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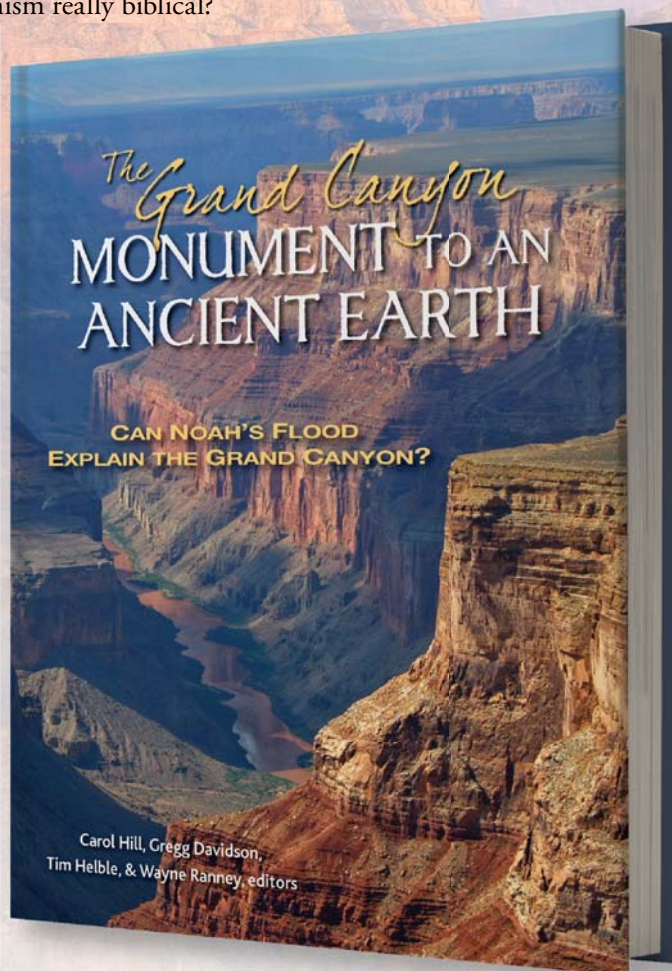
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# How the Book, *Can Noah's Flood Explain the Grand Canyon?*, Came to Be

Carol A. Hill



Carol A. Hill

*This is the story of how the book The Grand Canyon, Monument to an Ancient Earth: Can Noah's Flood Explain the Grand Canyon?, ed. Carol Hill, Gregg Davidson, Wayne Ranney, and Tim Helble (Grand Rapids, MI: Kregel Publications, 2016), ISBN-13: 978-0825444210, came to be published and how the American Scientific Affiliation (ASA) and others supported its publication.*

## The Meeting

Five years ago at the October 2010 meeting of the Geological Society of America (GSA) in Denver, Colorado, Carol Hill and Gregg Davidson were presenting in different GSA sessions and happened to sit next to each other at a restaurant. Carol had never met Gregg before, but as fellow geologists "shop talk" was easy, and soon the topic turned to the Grand Canyon. It was then that Carol expressed her vision to Gregg about publishing a book for the lay public as to why the young earth creationist (YEC) position of "flood geology" (FG) cannot explain the Grand Canyon.

Flood geology is the global-flood position in which almost all sedimentary rock on planet Earth is considered to have been deposited in the single year of Noah's flood. Carol was skeptical that such a book would ever be published as it seemed to fall in "no-man's land," where it was too religious to interest secular publishers, and too science-focused or controversial for Christian publishers. But when Gregg mentioned he had experience with micropublishing companies that handled science-scripture books of this nature, Carol jumped at the opportunity and the two agreed to look into the matter.

## The Authors

Carol immediately began thinking about possible authors for the different geologic topics that would need to be covered. She felt that the authors of these chapters should be picked—not on the basis of their being Christians or non-Christians—but on their professional expertise both in the Grand Canyon and elsewhere, and on their experience in dealing with YECs. The first geologist that came to mind was Wayne Ranney, whom Carol had worked with in the Grand Canyon since 2000.<sup>1</sup> She knew that Wayne was an excellent writer for the lay public, having published *Carving Grand Canyon*, which in its two editions has sold more than 30,000 copies.<sup>2</sup>

The next person Carol contacted was Steve Moshier of Wheaton College, with whom she had worked in 2003–2004 on

**Carol A. Hill** has been working in the Grand Canyon for over seventeen years and has published articles on the geology of the canyon in *Science*, *Geomorphology*, *Journal of Hydrology*, and *Geosphere*. Her specialty is caves and karst, and she is the author of *Cave Minerals of the World*, *Geology of Carlsbad Cavern*, and *Geology of the Delaware Basin*. She has been featured on NOVA and on *Naked Science*, a program of National Geographic. Carol is a Fellow of the American Scientific Affiliation and has written a number of articles for *Perspectives on Science and Christian Faith*.



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an ASA science book project that was not completed, and in 2009 on a *Perspectives on Science and Christian Faith* (PSCF) critique of flood geology and the Grand Canyon.<sup>3</sup> Steve was an excellent resource on the various sciences such as stratigraphy, but especially valuable was his knowledge of how young earth creationism fits historically with modern geology. Just the person we needed!

Then Carol thought of Ken Wolgemuth, with whom she had worked in 1990 and 1999 when publishing two papers for the *American Association of Petroleum Geologists* (AAPG) *Bulletin*.<sup>4</sup> Since Ken had supervised book publications for the AAPG, he would be an excellent resource person for managing our book. Also, Ken had founded Solid Rock Lectures (SRL) in 2008 for the purpose of reaching seminary students—one of the prime target audiences for the book—so this was another definite plus.

Roger Wiens was another who quickly came to mind. Roger is the principal investigator of the *Curiosity* Rover ChemCam project on planet Mars, and had in 1994 prepared an online article, *Radiometric Dating: A Christian Perspective*, that was posted on the ASA website.<sup>5</sup>

Carol also knew of two other possible authors from their articles in PSCF: Joel Duff and Tim Helble. Joel is a biologist, not a geologist, but his paper on

the lack of fossil pollen in *any* of the rocks in the Grand Canyon was important evidence against the tumultuous global flood model of FG.<sup>6</sup> Tim Helble was an extremely important “find.” Not only had Tim worked as a hydrologist for NOAA (National Oceanic and Atmospheric Administration) and had published in PSCF,<sup>7</sup> but he had also tracked the flood-geology literature for over 30 years. This expertise was invaluable to the rest of us with less knowledge about the claims of FG, and Tim’s knowledge base eventually became the core of our book’s Reference section. In addition, Tim was both an experienced cartographer and an excellent photographer who had recently retired; so with these qualifications, he became our photographic/illustration editor.

Wayne Ranney also became a photo editor since he had contacts with a number of professional Grand Canyon photographers, and because he had amassed a large personal photo collection over his 30 years of working in the canyon.

This cohort of authors was an excellent start, but we still had not identified anyone to cover the important fields of paleontology and structural geology. Carol remembered reading Davis Young and Ralph Stearley’s book *The Bible, Rocks and Time*,<sup>8</sup> and so she contacted Ralph, paleontologist at Calvin College, who agreed to be involved in the project. In addition, Wayne suggested David Elliott of Northern Arizona



Photo credit: Wayne Ranney

**OOH-AAH POINT, VIEWPOINT FROM THE SOUTH KAIBAB TRAILHEAD**

University to be the author of a trace-fossil chapter (trace fossils are things such as footprints and burrows). Dave's specialty is reptile and arthropod footprints in the Coconino Sandstone (again, another person much needed!); along with our botanist Joel Duff, we now had three on board in the fossil department.

The last author to be contacted, Bryan Tapp, a structural geologist at the University of Tulsa, was suggested by Ken Wolgemuth, and together they authored the two chapters on plate tectonics and structural geology. The addition of Bryan fixed the "Canyon's eleven."<sup>9</sup> As we later came to realize, these authors seemed providential because they all turned out to be perfect for the job.

## The Philosophy

Carol and Gregg felt that setting a "philosophical" basis for the book was important for establishing its overall purpose and construction; therefore, before writing even began, they discussed the "mindset" of YEC/FG and the best way to challenge flood geology with the facts of modern geology. Young earth or flood geology adherents often claim that we are all looking at the same data but that our different worldviews cause us to "see" the data as evidence for vastly different and conflicting processes. The underlying assertion is that we are all practicing good science, but are arriving at different interpretations of the data because of the biblical or humanistic "glasses" each person wears. Gregg and Carol decided that, since flood geologists argue that their *geologic* interpretations *are* in fact testable by scientific investigation, we would do what other scientists do with controversial subjects: we would evaluate each FG claim on its *scientific merit* while keeping in mind the cultural context of the biblical flood story.

The next philosophical issue to be addressed by our enlarging author group was, How confrontational should we be with flood geologists? "Debates" between modern geologists and flood geologists notoriously generate more heat than light, and our intent was for our book to be a true exposition of the science involved—not a book that would generate angry, reactionary responses from many of the people it was intended for. The scriptural passage that seemed to best fit this issue was "Speak the truth in love" (Eph. 4:15), and that is what we tried to do:

be as irenic as possible while presenting the geologic evidence that denied the FG position of a young earth and global flood.

After deciding on a respectful, yet truthful, approach, now came the hard task of deciding how to present evolution. Evolution is a confrontational subject in some Christian churches, and even the mention of the "E-word" can be divisive between Christian believers. And divisiveness was not what any of the "Canyon's eleven" wanted! We wanted our readers to come to our book with open minds on the subject of evolution. Ralph Stearley was especially helpful in this regard, as he had taught paleontology at Calvin College for many years and knew how to present this tough topic. After much deliberation, we decided to let the data of biostratigraphy stand on its own; that is, the amazing order to fossils in geologic strata is an empirical and noncontroversial fact which has been reified by thousands of amateur rockhounds as well as by professionals. Fossils also elegantly testify

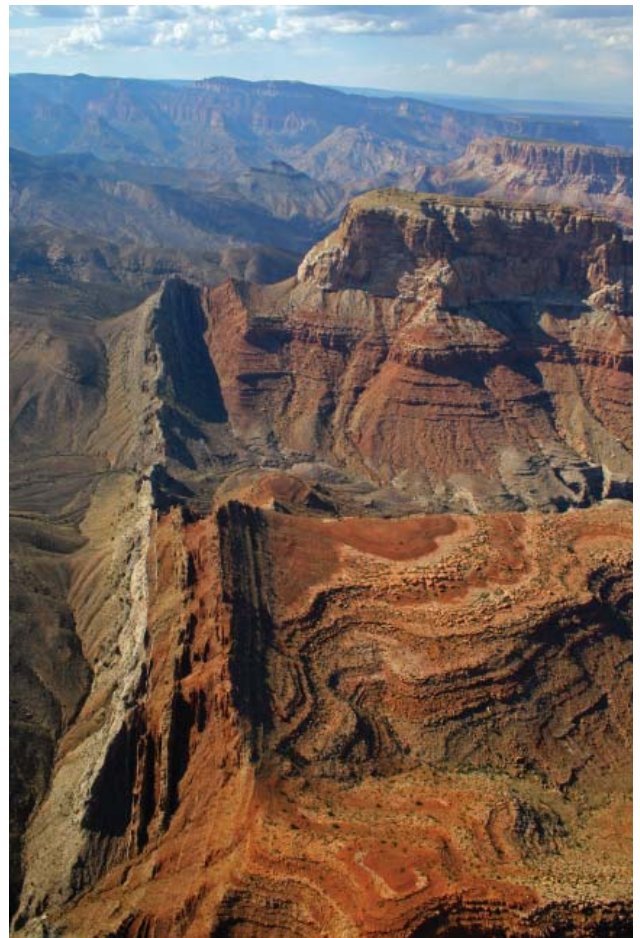


Photo credit: Wayne Ranney

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to a long sequence of ancient environments and ecological communities—not to a single, one-size-fits-all catastrophe as per a global flood geology model. The best way to proceed, we felt, was to keep our focus on the plain, empirical record of fossil occurrences; respond firmly to some sad half-truths perpetuated in the flood geology literature about the fossil record; and allow the wonderful, providentially guided history of life to speak for itself.

Surmounting the next hurdle was to prove especially difficult: how to maintain a lay-reader level of writing for all twenty chapters written by eleven different authors. Geologists are not well known for their ability to write simply for a lay audience, but rather for expounding on their different areas of expertise in geologic terms. Providently for us, in Gregg Davidson we had exactly the right person to perform this difficult task. Gregg knew how to make scientific language easy to read and, as a result, the transitions from idea to idea and chapter to chapter flow flawlessly. This was extremely important because our goal was not just to challenge the precepts of flood

geology, but to teach the various disciplines of modern geology simply and understandably so that lay persons could judge for themselves why flood geology presents insurmountable problems to a logical interpretation of the natural world.

### The Funding

The hardest problem we faced was funding. What would it take to get the attention of a publisher that could reach the Christian community, our primary audience? A normal synopsis of the book? No! A preliminary layout of a book containing many professional color photos that could potentially be sold at the Grand Canyon with its more than 5 million visitors a year?<sup>10</sup> Yes! The question then was, How do we raise the money for this initial lay out? Again providentially, we had Ken's expertise with AAPG publications and oil-industry contacts, which enabled him to invite contributions to this important public education effort. Most geologists have heard about YEC and flood geology, and knowing how it degrades geological education, many of those approached by Ken expressed their appreciation that we had taken on this project.

Another source of funding came through the John Templeton Foundation to BioLogos,<sup>11</sup> with the specified intent of exploring and promoting the intersection of science and Christian faith. In 2012, BioLogos received a large grant from Templeton and, in turn, BioLogos awarded smaller grants to various applicants and organizations, among which were three of our book's authors: Gregg, Ralph, and Steve. These awards and interactions with people from the John Templeton Foundation and BioLogos contributed both intellectually and financially to our Grand Canyon book project.

As well, the American Scientific Affiliation has played a significant role in supporting the publication of our Grand Canyon book—in ways both subtle and financial. By "subtle" it is meant that we all gain from our membership in the ASA by obtaining intellectual and theological knowledge, companionship, and people contacts. Specifically for this book, Carol's ASA contacts (direct or indirect) with Steve Moshier, Ken Wolgemuth, Roger Wiens, Gregg Davidson, Joel Duff, Tim Helble, and Ralph Stearley were invaluable in identifying the right coauthors. ASA Executive Director Randy Isaac was especially helpful in that he provided valuable conceptual sup-



Photo credit: Bronze Black

**FOSSIL CORALS AND BRYOZOANS  
IN THE REDWALL LIMESTONE**

port and encouragement for the project. Financially, the ASA has supported this book by a generous contribution to its publication. As mentioned earlier, in 2003–2004, Steve and Carol were involved in an ASA education project that was not completed. Funds unused and some of the content for this effort were made available for the publication of our book.

## The Publisher

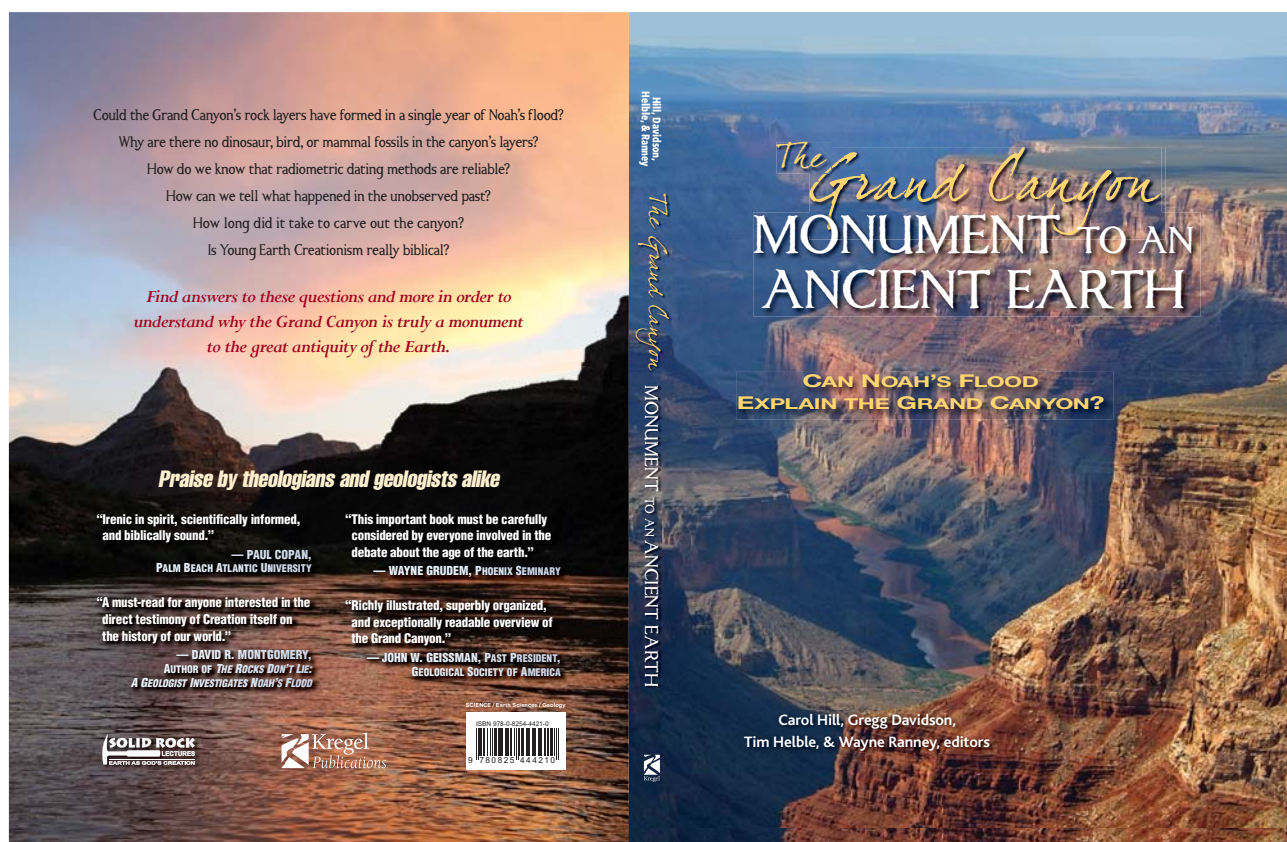
From the beginning of the project, we desired to have a Christian publisher in order to reach our primary audience. However, to be thorough, Ken and Gregg pursued secular, association, university, and Christian publishers for several years by writing and visiting with publishers (with rough drafts of the book in tow) at meetings of the Geological Society of America and the Evangelical Theological Society. Ultimately, Kregel Publications accepted the book for publication, and we were overjoyed! We were also blessed that Kregel selected a layout artist who lives in Tulsa where Ken lives, one who had years of experience doing geology books. All authors have graciously agreed that Solid Rock Lectures will be the copyright holder, and royalties are assigned to SRL for marketing and for continuing its outreach to

seminaries and the Christian community. For each of us “Canyon’s eleven,” it has been a labor of love to promote sound biblical and scientific understanding.

## The Purpose

We could not envision the overall purpose of our book when we began; rather, it evolved over time as the authors settled into their subjects, as editing of the chapters progressed, and as the photos began to enhance and enliven the writing of the text. The purpose of the book, as we might define it now, includes the following major goals:

- Explain to lay persons in simple terms that they can understand, why Noah’s flood—as portrayed by flood geology—cannot explain the Grand Canyon or any other geologic landscape.
- Teach the basic principles of geology to lay persons by drawing them into the Grand Canyon using the most beautiful photos possible.
- Teach why flood geology is *not* science.
- Use our book as a beginning geology textbook in secular and Christian colleges and universities in order to educate students as to how modern geology differs from flood geology.





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- Use our book in seminary workshops to equip future pastors to deal with science/scripture issues.
- Provide our book as a training aide for teachers and others who want to know exactly what YEC/FG are claiming, in order to be able to talk knowledgeably to classes, groups, family, and friends.

### The Book

In September of 2016 there is another GSA meeting in Denver. The completed book, six years earlier only envisioned by Carol and Gregg, will now be available—and not only at this meeting, but also at other geological meetings. The book arrived at eight Grand Canyon Association bookstores in time for the 2016 spring influx of visitors. It is now available on Amazon.com and other online venues.

*Can Noah's Flood Explain the Grand Canyon?* is 240 pages long and is filled with professional photographs, all in full color. Most important, all eleven authors believe that we have honestly tried to explain why the YEC/FG interpretation of planet Earth's age at only 6,000 years old, and of Noah's flood as global in extent, is fallacious—it is *not* supported by the geologic evidence found in the Grand Canyon or anywhere else on Earth.

Why does it matter who is right and who is wrong? We end our book with this answer: "*Truth always matters!*" †



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### Acknowledgments

The author would like to acknowledge the hard work and dedication of all of the coauthors of this Grand Canyon book. Without each one of them and their expertise, this book would not have been possible. She would also like to thank Gregg Davidson, Ken Wolgemuth, Steve Moshier, and Ralph Stearley for their helpful reviews of the manuscript. We (all of the authors) thank Bronze Black and Susan Coman for their "long-suffering" in dealing with the many changes in layout that this book underwent over many months. We also thank the ASA, BioLogos, and the John Templeton Foundation for their financial and administrative support. Finally, we would like to thank Dennis Hillman and others of Kregel Publications for their enthusiastic willingness to publish this book.

### Notes

<sup>1</sup>C. A. Hill and W. D. Ranney, "A Proposed Laramide Proto-Grand Canyon," *Geomorphology* 102 (2008): 482–95.

<sup>2</sup>W. D. Ranney, *Carving Grand Canyon* (2005; Grand Canyon, AZ: Grand Canyon Association, 2012), 160 (1st ed.) and 190 (2nd ed.).

<sup>3</sup>C. A. Hill and S. O. Moshier, "Flood Geology and the Grand Canyon: A Critique," *Perspectives on Science and Christian Faith* 61, no. 2 (2009): 99–115.

<sup>4</sup>C. A. Hill, "Sulfuric Acid Speleogenesis of Carlsbad Cavern and Its Relationship to Hydrocarbons, Delaware Basin, New Mexico and Texas," *American Association of Petroleum Geologists Bulletin* 74, no. 11 (1990): 1685–94; C. A. Hill, "Reevaluation of the Hovey Channel in the Delaware Basin, West Texas," *American Association of Petroleum Geologists Bulletin* 83, no. 2 (1999): 277–94.

<sup>5</sup>R. Wiens, "Radiometric Dating: A Christian Perspective," (2002), <http://www.asa3.org/ASA/resources/Wiens.html>.

<sup>6</sup>R. J. Duff, "Flood Geology's Abominable Mystery," *Perspectives on Science and Christian Faith* 60, no. 3 (2008): 166–77.

<sup>7</sup>T. K. Helble, "Sediment Transport and the Coconino Sandstone: A Reality Check on Flood Geology," *Perspectives on Science and Christian Faith* 63, no. 1 (2011): 25–41.

<sup>8</sup>D. A. Young and R. F. Stearley, *The Bible, Rocks and Time: Geological Evidence for the Age of the Earth* (Downers Grove, IL: InterVarsity Press, 2008), 510.

<sup>9</sup>Term coined by Davis Young in his endorsement of our book.

<sup>10</sup>According to the National Park Service's latest figures, about 5.5 million people visited Grand Canyon National Park in 2015, [https://irma.nps.gov/Stats/SSRSReports/Park Specific Reports/Recreation Visitors By Month \(1979 - Last Calendar Year\)?Park=GRCA](https://irma.nps.gov/Stats/SSRSReports/Park%20Specific%20Reports/Recreation%20Visitors%20By%20Month(1979%20-%20Last%20Calendar%20Year)?Park=GRCA).

<sup>11</sup>BioLogos is a Christian foundation which is dedicated to faith-science dialog and which promotes the theology of "evolutionary creation," the unifying theme of which is that God used evolution and common descent as his tool to carry out the creation of all life.

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