patterns. Extensive dissolution of the carbonate rocks caused well-developed karst landforms that have been repeatedly covered and exhumed by the post-Miocene sea-level fluctuations. Surficial erosion of the impermeable siliciclastic cover started in response to the increasing fluvial activity in the Pleistocene. Diffuse autogenic recharge through soil layers caused extensive dissolution within the epikarst mainly because of the increased chemical aggressiveness induced by soil gases. (Reference 2.5.1-316)

The final sequence of karst development in the area involved the gradual subaerial exposure of the carbonate platform in response to periodic transgressions and regressions of interglacial seas. New areas of carbonate platform were exposed to karst activity as the Pleistocene seas retreated. Older depressions at higher elevations coalesced and expanded, resulting in more circular and larger depressions (Reference 2.5.1-316) than the younger, lower terraces, such as the Pamlico and Silver Bluff terraces along the coast.

2.5.1.2.1.3.2 Sinkholes

Karst features form when the flow of water is concentrated along well-defined conduits. Such conduits include joints or fractures, faults, and bedding planes in the rock, enlarged by rock dissolution. Dissolution of limestone in Florida appears to occur preferentially in recharge areas and near the saltwater/freshwater coastal mixing zones; recharge areas are the more important of these two environments of sinkhole development. (Reference 2.5.1-319) Factors influencing the development of karst terrain include age of the limestone; its depth below the ground surface; structural lineaments in the limestone that provide preferred areas for dissolution; permeability of the overlying material (Reference 2.5.1-315); phreatic-vadose zone fluctuations induced by sea-level changes; paleokarst templates; deposition and erosion of siliciclastic sediments; and the formation of a fluvial system (Reference 2.5.1-316). Anthropogenic factors include over-pumping of groundwater that reduces the shear-strength of the near-surface materials, and causes higher intergranular stress and a resulting reduction in the load carrying capacity of the soils, as well as the placement of structures over geologic features that have the potential for sinkhole activity. These factors often trigger sinkhole activity and ground subsidence. (Reference 2.5.1-315)

Sinkholes are a primary feature of karst terrains. The characteristic surface depression — commonly circular — can be identified on aerial photographs, maps, and in the field. Sinkhole activity involves the development of a sinkhole, including its early stages (raveling) where there is no visible manifestations of ground surface subsidence or collapse. Raveling is the lateral or downward migration of unconsolidated material into more deeply buried cavity in limestone. (Reference 2.5.1-315)

Sinkholes can occur in a variety of shapes ranging from steep-walled to funnel-shaped to bowl-shaped depressions. Three major types of sinkholes common to Florida are solution sinkholes, cover-collapse sinkholes, and cover-subsidence sinkholes. These sinkhole types are distinguished by their