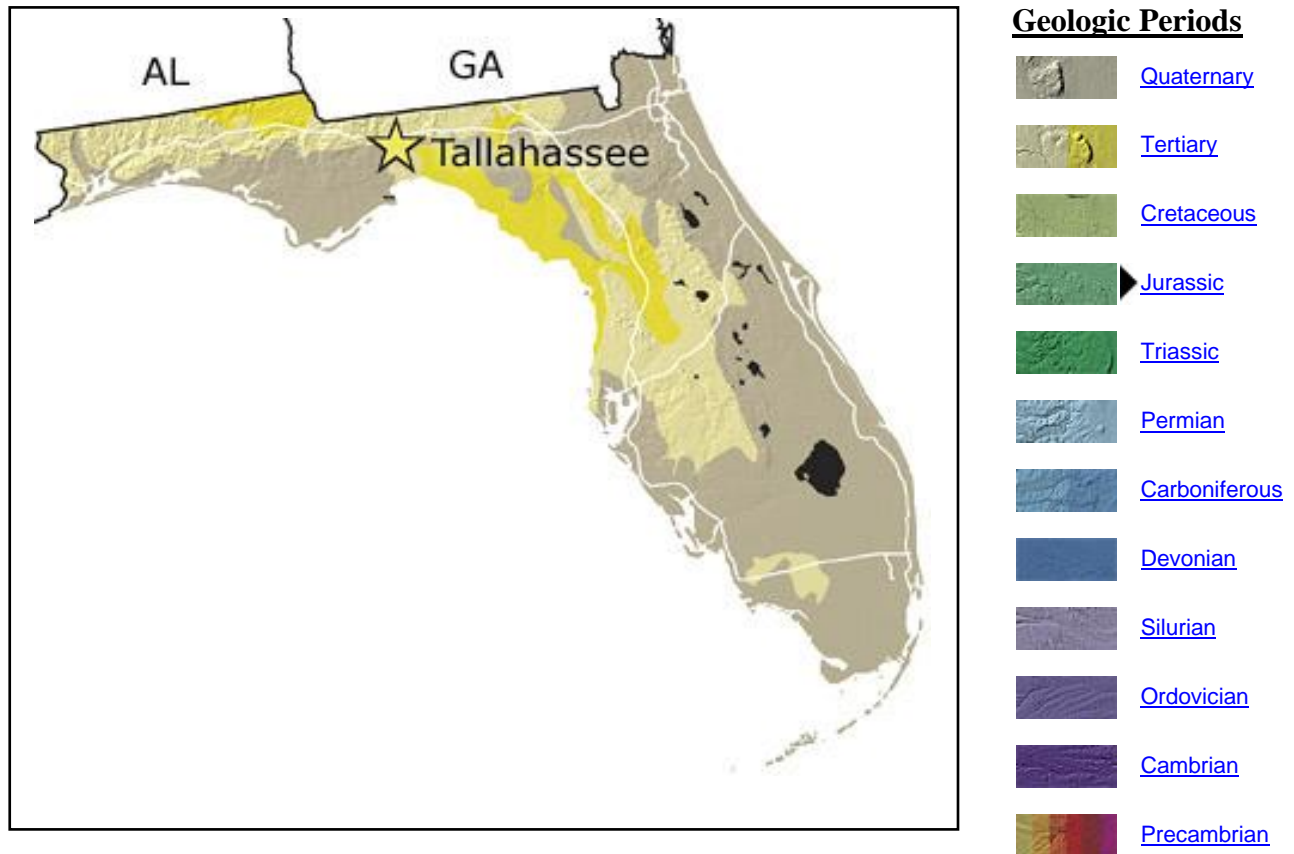


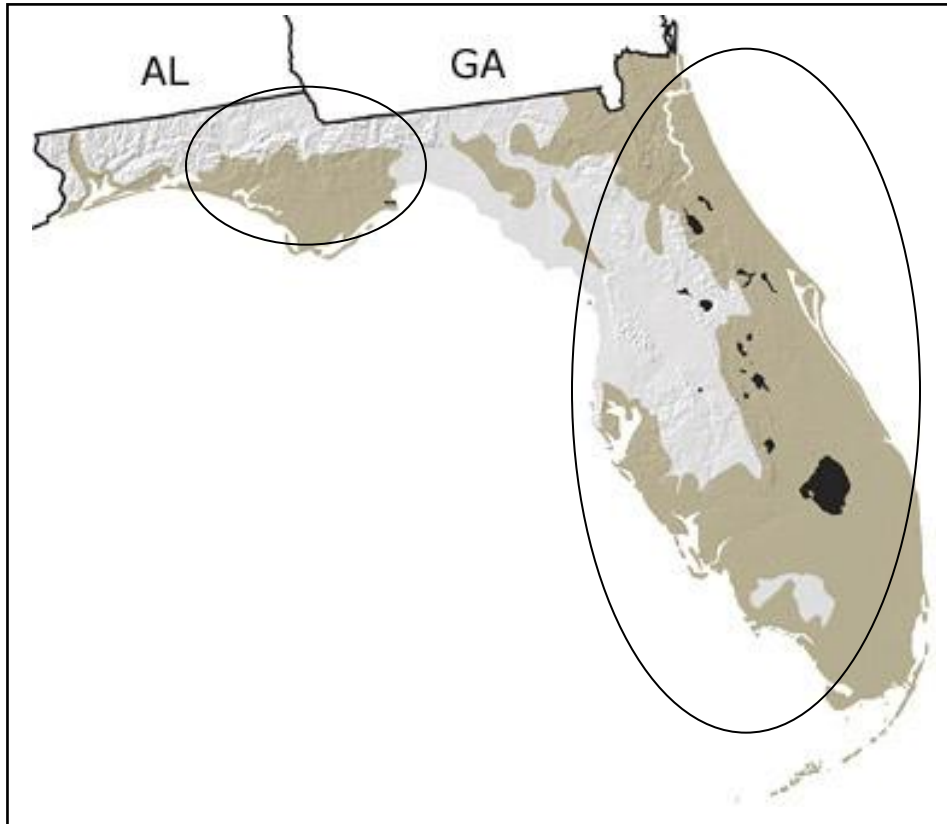
## Florida – Paleontology and Geology Overview



**The Precambrian, Paleozoic, and Mesozoic:** There are no surface rocks exposed in Florida for the Precambrian through the Mesozoic, although some subsurface rocks do exist and provide us information about Florida's early history. Prior to the Late Paleozoic, Florida was not attached to our continent. Some subsurface Jurassic rocks indicate that the state was originally part of the ancient southern hemisphere continent of Gondwana. During the Permian, Gondwana collided with what is now North America to form the supercontinent of Pangea. When plate movement tore Pangea apart during the Mesozoic, the crust beneath what is now Florida was left behind as part of the North American continent.

**The Cenozoic:** Cenozoic rocks are well represented in Florida. During the Tertiary, most of the state was covered by a shallow, tropical sea. Gastropods, clams, echinoderms, and other marine animals flourished in great abundance in the warm waters. Sea level fluctuated widely during the Quaternary as glaciers grew and melted in the far northern part of North America. Vast savannas formed during times of lower sea level, and mammoths, mastodons, horses, bison, and other large mammals roamed the state.

## Florida – Cenozoic Eras

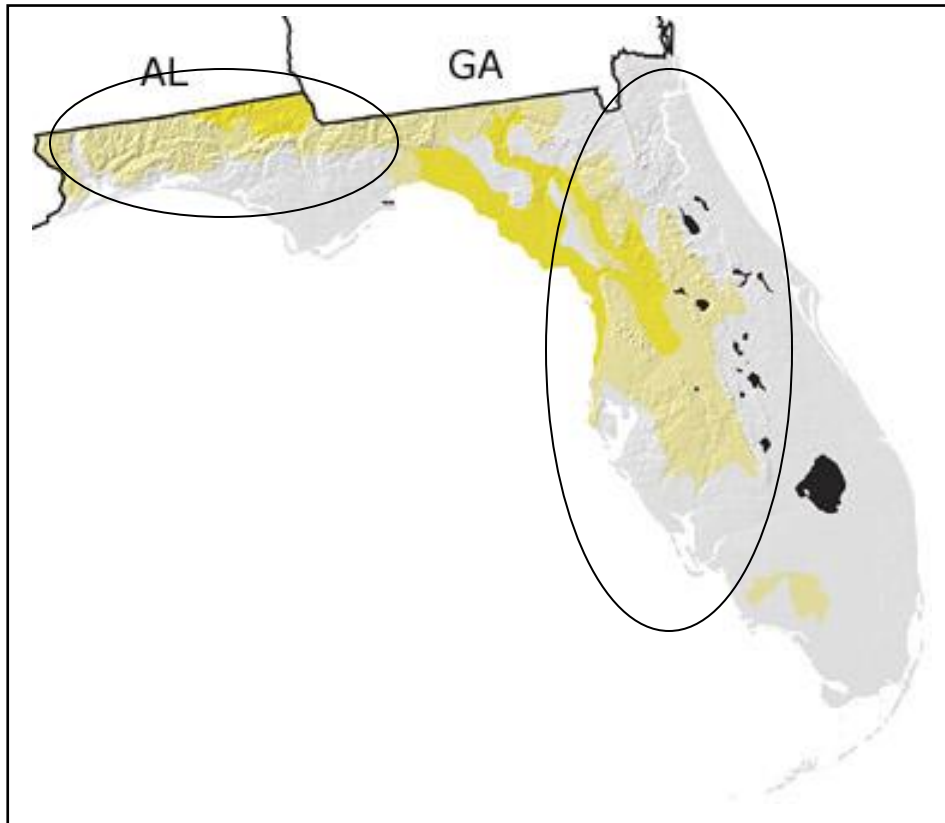


### Quaternary

During the Quaternary, sea level fluctuated widely as glaciers grew and melted in the northern part of North America. Thick, alternating layers of marine shells and freshwater marls now exposed along the Florida peninsula provide evidence of the rise and fall of sea level over the state at this time.

These fluctuations, coupled with Florida's low topography, caused major changes in the amount of exposed land area. As glaciers to the north grew larger, sea level dropped up to 125 meters below present level, and Florida's shoreline expanded nearly 150 kilometers to the west. Vast savannas formed and were populated by large animals, such as mammoths, mastodons, horses, and bison.

Today, fossils of some of these mammals are found in sediments on the sea floor in the Gulf of Mexico. During warmer interglacial times, sea level rose up to 45 meters above present sea level. Most of the state's modern topography (e.g. rivers, lakes, barrier islands) formed during this time.



### **Tertiary**

During the Early Tertiary, Florida was submerged under a shallow sea where limy sediment accumulated on the sea floor.

Later in the period, sands, silts, and clays from the eroding Appalachian Mountains filled a deep-water area (the Gulf Trough) that existed across a portion of what is now Florida's panhandle. This deposition produced an emergent landmass that was rapidly invaded by terrestrial plants and animals.

Sea level fluctuations continued in the Late Tertiary, and two of the world's most species-rich deposits, the Miocene Chipola Formation in the panhandle and the Pliocene Pinecrest beds of southern Florida, formed. Each unit contains a molluscan fauna with a diversity of over 1,000 species.

## Florida – Mesozoic Eras



### Cretaceous

There are no Cretaceous rocks exposed at the surface in Florida, but fossiliferous rocks of this age do occur in the subsurface.

### Jurassic

There are no Jurassic rocks exposed at the surface in Florida, but fossiliferous rocks of this age do occur in the subsurface.

### Triassic

There are no Triassic rocks exposed at the surface in Florida, but rocks of this age do occur in the subsurface.

## Florida – Paleozoic and Precambrian Eras



### Permian

There are no Permian rocks exposed at the surface in Florida, but fossiliferous rocks of this age do occur in the subsurface.

### Carboniferous

There are no Carboniferous rocks exposed at the surface in Florida, but fossiliferous rocks of this age do occur in the subsurface.

### Devonian

There are no Devonian rocks exposed at the surface in Florida, but fossiliferous rocks of this age do occur in the subsurface.

### Silurian

There are no Silurian rocks exposed at the surface in Florida, but fossiliferous rocks of this age do occur in the subsurface.



 **Ordovician**

There are no Ordovician rocks exposed at the surface in Florida, but fossiliferous rocks of this age do occur in the subsurface.

 **Cambrian**

There are no Cambrian rocks exposed at the surface in Florida, but rocks of this age do occur in the subsurface.

 **Precambrian**

There are no Precambrian rocks exposed at the surface in this state.