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# YOUNG EARTH FLOOD GEOLOGY IN THE GRAND CANYON

by John Whitmore

I grew up in a Christian home and was first attracted to geology when my eighth-grade Earth Science class took a weeklong field trip around Ohio collecting fossils. I went on that trip again the next year and was hooked; I wanted to become a paleontologist. A year later, I traveled to the Grand Canyon for the first time. I'll never forget looking over the edge; I couldn't believe something could be that big! I studied geology at Kent State University, where I first

encountered potential challenges between my faith and geology. In a paper I wrote for my freshman honors English class on Darwin's *Origin of Species*, I compromised. I tried to put evolution and millions of years within the Genesis account. I wasn't happy with this approach because I knew Scripture didn't clearly suggest such a view, but I didn't know what else to do. I believed that both were true: conventional geology and Genesis, and so I tried to mash the two together.





Over the next few years, I learned that conventional geology did not have very good answers for some of the patterns in the rock record, but Genesis did! For example, why weren't there transitional fossils that demonstrated evolution from one group of animals to another? And why were there marine rocks on the continents almost everywhere I looked? And why did the fossil record begin all at once, with hardly any life-forms in the layers of rock below? As a young geologist, I learned that the Grand Canyon is not only one of the most spectacular geological wonders of the world, but its rocks are a great place to test the Genesis account of earth history. I found key impactful evidence that led me to believe the veracity of the Genesis account of world history.

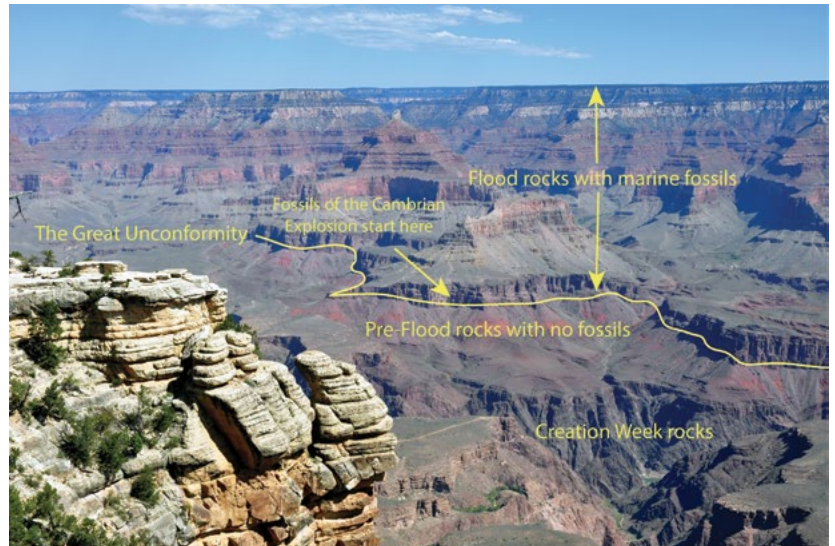
## THE GREAT UNCONFORMITY

In 1869, John Wesley Powell named The Great Unconformity during the first successful boat trip through the Grand Canyon. An unconformity is a buried surface of erosion. In other words, it marks a place in the rock strata where a significant amount of rock has been removed by erosion and other rocks have been deposited on top of that surface. Since Powell's discovery of the unconformity in the Grand Canyon, others have found that it is truly great. The same buried erosional surface can be traced across much of the North American continent and is even recognized on other continents. As a young geologist, I began to ask myself, "If Noah's flood was real, what kind of evidence would it have left in the rock record?" Genesis 7:11 tells us

that "all the fountains of the great deep burst forth and the floodgates of heaven were opened." If this happened, the earth's surface would have been severely scoured at the beginning of the flood, leaving an unconformity in its wake. This is exactly what we find, not only deep in the Grand Canyon but at the base of most of the fossiliferous strata around the world.

## THE CAMBRIAN EXPLOSION

The Great Unconformity rests directly below the rocks that contain the fossils of the Cambrian Explosion, or the first appearance of complex animals in the rock record. Among the fossil remains found in these layers are representatives of nearly every single phylum of animals on earth today, including the vertebrates! There are no animal fossils below The Great Unconformity (or below the Cambrian) that show the



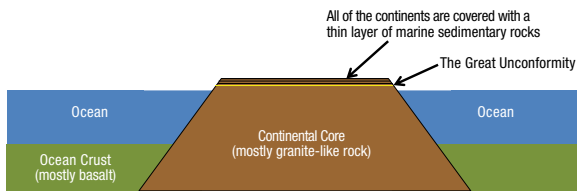
The Grand Canyon as viewed from the South Rim, Arizona. Note the creation week and pre-flood rocks below The Great Unconformity and the Cambrian Explosion and the flood rocks above the unconformity.

evolutionary predecessors to these organisms. Below the unconformity we find fossil bacteria, and immediately above, we find fossils of nearly every complex group of animals that we have today. This continues to be one of the most difficult problems for the theory of evolution — how did these animals originate? Again, Genesis seems to offer a solution: These organisms are the animals that were living on earth just before the flood. As the flood started, "billions of dead things became buried in rock layers all over the earth," as Ken Ham likes to say. This is why animals suddenly appear in these rock layers, not because they rapidly evolved, but because they were buried by the encroaching flood waters.

As a young geologist, I learned that the Grand Canyon is not only one of the most spectacular geological wonders of the world, but its rocks are a great place to test the Genesis account of earth history.

## MARINE TRANSGRESSION

In Genesis 7, we read that the waters rose and eventually covered the whole earth. So on top of The Great Unconformity, we should find marine layers that cover the continents. In geology, we refer to a sequence of rocks that represent a rise in sea level as a transgression. That is exactly what we find on top of The Great Unconformity, not only in the Grand Canyon but



The general construction of a continent. All continents have a granite-like rock core that was originally formed during the creation week. Early in the flood, the continents were eroded (making The Great Unconformity) and then a thin layer of marine rocks was laid down on top of that.

conventional geology. Continents are made of relatively lightweight rock compared to that of the ocean floors, and that is why the continents are above sea level. It is difficult (if not miraculous) to make the ocean come on top of a continent, let alone all of the continents at the same time; yet, that is what we find. As you look at the layers of rock above The Great Unconformity in the Grand Canyon, the layers are marine, and many extend across the entire North American continent.

## FOLDING LAYERS

When sediment is deposited on the ocean floor, it is deposited as flat, horizontal layers. However, in the Grand Canyon there are several places where the flat layers have been contorted into what geologists call “folds.” The sediments that make up the rock must have folded when they were still soft. If they were already



Folding in the Tapeats Sandstone in Carbon Canyon, a side canyon of the Grand Canyon. Note the people in the lower right hand corner for scale.

hard, they would have shattered when forces were applied, due to being brittle. We find such folds in the Tapeats Sandstone in Carbon Canyon, a side canyon deep within the Grand Canyon. The conventional story is the Tapeats Sandstone was

formed about 525

million years ago in the bottom of an ocean. Over time, this layer was buried deeply (more than a mile!) by other layers causing the Tapeats to turn into solid rock. Then, about 50 million years ago, as the story goes, the whole area was lifted up, and that is when the folding took place, about 475 million years after the original sandstone was formed. The problem with this theory is you cannot bend hard rock; it breaks instead of bends. A better explanation? The uplift happened soon after the Tapeats was deposited, not millions of years later. In this scenario, the sediments would have still been soft and folded easily, as the field evidence indicates. This more reasonable scenario eliminates hundreds of millions of years of Grand Canyon history!

## SOLID FOUNDATION

I have discussed just some of the evidence that I see in the rocks of the Grand Canyon that support a young earth and the story of Noah's flood. Evidences such as these led me as a young, Christian geologist to eventually accept the biblical account was true. So why do so many people not accept the biblical account as truth? In 2 Peter 3, Peter prophesies about the last days, saying men will “deliberately overlook” (ESV) or be “willfully ignorant” (KJV) of two truths: the fact that God created by His Word (v. 5) and the fact He destroyed the earth with Noah's flood (v. 6). Ignoring the Word of God or compromising what it clearly says is nothing new; Adam and Eve were the first to do it in the Garden. Today, we still fall for the same temptation, even in fields like geology. As Christians, we need to heed Peter's warning and encouragement when he says “... take care that you are not carried away with the error of lawless people and lose your own stability. But grow in the grace and knowledge of our Lord and Savior Jesus Christ” (2 Pet. 3:17–18).

**John Whitmore** is Professor of Geology at Cedarville University. He has been at Cedarville since 1991. He earned his Ph.D. in biology with a paleontology emphasis from Loma Linda University. He developed the Bachelor of Science in geology and Bachelor of Arts in geoscience majors at Cedarville — the only evangelical Christian school where these majors are offered from a young earth perspective. In 2015, Whitmore and three co-authors, including Cedarville Professor of Physics Steven Gollmer, published *The Heavens and the Earth, the first college-level earth science textbook from a young-earth perspective*. Whitmore has made numerous trips to the Grand Canyon and partners with *Answers in Genesis* and *Canyon Ministries* in guiding raft trips down the Colorado River.