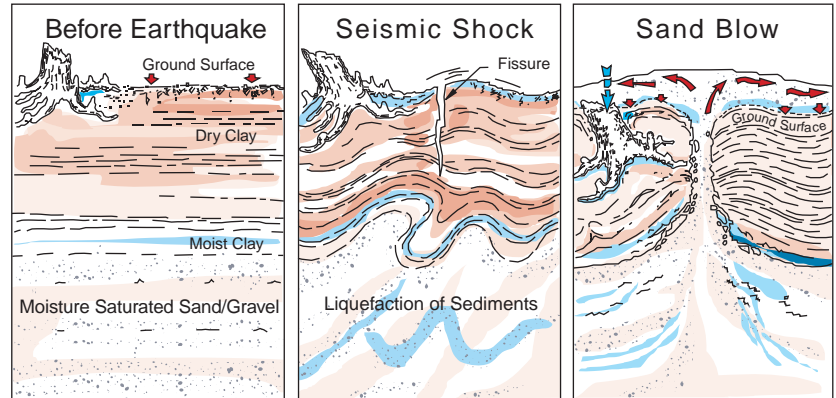


# Prehistoric South Carolina earthquakes

Figure 1 (right). When strong earthquakes release their energy, the violent shaking may cause underground layers of saturated sand and gravel to behave like a fluid under pressure. This fluid mass may then shoot up through cracks in the overlying soil and blow out over the surface (Modified from "Earthquakes in Indiana.").



In South Carolina, geologists have recently discovered evidence of at least five large paleoearthquakes during the past 5,000 years (Amick and Maurath, 1988). During a strong earthquake, subsurface saturated sand becomes liquefied and this fluid mass can be ejected to the surface (Figure 1). As shown in Figures 2 and 3, paleoliquefaction features, considered earthquake induced, have been found in South Carolina's coastal area. The resulting liquefaction features, sand blows, vents/fissures, landslides, and differential compaction, are preserved in the soil as evidence of the earthquake's occurrence and strength. Given the necessary conditions, a magnitude 5.5 quake can generate liquefaction features that could cause damage to existing facilities and property (Figure 4).



Figure 2 (left). Sand blow crater associated with the 1886 Charleston earthquake (McGee and others, 1986).

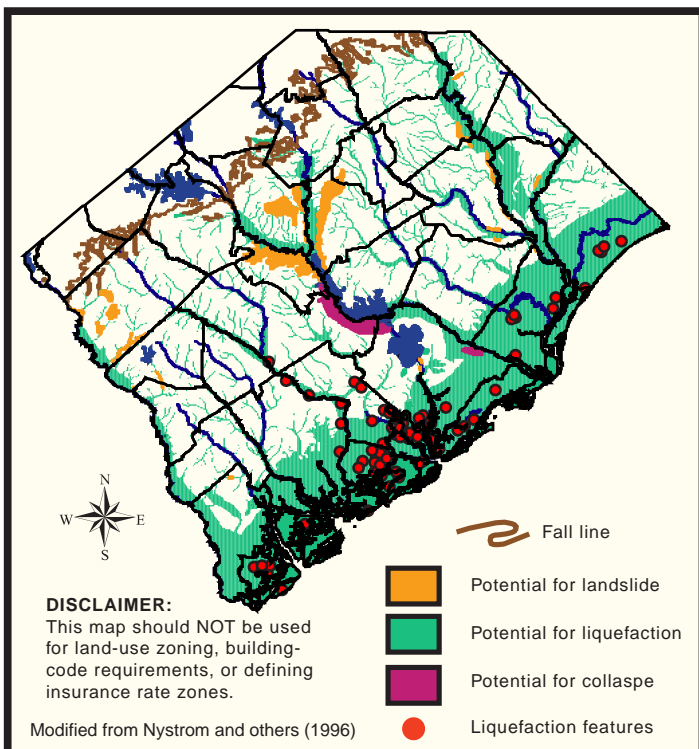


Figure 3 (right). Dry fissure along the bank of the Ashley River associated with the 1886 Charleston earthquake (McGee and others, 1986).



Figure 4 (left). Modified version of the Earthquake hazards map for the Coastal Plain, showing Paleoliquefaction sites.