

## Natural History of North Carolina <sup>[1]</sup>

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By David Walbert, Learn NC, 2009

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See also: [Geologic History](#) <sup>[4]</sup>; [North Carolina State Fossil](#) <sup>[5]</sup> (fossilized teeth of the Megalodon Shark)

The land that is North Carolina existed long before humans arrived — billions of years before, in fact. Based on the age of the oldest rocks found on earth as well as in meteorites, scientists believe that the earth was formed about 4,500 million years (4.5 billion years) ago. The landmass under North Carolina began to form about 1,700 million years ago, and has been in constant change ever since. Continents broke apart, merged, then drifted apart again.

As landmasses came together, the Appalachian mountains (and other mountain ranges on the earth) were formed — and wind and water immediately began to wear them down by erosion. After North Carolina found its present place on the eastern coast of North America, the global climate warmed and cooled many times, melting and re-freezing the polar ice caps and causing the seas to rise and fell, covering and uncovering the [Coastal Plain](#) <sup>[6]</sup>. Recent geologic processes formed the Sand Hills, the [Uwharrie Mountains](#) <sup>[7]</sup>, and the [Outer Banks](#) <sup>[8]</sup>.

The first single-celled life forms appeared as early as 3,800 million years ago. It then took 2,000 million years for the first cells with nuclei — simple bacteria — to develop, and another 500 million years for multi-celled organisms to evolve. As life forms grew more complex, they diversified. Plants and animals became distinct. Gradually life crept out from the oceans and took over the land. Seed-bearing plants developed, then flowering plants, and finally grasses. Animals developed hard exterior shells for protection, then interior skeletons. Flying insects, amphibians, reptiles, dinosaurs, birds, and finally mammals emerged. Sudden changes in climate caused mass extinctions that wiped out most of the species on earth, making room for new species to evolve and take their places.

The ancestors of humans began to walk upright only a few million years ago, and our species, *Homo sapiens*, emerged only about 120,000 years ago. The first humans arrived in North Carolina just 10,000 years ago — and continued the process of environmental change through hunting, agriculture, and eventually development.

To help you understand the vastness of the time scales we're talking about, consider this: If the history of our planet were condensed into a single day, humans would have emerged just 2.3 seconds before midnight, and would have arrived in North Carolina two tenths of a second before midnight — literally the blink of an eye. And if that last two tenths of a second of human habitation were expanded into a full day, Europeans would have arrived at 11:02 pm, and a student now in eighth grade would have been born at 11:58 pm!

The history of all of these processes — geologic, climatic, environmental, biological — is called natural history. Scientists have divided the natural history of the planet into chunks of time called eons, eras, periods, and epochs. These chunks of time have names and approximate dates that correspond to events in geologic or fossil records. As scientists find new evidence, they revise these dates, and they don't always agree on how to do so. The science of natural history, like natural history itself, is an evolutionary process.

## Additional Resources:

Allosaurus Publishers. *North Carolina's geography & geology : mountains, piedmont & coastal plain*. Greensboro, N.C.: Allosaurus Publishers. 2008. <http://digital.ncdcr.gov/cdm/ref/collection/p249901coll37/id/24695> <sup>[9]</sup> (accessed September 2, 2015).

Allosaurus Publishers. *North Carolina's mountains, piedmont, & coastal plain in Spanish & English*. Greensboro, N.C.: Allosaurus Publishers. 2005. <http://digital.ncdcr.gov/cdm/ref/collection/p249901coll37/id/24987> <sup>[10]</sup> (accessed September 2, 2015).

### Subjects:

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