

## **GEOLOGICAL HISTORY OF FLORIDA'S WATER OVER THE PAST 40 MILLION YEARS**

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Based on the sedimentary rock exposures on the peninsula today, Florida has existed as a geological entity for at least 40 million years since the Eocene epoch. This talk provides an overview of the geological history of coastal and marine waters offshore and freshwater springs, rivers, streams, and lakes developed on the emerging Florida peninsula since the Eocene. In addition, a major geomorphic feature affecting the distribution of terrestrial waters during this time was the development of karst topography on the dominant limestone bedrock, including the Floridan aquifer.

Our understanding of this geological history of Florida waters also comes from the kinds of fossils preserved in sediments that indicate ancient ecologies and environments. Marine fossils include whales and giant sharks; terrestrial fossils include extinct megafauna such as the terror bird, horses, rhinos, proboscideans and giant ground sloths.

Geological evidence also documents the changes in subaerial paleoenvironments on the Florida peninsula that fluctuated with changing sea-levels. During the Pliocene Warm Period about 3 million years ago, about 80 % of the current Florida peninsula was inundated and this serves as a model for what will happen as a result of global warming and sea-level rise in the future.

PRESENTER BIO: Dr. MacFadden is UF Distinguished Professor and Director, TESI. A UF faculty member since 1977, he is the author of 200 peer-reviewed papers and the recent *Broader Impacts* book (2019, Cambridge). His primary field of scientific research is vertebrate paleontology and evolution.