

If life was eliminated from our planet, it would appear to be a unchanging sphere of rock and water orbiting the Sun. This misconception is readily disproved by examining the underlying forces that shape the Earth. The study of these forces is known as Earth science, and includes the areas of meteorology, astronomy, geology, and oceanography. Interactions of these different areas of science are visible in the history of our planet, particularly in the formation of the Great Lakes.

About one billion years ago, a fissure in the Earth's crust split North America from what is now Lake Superior through Oklahoma. Magma filled the expanding fracture, creating a large basin located at a lower elevation than the surrounding land. Over the next 20 million years, this basin settled and hardened. It would eventually become home to the Great Lakes.

Ice ages followed this period of volcanic activity. As glaciers invaded North America, they carved hills and valleys by eroding and weathering soil and bedrock. As the final ice age ended, water from the melting glaciers filled the basin born of magma and shaped by ice. Thus, the Great Lakes were formed. These lakes have changed as the Earth's climate has warmed, but they still remain the product of ancient glacial deposits.

As a child, I vacationed on the shores of the Great Lakes and witnessed their connections to the rest of the world. These vast bodies of water play an essential role in the cool climate that exists around their shores. The gravity of the moon tugs on them, creating tides. In a sense, the Great Lakes are almost like miniature oceans, complete with an exquisite variety of aquatic life. These amazing natural wonders were created by the interactions of natural processes that continue to shape the Earth today.