to the Geology, Hydrogeology, and Natural History of North Central Florida, *In Hydrogeology and Biology of Post Paleozoic Karst Aquifers* (Martin, J. B., Wicks, C. M., Sasowsky, I. D., eds), *Karst Frontiers, Proceedings of the Karst Waters Institute Symposium*, pp. 205-211.
- Smith, L. A., Martin, J. B., Screamon, E., J., 2002, Surface Water Control of Gradients in the Floridan Aquifer: Observations from the Santa Fe River Sink-Rise System, *In Hydrogeology and Biology of Post Paleozoic Karst Aquifers* (Martin, J. B., Wicks, C. M., Sasowsky, I. D., eds), *Karst Frontiers, Proceedings of the Karst Waters Institute Symposium*, pp. 44-48.
- Stewart, M., Parker, J., 1992, Localization and Seasonal Variation of Recharge in a Covered Karst Aquifer System, Florida, USA, *International Contributions to Hydrogeology*, vol. 13, Springer-Verlag, pp. 433-4

# Karst Field Trip Sites

