

Paleogeography, sea-level rise, and the peopling of southwestern Nova Scotia, Canada: an archaeological perspective

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Pre-contact societies in the Maritime region are poorly understood owing to the small number of sites located and studied. Predicting the location of sites has always been difficult. Is there a way to refine or create search methods that would give greater success rate in locating undisturbed sites? An examination of local sea-level rise may provide a tool for interpreting pre-contact settlement patterns. In the Bay of Fundy, the main area in this study, sea-level rise has caused the submergence of shorelines and the movement of 'head of tide' up the Annapolis River.

Approximately eleven thousand years ago as the glaciers retreated, humans following caribou herds entered the Maritime region and settled at Debert, Nova Scotia. The environment that the Paleoindians encountered was dynamic. The tundra landscape turned to a forested one and became inhospitable for caribou herds. The majority of the caribou either perished or left the region and for the past half century the fate of Paleoindians has been debated. Some believe that the Paleoindians left the region with the caribou and have labeled this period as the "Great Hiatus" because for almost four thousand years there is no evidence of habitation. In the 1980s this hypothesis was countered with a "drowned landscape" one, and hence evidence that some Paleoindians remained but turned to a marine economy, is now at the bottom of the sea.

Rivers flowing into the sea are sensitive to sea level changes. Sea level height determines where the river meets the sea and also the point inland where tidal effects are no longer felt. This point, which is the farthest inland reached by tidal water, is called the 'head of tide'. It is the farthest point up river where incoming seawater meets outgoing fresh water and is a place where large anadromous fish congregate. As sea levels rise the head of tide moves inland. This means that river fishing activity should move inland as well. Sites excavated near present-day head-of-tide locations should show evidence of recent use. Since in the Bay of Fundy sea level has been rising for the last few thousand years it is expected that sites nearer the river mouth will show evidence of earlier use.

If people lived on the seashore, then clearly when the sea level rose the evidence would be under water. If they continued to live on the shore then there should be a continuous record from the present shore out to wherever the shore was 10 000 BP.