

## Field Trips for the Puerto Rico Sinkhole Conference

### Field Trip 1

Trip Leaders:

Ingrid Padilla- University of Puerto Rico, Mayaguez

Brian Smith- Barton Springs/Edwards Aquifer Conservation District, Austin, Texas

Monday, April 20, 2020 all day trip, 8:00 am to 5:30 pm

Destinations: Rio Camuy Cave Park and Arecibo Observatory

The Rio Camuy Cave System is an underground river in the northern karst belt of Puerto Rico. The cave system consists of about 16 km of river and tributary passages and considerably more side passages. This field trip will follow the traditional tourist trip that includes a walk through the Cueva Clara passage to a wide ledge with views of the Rio Camuy below and the large opening of the Empalme Sinkhole above. Another stop on the trip will be a view of the large Tres Pueblos Sinkhole (see image below) with a view of the Rio Camuy flowing across the bottom of the sinkhole about 120 m below the surface. In addition to discussion of the system's hydrology, the impact of record flooding from Hurricane Maria in 2017 will also be examined.



The Arecibo Observatory is a radio telescope with a 300-m diameter dish set into a large sinkhole adjacent to the Tanama River (see image below). The visit will include views of the dish and antenna and the surrounding karst hills. The exhibit area has

photographs of the modification of the sinkhole and construction of the dish along with how the radio telescope functions and some of the findings of the telescope.



## Field Trip 2

Trip Leaders:

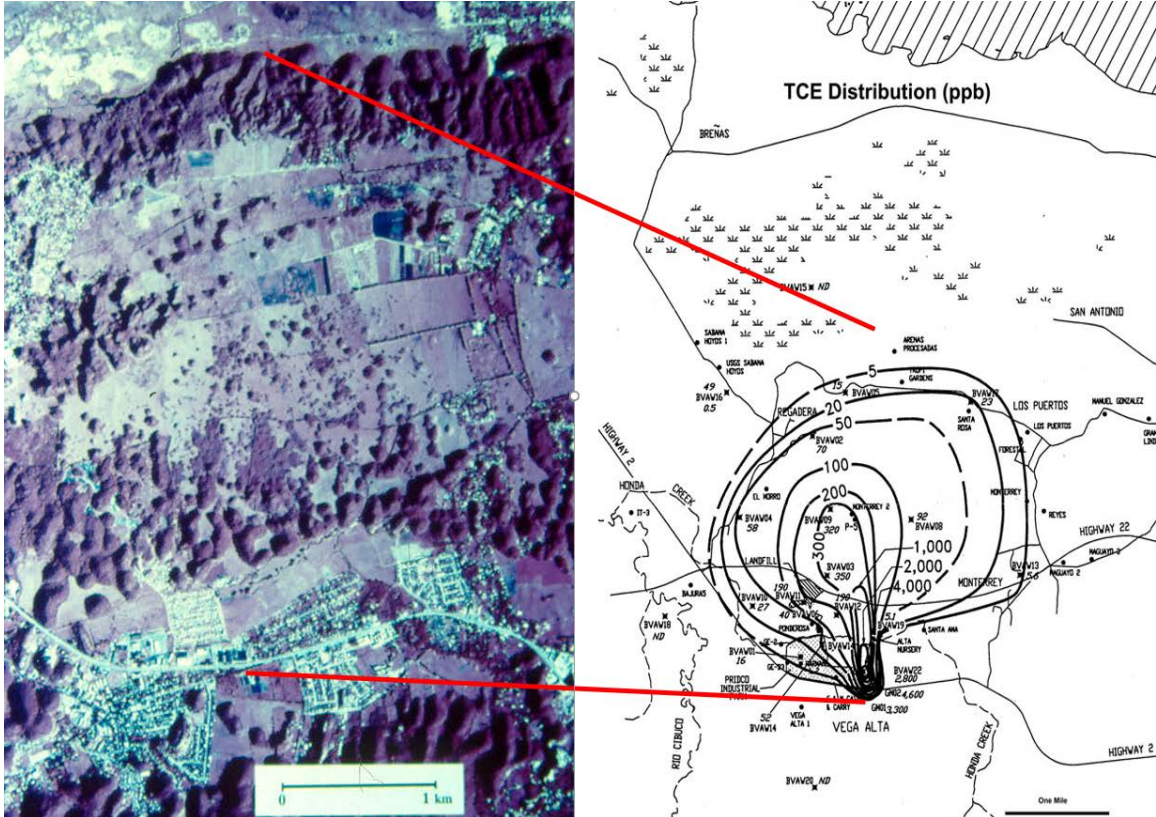
Brian Smith- Barton Springs/Edwards Aquifer Conservation District, Austin, Texas

Ingrid Padilla- University of Puerto Rico, Mayaguez

Friday, April 24 afternoon trip, 1:30 pm to 6:00 pm

Destinations: Superfund sites in Vega Alta and Vega Baja

The northern karst belt of Puerto Rico is heavily dependent on the karst aquifers for much of its water supply. It is also home to many industrial sites from which industrial contaminants have entered the karst aquifers. Studies have been made of these aquifers for close to 40 years and attempts have been made to clean up the industrial sites and the aquifers, some of which are Superfund sites. The image below shows a plume of TCE at the Vega Alta Superfund Site as it was interpreted in 1993. This trip will include visits to some of the sources of contamination and the surrounding karst landscape. Plumes of contaminants generally move north toward the Atlantic Ocean, although the plumes spread to the east and west where the gradients of the potentiometric surfaces of the aquifers become nearly flat. Pumping from water-supply wells also induces flow of contaminants toward these wells.



Participants on either field trip should be prepared for warm to hot, humid, tropical weather. Rain is likely so participants should bring an umbrella or rain parka. Between rain events the tropical sun is intense, so participants should bring a strong sunscreen. Walking will be on paved trails with minor elevation changes. Comfortable shoes, such as tennis shoes or sandals, are encouraged. Caving equipment will not be necessary for the visit to the Camuy Cave. Lunch and drinks will be provided for the all-day field trip. Drinks will be provided for the half-day field trip.