

Chapter 83

Little If Any Evidence for Uniformitarian Hypotheses

In summary, there rarely is evidence for *any* of the three major uniformitarian hypotheses for the origin of water gaps. Most uniformitarian geologists simply invoke one of the mechanisms to explain water and wind gaps. Strangely, the investigators rarely present compelling evidence for any uniformitarian hypothesis. Some uniformitarian scientists attempt to invoke two or more hypotheses at the same time, as if using two unlikely hypotheses will somehow make them more correct (see in-depth section at the end of the chapter). It is easy to understand how the different hypotheses come and go for a particular area.

Did the River Cut the Gap?

Like canyons, uniformitarians assume, or write as if, the produced the gap, simply because a river is presently flowing through the gap. They ignore the possibility that another mechanism could have cut the gap and the river just followed the easiest route. Their reasoning is compromised by their commitment to uniformitarianism (or actualism). Their ideas, though plentiful, are poorly supported by observation.

Water Gaps Only Significant If the River Could Have Easily Gone Around

It is important to understand water gaps are only a puzzle when the river or stream could have more easily flowed around the ridge, plateau, or mountain range, but instead ended up cutting through a barrier. The reason for this deductin is that uniformitarian scientists could postulate that when the sediments wre thicker in the valleys and basins, the river just natural cut a gorge through the lowest area. The Columbia River Gorge between Oregon and Washington is a major water gap through the Cascade Mountains (see Figure 75.4), but it runs through one of the lowest paths through the Cascade Mountains. Presumably when the mountains were lower and/or the rocks in eastern Washington and Oregon higher, the drainage pattern would have already been established.

Researchers Say Little Or No Evidence

Thomas Oberlander probably has studied water gaps more rigorously than anyone else. He has many sobering thoughts on past and present research. He noted the *conjectural* emphasis in explanations:

...the question of the origin of geological discordant drainage has almost always been attacked *deductively*, leading toward conclusions that remain largely within the realm of *conjecture*. Accordingly, the anomalous stream courses are attributed to previous tectonic environment [antecedence], to superposition from *hypothetical* erosion surfaces or covermasses, or to headward extension under largely *unspecified* controls [stream piracy] (emphasis mine).¹

Twenty years later, Oberlander expressed the same opinion:

¹ Oberlander, T., 1965. *The Zagros Streams: A New Interpretation of Transverse Drainage in an Orogenic Zone*, Syracuse Geographical Series No. 1, Syracuse, NY, p. 1.

Large streams transverse to deformational structures are conspicuous geomorphic elements in orogens [mountain ranges] of *all ages*. Each such stream and each breached structure presents a geomorphic problem. However, the *apparent absence of empirical evidence* for the origin of such drainage generally limits comment upon it (emphasis mine).²

He further stated:

Transverse streams in areas of Cenozoic deformation are routinely attributed to stream antecedence to structure; where older structures are involved the choice includes antecedence, stream superposition from an unidentified covermass, or headward stream extension in some unspecified manner [piracy]. Whatever the choice, we are *rarely* provided with conclusive supporting arguments (emphasis mine).³

John Douglas added:

Despite more than two centuries of study, our understanding of transverse drainage development [origin of water gaps] remains very much in its infancy ... No general theory building has allowed transverse drainage research to move beyond a compilation of empirical data with *intuitive explanations being the norm* (emphasis mine).⁴

The main point is that certain features of the rocks invoke pat answers to anomalous rivers, regardless of the fact there rarely is any supporting evidence.

Once again, it appears all uniformitarian hypotheses explaining water, as well as wind, gaps are insufficient. We must wonder if it is the hypotheses or the parent paradigm that creates all the trouble.

OverSpill Hypothesis for the Origin of Grand Canyon?

Geologist Eliot Blackwelder⁵ was the first to propose that the Grand Canyon was eroded by rushing water derived from the spillover of a lake that was ponded northeast of the Kaibab Plateau⁶ His suggestion was given no credence for many years, but recently has been revived.^{6,7,8,9,10} The updated hypothesis proposes that a lake called Lake Hopi or Lake Bidahochi

² Oberlander, T.M., 1985. Origin of drainage transverse to structures in orogens. In, Morisawa, M. and J.T. Hack (editors), *Tectonic Geomorphology*, Allen and Unwin, Boston, MA, p. 155.

³ Oberlander, Ref. 2, pp. 155-156.

⁴ Douglas, J.C., 2005. Criterion approach to transverse drainages. PhD thesis, Arizona State University, Tucson, AZ, pp. 20, 40.

⁵ Blackwelder, E., Origin of the Colorado River, *GSA Bulletin* **45**:551-566, 1934.

⁶ Meek, N. and J. Douglass, 2001. Lake overflow: An alternative hypothesis for Grand Canyon incision and development of the Colorado River. In: Young, R.A. and E.E. Spamer (editors), *Colorado River Origin and Evolution: Proceedings of a Symposium Held at Grand Canyon National Park in June, 2000*, Grand Canyon Association, Grand Canyon, AZ, pp. 199-204.

⁷ Perkins, S., The making of a Grand Canyon: Carving this beloved hole in the ground may not have been such a long-term project, *Science News* **158**:218-220, 2000.

⁸ Scarborough, R., Neogene development of Little Colorado River Valley and eastern Grand Canyon: Field evidence for an overtopping hypothesis. In: Young, R.A. and E.E. Spamer (editors), *Colorado River Origin and Evolution: Proceedings of a Symposium Held at Grand Canyon National Park in June, 2000*, pp. 207-212, Grand Canyon Association, Grand Canyon, AZ, 2001.

⁹ Spencer, J.E. and P.A. Pearthree, Headward erosion versus closed-basin spillover as alternative causes of Neogene capture of the ancestral Colorado River by the Gulf of California. In: Young, R.A. and E.E. Spamer (editors), *Colorado River Origin and Evolution: Proceedings of a Symposium Held at Grand Canyon National Park in June, 2000*, pp. 215-219, Grand Canyon Association, Grand Canyon, AZ, 2001.

¹⁰ Douglass, J., 1999. *Late Cenozoic Landscape Evolution Study of the Eastern Grand Canyon Region*, Master of Arts thesis, Northern Arizona University, Flagstaff, AZ.

developed in the region of the Little Colorado River Valley, with another lake possibly sited northeast of the Kaibab Plateau. At some point, floodwater spilling from the lake or lakes breached the Kaibab Plateau to form the Grand Canyon.

However, based on a flume experiment, one of the main advocates of the spillover hypothesis states that there should be shorelines developed upstream of the breach,^{11,12} but there are none. Moreover, a retreating knickpoint or knickzone (a wide knickpoint) is required for deep erosion:

These experiments suggest that without the generation and retreat of a knickzone, in most conditions the overflowing water across the divide lacks the critical shear stress and available sediment necessary to erode bedrock.¹³

Where is a significant knickzone going to develop? And if a lake breached, one would expect strath terraces (see Chapter 60) to form upstream of the breach from the fast flowing water.¹²

Dickinson examined the lake spillover hypothesis and found it inadequate.¹⁴ Regardless, the origin of Grand Canyon still remains one of the major unsolved mysteries of geomorphology:

Grand Canyon is an international icon, arguably the most renowned landform on the planet with the possible exception of Mt. Everest. How the Grand Canyon formed persists as an unanswered question for nearly 150 years, ever since Newberry proposed the first scientific hypothesis in 1862.¹⁵

The overspill hypothesis for origin of the Grand Canyon is similar to the creationist dam breach hypothesis from two or three lakes southeast supposedly ponded northeast of the Kaibab Plateau (Figure 83.1).^{16,17} However, there are also numerous problems with the dam breach hypothesis.^{18,19}

The overspill hypothesis has been suggested for only a few water gaps, such as on the Zambezi River in Africa,²⁰ which could be a correct hypothesis for that water gap. But as a general explanation for water gaps, it has only local application at best.

¹¹ Douglas, Ref. 4, p. 76.

¹² Douglas, M. and M. Schmeckle, 2007. Analogue modeling of transverse drainage mechanisms. *Geomorphology* 84:22–43.

¹³ Douglas, Ref. 4, p. 70.

¹⁴ Dickinson, W.R., 2013. Rejection of the lake spillover model for initial incision of the Grand Canyon, and discussion of alternatives. *Geosphere* 9(1):1–20.
9(1):1–20, 2013.

¹⁵ Douglas, Ref. 4, pp. 113–114.

¹⁶ Austin, S.A., 1994. How was Grand Canyon eroded? In, Austin, S.A. (editor), *Grand Canyon: Monument to Catastrophe*, Institute for Creation Research, Dallas, TX, pp. 83–110.

¹⁷ Brown, W., 2008. *In the Beginning: Compelling Evidence for Creation and the Flood*, 8th edition, Center for Scientific Creation, Phoenix, AZ.

¹⁸ Oard, M.J., 2010. The origin of Grand Canyon part II: fatal problems with the dam-breach hypothesis. *Creation Research Society Quarterly* 46(4):290–307.

¹⁹ Oard, M.J. 2014 (ebook). A Grand Origin for Grand Canyon. Creation Research Society, Chino Valley, AZ.

²⁰ Thomas, D.S.G. and P.A. Shaw, 1992. The Zambezi River: tectonics, climatic change and drainage evolution—is there really evidence for a catastrophic flood? a discussion. *Palaeogeography, Palaeoclimatology, Palaeoecology* 91:175–178.



Figure 83.1. The three lakes proposed in one version of the creationist dam breach hypothesis southeast and northeast of the Kaibab Plateau.

Special, But Unlikely, Combinations (in-depth section)

Oberlander, seemingly stuck with no hypothesis, weakly suggested that an analysis of local stratigraphy and structure may provide an explanation.²¹ Even after eliminating each of the major hypotheses for origin of water gaps in the Zagros Mountains as a whole, he hypothesizes that each of the mechanisms or a combination of mechanisms *may apply to local areas*. In other words, Oberlander realized that no one hypothesis could explain the origin of all 300 major water gaps in the Zagros Mountains, so he used all three hypotheses in one combination or another.²² How can three unlikely hypotheses be combined to make the origin of water gaps more plausible?

In Italy, Walter Alvarez suggested that a combination of antecedence and superposition caused the water gaps on the east slopes of the Apennine Mountains at or a little below sea

²¹ Oberlander, T.M., 1985. Origin of drainage transverse to structures in orogens. In, Morisawa, M. and J.T. Hack (editors), *Tectonic Geomorphology*, Allen and Unwin, Boston, MA, pp. 155-182.

²² Mills, H.H., G.R. Brakenridge, R.B. Jacobson, W.L. Newell, M.J. Pavich, and J.S. Pomeroy, 1987. Appalachian mountains and plateaus, In, Graf, W.L. (editor), *Geomorphic Systems of North America*, Geological Society of America Centennial Special Volume 2, Boulder, CO, p. 14.

level.²³ In a series of folds and thrusts that began in the southwest and propagated northeast, he suggested that each fold spreads debris northeast over the next incipient underwater anticline to the northeast, burying the anticline with a river flowing over the debris and eroding downward into the anticline. Then as the anticline continues to uplift, a water gap is formed. The eroded debris during this process is spread northeastward to over the third anticline, burying it, and cutting a water gap. The mechanism is hypothetical, since all events must be precisely timed and actually occur in order and magnitude as the hypothesis suggests. The sequence must propagate northeast at a more or less constant rate. Enough debris must erode to cover the offshore anticline. Smaller streams cannot form wind gaps on the covermass (there are no wind gaps). The main eroding river, while eroding the “covermass” over the anticline, flowed straight northeast without being thrown out of its path by any of the tectonics and sedimentation. The process is supposed to be continuing today, but there is no anticline just offshore. The whole idea is hypothetical.

²³ Alvarez, W., 1999. Drainage on evolving fold-thrust belts: A study of transverse canyons in the Apennines. *Basin Research* 11:267-284.