



Inside Grand Canyon

How the Grand Canyon Was Shaped Over Time Transcript by Ranger Joseph Felgenhauer

Hello, I'm Ranger Felgenhauer and this, a beauty too great for the eye to behold.

But how was it made, and why is it here in Northern Arizona and no where else? These are questions that visitors often ask me. Isn't it human nature to wonder about our planets early beginnings?

In this Ranger Minute, I will present one perspective; I am going to give you a simple way to remember how the Grand Canyon was shaped over time. All you have to remember is **D. U. D. E.** And I'm going to use a high tech visual aid, books.

The first D stands for Deposition.

The top most four thousand feet of rock consist of sedimentary rocks. These sedimentary layers were deposited in ecosystems far different than what we see here today.

The tide came in and water covered this land and deposited sediment, lots of tiny particles, oceans receded and wind blown sands were deposited, over time the waters returned and more sediments were deposited, many types, some thick layers, some thin, different colors too, some purple, some tan and over time these sediments solidified to form rocks.

Many of these sediments were deposited under water. But I'm not underwater am I? Here at Lipan point I am standing over 7,000 feet above sea level.

U stands for Uplift.

The Grand Canyon is on the second largest plateau on planet earth, the Colorado plateau. This is an area around the four corners region of the United States. You can not have a grand canyon unless the rocks are lifted up high and flat.

The second D stands for Down cutting.

About 5 million years ago along came the Colorado River. There it is, The Colorado River, this river is singularly responsible for cutting down into the Colorado plateau thereby revealing millions of years of the earths history in the layers of these rock walls.

But wait a second here Ranger Felgenhauer, I see the river down there, but it's only about 300 feet wide, and I thought another ranger minute said the Grand Canyon is on average 10 miles wide, so was the Colorado River ever ten miles wide? ... Nope.

Well then where did the rest of the stuff go? Did glaciers pass through here and scrape everything out? ... Nope. What about Earthquakes, opening up the land along massive fault lines? Nope.

So what happened here anyway?

What does that E stand for? (Nod head) Erosion,

What kind of erosion? Wind erosion? (Blow on a rock) I don't think so.

Water, (slap a bucket of water on the ground) Rainfall and the freezing and thawing of snow and ice cracks the rocks, breaking them off and Gravity – urges all of this erosional debris downhill and down river, widening the canyon and revealing this stair step topography we see here today.

Let's review,

Deposition, Uplift, Down cutting and Erosion

I'm Ranger Felgenhauer. May the curiosity that lead you to click on this ranger minute lead you to new knowledge and great adventures, continue exploring.