

Paper No. 119-3**Presentation Time:** 8:30 AM-8:45 AM***LATE HOLOCENE HISTORY OF THE TEN THOUSAND ISLANDS: SEA LEVEL RISE AND ITS IMPACT ON SOUTHWEST FLORIDA COASTAL EVOLUTION***

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The coastal geomorphology of Southwest Florida is a unique system of inshore mangrove forests, protected estuarine inner bays and islands, and outer, less-protected islands. Inner and outer islands develop upon gastropod or oyster reefs that become substrate for mangrove recruitment. Previous workers suggested that this system developed over the last 3500 years and its stability is dependent upon the rate of sea-level rise relative to rates of sedimentation. Sediment cores taken from the Ten Thousand Islands indicate that two transgressive/regressive sediment packages occur within the Late Holocene record. These packages are identifiable from either lithofacies shifts or faunal changes within subtidal facies. The initial transgression begins roughly 5000 years ago and deposits subtidal sands over non-marine sediments. The system then regresses through the development of intertidal oyster reefs and thin mangrove peats at ~4300 years. The rate of sea level rise, however, remained too high to permit the regressive system to persist. The second transgression places marine sediments above the peat. Subsequent oyster or vermetiform gastropod reef development causes the coastal system to stabilize or prograde. Vermetiform reefs form earlier and distally relative to oyster reefs and may serve as the barrier that ultimately predisposes Southwest Florida to its current geomorphology. Oyster reef development occurs later and more proximally and fills the inner bays. Slower sealevel rise rates during this interval produce a thicker regressive package. Younger peats may overlie oyster reef facies, forming inner bay islands, or may develop into thick accumulations along the inner bay margins as the coastal mangrove forest fringe stabilizes. An increase in sealevel rise rate should disrupt this geomorphic pattern. Changes in the distribution of recent oyster reefs and the inner bay mangrove fringe are already discernable.

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