

Long-Term Ecosystem and Human Adjustments to Changing Climate in Florida as a Response Model for 21st Century Models

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The Florida landscape has undergone profound climate change during the late Pleistocene and Holocene, especially regarding rainfall and associated water levels in fresh water ecosystems. During the last glacial period, the state was essentially a desert with few fresh water environments, and it was not until 3,500-5,000 years ago that aquatic features recognizable today began to fill with water. Thus, not only are fresh water ecosystems in the state relatively young, but they formed and continued to respond to profound stresses associated with water availability. Similarly, the record of human populations in Florida had to adapt to availability of aquatic resources, the long term sustainability of which was questionable. We shall discuss the record both of ecosystem and human responses to variable climate in Florida and present the latest results of our modeling of climate change for peninsular Florida for the next 50 years based on land and lake temperature data sets. Particular emphasis will be placed on how the historical record of ecosystem structural and functional aspects can be used as a response model to alterations in the configuration of climatic zones within Florida.

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