



**A GRANDE EXTINÇÃO EM MASSA:  
EVIDÊNCIAS E IMPLICAÇÕES DA  
MAIOR TRAGÉDIA AMBIENTAL DA  
HISTÓRIA DA TERRA**

**[A GREAT MASS EXTINCTION:  
EVIDENCE AND IMPLICATIONS OF  
THE BIGGEST ENVIRONMENTAL  
TRAGEDY IN EARTH’S HISTORY]**

*Nahor N. Souza Jr. (Tatuí, São Paulo, Brazil: Casa Publicadora Brasileira, 2021), paperback, 352 pages.*

**Reviewed by Roberto E. Biaggi**

A geologist who specializes in volcanic rocks, Nahor Souza is a professional with extensive experience. A university professor, researcher, and scholarly writer, Souza presents in the book under review a comprehensive understanding of the biblical flood, with its evidence and implications.

Souza’s work (*A grande extinção em massa: Evidências e implicações da maior tragédia ambiental da história da terra*) could not have come at a better time, for in the past few years, scientists have been increasingly discussing the catastrophic effects of an asteroid impact—the one produced by the impressive crater of Chicxulub in the Yucatán Peninsula. Recently (in April 2022) the BBC premiered a documentary in which Sir Attenborough critically reviewed the statements made since 2019, when researchers discovered the catastrophic effects of this impact more than 3,000 kilometers (or around 1,900 miles) away in North Dakota, in what is now the famous Tanis paleontological site. There, an accumulation of various sea and earth organisms resulted from a local water surge produced by seismic waves. More recent discoveries include a fully preserved dinosaur leg and a pterosaur’s egg with an embryo; all of these were instantly buried on the same day as the impact!

Souza’s book had its origins in a much more simplified version published in 2002 and a later edition in 2004: *Uma breve história da terra [A Brief History of the Earth]*. The current book, however, offers us in its first two sections updated evidence of various geological and paleontological features that the author calls “geo-scars,” which suggest a very catastrophic history of the planet. In explaining these phenomena, Souza refers to the principle of uniformitarianism put forward by Hutton in 1785 and summarized by Charles Lyell about 50 years later in the phrase: “The present is the key to the past.” After giving examples of the most catastrophic events currently recorded, such as earthquakes/tsunamis and volcanic eruptions, Souza asks, Could these phenomena produce fossilization of the remains of organisms? Are they the biggest catastrophic events that have occurred in Earth’s history? His answer is No.

After describing a variety of events from the geological past, Souza shows that, even though some of them were quite catastrophic, their reach was more local. Although others were regional and a few of a global nature that might certainly produce mass mortalities, individually, they were not the biggest environmental tragedy in Earth's history.

Chapter 3 and the rest of Section II deal with catastrophic global events such as major impacts by asteroids and comets, and massive volcanic super-eruptions that produced extensive igneous formations around the world and even seabeds. This argument leads the author to conclude that any full description of the history of our planet should include every global interconnected event, even the processes that led to movements in the tectonic plates that resulted in the movement of continents and the rise of mountain ranges, and other global events related to big and strong water currents, with all their effects on living organisms.

All this leads Souza to conclude (see Chapter 9: "The Great Catastrophe") with a cataclysmic model for the history of Earth in which six global events (see pages 137 to 147) are placed according to the severity of their causes (from first to fifth order) and their effects (also from first to fifth), final effects ("geo-scars"), and current events ("geo-echoes"). Souza discusses several scientific papers that provide documentary evidence for the cause-effect relationships.

Fossil lovers will like Chapter 8, where Souza presents several important examples of mass-mortality events that resulted in remarkable deposits of well-preserved fossils (such as tridimensional fish in Ceará, in northeast Brazil; and whale skeletons preserved with their baleens in Peru).

In Section IV, dealing with a brief history of the Earth, Souza summarizes an integrated model of a big catastrophe, connecting it with the biblical "historical narratives" (pp. 215, 216). He also addresses several topics related to the history of life on Earth in light of creationist/biblical concepts, such as the history of biodiversity, including the geological

and geographic distribution of populations. Souza connects them with a new proposal for the geological column, in which every catastrophic event he described before is relocated, as each is connected now to a chronology of events described in the Bible. The book includes a number of helpful charts and graphs that clarify the author's conclusions.

The chronological location of some of the events is a little controversial (for instance, the start and end of the Flood) since creationists suggest different timelines, but Souza not only offers alternative explanations but also provides evidence to support his view. Chapter 15 describes in some detail a five-phase sequence of events resulting from the Flood, perhaps the most significant environmental tragedy to strike the Earth.

The last section of the book offers a "promising model for origins." This section discusses the origin and development of modern science; advocates for combining the application of God's two books, the Bible and nature; and focuses on the various activities God carries out in nature. Souza recognizes that attempts to find harmony will always face "unavoidable confrontations" (pp. 277–279). Using several examples, he clarifies the nature of those conflicts between science and the Bible, and concludes that the same Creator God who has revealed to us His work of creation wishes for us to get to know Him through a study of His works in the world He created (Romans 1:19, 20).

Souza's book is undoubtedly the product of a lifetime of work. It is a noteworthy attempt to find harmony between the interpretations of God's two books, the Bible and nature. I hope that the publishers will eventually have it translated into languages other than Portuguese. ☪

**Roberto E. Biaggi**

*(PhD, Loma Linda University, California, U.S.A.) is an Adjunct Instructor of Geology in the Department of Earth and Biological Sciences at Loma Linda University.*