

Sinkholes

On the western side of the SWA 1187 there are several sinkholes, which is another South Carolina rarity as sinkholes are normally associated with mid-eastern Florida. The far western portion is a karst region in which the EPA defines as a topography that is formed over limestone, dolomite, or gypsum by solution of the rock and is characterized by closed depressions or sinkholes, caves, and underground drainage.

Naturally acidic rainwater percolates through the limestone and carbonate rock while dissolving small particles as the acid is neutralized (Fig. 1). The small dissolved particles are then carried away by the natural flow of the underground waters creating voids in the bedrock layer. Over time, the voids gradually get bigger allowing the loose cover material such as sand to fill in (Fig. 2). The subsiding subsurface material causes the land surface to sink and in many cases, creates small circular ponds. One sinkhole on the site was GPS recorded at 11 feet below sea level.

Although sinkholes are naturally occurring phenomena, they are sometimes set off or enhanced by disturbances such as development, changes in hydraulic gradient, water table fluctuations, droughts, heavy rains, and vibrations such as ones associated with earthquakes. A good while ago, this part of the property was part of an old bombing range and bomb explosions may have played a large part in creating these wetlands .

The sinkholes on the SWA 1187 consist mostly of tupelo and pondcypress with some aquatic vegetation growing in the more open areas (Figs. 3, 4). Though small, these areas may provide some habitat for waterfowl and may be critical for populations of crayfish, reptiles, and amphibians.

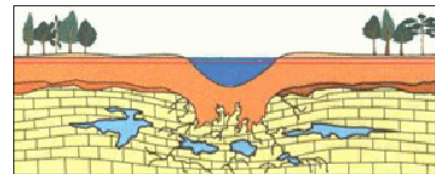


Figure 1. Water percolating into the limestone.
Source: USGS

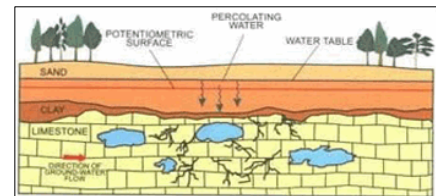


Figure 2. Sinkhole formation.
Source: USGS



Figure 3. Sinkhole full of aquatic vegetation



Figure 4. Sinkhole filled with tupelo trees